Effect of Board Diversity on Firm Performance in Different Social Contexts:

Evidence from Vietnam and Australia

By

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Contents

Abstract

The business case for board diversity is contrasted in two different social contexts in this thesis. Specifically, the effect of differences in gender, ethnicity, and the age of the directors may have on firm financial performance is compared across a sample of Vietnamese and Australian listed companies. The research employs the most efficient panel data regression method using a selection procedure of fixed/random effects testing. Regression output indicates that the gender and ethnic diversity of the board more positively influences Tobin's Q in Vietnam than they do in Australia while age diversity does not. Additionally, ethnic diversity more positively influences return on assets in Vietnam than in Australia, whereas age diversity more positively affects return on assets in Australia than in Vietnam. The result also suggests that there is no difference in the impact of gender diversity on return on assets across the two nations. These findings will have important implications for global harmonisation, the convergence of corporate governance, in general, and, in particular, recommendations about board diversity.

Statement of Originality

This is to certify that the content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

I certify that this thesis has not been submitted for a higher degree to any other university or institution.

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CHAPTER 1 – INTRODUCTION

1.1 Overview

The importance of good corporate governance is illustrated by the evolution of the subject over time. Focusing on boards as the crucial change makers to corporate governance practice, efforts have been made to ensure that boards of directors optimise their functions. Some notable examples of these efforts include: the requirement for a standing audit committee in the United States (US) (Securities Exchange Commission, 1972), the introduction of a dual board system in Europe (Kolvenbach, 1990), and the global concerns for broader stakeholders (Accounting Standards Steering Committee, 1975). The iconic corporate failures of the 1980s, such as Drexel Burnham Lambert in the US, Nomura Securities in Japan, Robert Maxwell's media empire in the United Kingdom (UK), and Rothwells Ltd in Australia, also highlight the important role of boards, which are generally characterised by powerful dominant executives, and maintain a concurrent chief executive officer/chair role with weak outside directors (Mintzberg, 1984).

Furthermore, global interest in better corporate governance, generally, and the boards' performance, in particular, can be seen from the emergence of many codes of corporate governance in the 1990s. Some prominent instances are the 1992 Cadbury Report in Britain, the 1995 Vienot Report in France, the 1997 Mandatory Statement on Corporate Governance in the US, and the 1998 International Guidelines on Corporate Governance by the Organisation for Economic Co-operation and Development (OECD). These codes propagated what were perceived to be ethical corporate governance practices, including segregation of the board's chair and chief executive posts, the use of sub-committees in boards, and stronger external independent directors.

Bank runs and further corporate collapses during the 2007 global financial crisis have proven that effective corporate governance is necessary not only to the entity itself, but also to broader society, and even the global community. Although various factors explain the effectiveness of corporate governance, this research only focuses on the board attributes for the reasons that follow. First, boards of directors are central to the thinking and practice of a firm's corporate governance. Second, this group receives special attention in most company laws and corporate governance codes. Lastly, the success of corporate governance is asserted to be, largely and subjectively, dependent on the directors.

Furthermore, the demographic diversity of boards of directors is currently perceived to be one of the key corporate governance matters. This issue has attracted attention from advocacy groups and policy makers, as well as from many corporations worldwide. To illustrate, the Interfaith Center on Corporate Responsibility states in its 2016 Corporate Governance Resolutions:

> In an increasingly complex global marketplace, the ability to draw on a wide range of viewpoints, backgrounds, skills, and experience is critical to a company's success. Diversity in senior management helps ensure that different perspectives are brought to bear on issues and increases the likelihood that proposed solutions will be nuanced and comprehensive. (para. 14)

In Australia, the Australian Securities Exchange (ASX) Corporate Governance Council (2010) recommends that firms promote board diversity because it is believed that it results in better firm performance (p. 24). However, even though they include gender, race, age, cultural, and educational backgrounds as attributes of diversity, their recommendations only emphasise increasing the percentage of female members in boardrooms. Concern for board heterogeneity is also shown by the following statement in Telstra's 2015 Annual Report:

> The Board actively seeks to ensure it has an appropriate mix of diversity (including gender diversity), skills, experience and expertise to enable it to discharge its responsibilities effectively and to be well equipped to help our company navigate the range of opportunities and challenges we face. (Telstra, 2015, p. 5)

It should be noted that Telstra (2009) did not mention the issue. It was only recommended afterwards by the ASX Corporate Governance Council, which may lead one to suspect the real financial benefit of board diversity and argue that firms are only trying to comply with these recommendations to build their image. In fact, empirical research into the relationship between firm performance and board diversity has produced equivocal evidence (Carter, D'Souza, Simkins, & Simpson, 2010). In addition, our understanding of diversity and performance relationship is underdeveloped in emerging markets where the issue is equally significant (Ararat, Aksu, & Tansel Cetin, 2015).

Motivated by the recent increasing global interest in board diversity and the limited, inconclusive empirical evidence on the issue, this research will revisit the topic using a contextualised approach, with an extended focus on several attributes of board heterogeneity such as gender, ethnicity, and age. The research contrasts the association between the

financial performance of firms and the demographic diversity of boards in two opposing social contexts. For these purpose, Vietnam and Australia have been chosen because these countries' demographic profiles match the conditions of the test. It is noteworthy that some researchers have identified this topic as one of the frontiers of corporate governance, and have called for greater diversity in boards to better reflect stakeholders' interest and even to mirror the diversity of the society (Tricker, 2015).

1.2 Background and Problem Statement

Corporate governance research has grown enormously since the concept was first introduced by Baysinger and Butler (1985). A search for 'board diversity research in peer reviewed journals' in Google Scholar yields about 22,500 results. Despite that fact, both a general theory and development of a specific theory are far from reality. Many issues remain unresolved. It cannot be concluded, for example, that a specific board composition may improve corporate outcomes. Ahrens, Filatotchev, and Thomsen (2009) observe that the majority of the research either find insignificant relationships between diversity among directors and firm performance, or it produces mixed results. There are a number of reasons that may cause such inconclusive findings including problems with measuring firm performance, omitted variables, complicated interactions and endogeneity, and many other non-governance factors (Ahrens et al., 2009).

The research into board diversity has primarily relied on resource dependence theory from a stakeholder perspective to clarify the advantages of board diversity (Lawal, 2012). In this stream, board diversity is classified as either: demographic factors such as gender, ethnicity and age, which may be directly observed; or from expertise and background such as educational level or occupational experience, which is less observable (Kang, Cheng, & Gray, 2007). Advocates justify the need for board diversity based on two important arguments. Huse and Rindova (2001) summarise the first argument in their assertion that corporate governance, under the stakeholder viewpoint, means the board responsibilities are not only to provide protection to the stockholders but also to show concern for the stakeholders. Thus, the representatives of those stakeholders should join the board. In which case, the diversity of the board would better address the dependence of the firm on the resources it needs by effectively linking the firm to the outer world (Ruigrok, Peck, Tacheva, Greve, & Hu, 2006). The second argument suggests that diversity allows access to a greater pool of talents who may bring creative ideas and innovative perspectives to the boardroom, thus improving the quality of

their decisions and ultimately firm performance (Erhardt, Werbel, & Shrader, 2003). However, critics of this argument contend that diversity may reduce board performance because diverse groups tend to lead to conflict, decelerating the decision process (Hambrick, Cho, & Chen, 1996).

Another research stream emphasises the gender diversity of boards, and empirically investigates the direct association between the firm's performance and the diversity of boards (Adams & Ferreira, 2009; Campbell & Minguez-Vera, 2008; Carter, Simkins, & Simpson, 2003; Dale-Olsen, Schøne, & Verner, 2013; Farrell & Hersch, 2005; Rose, 2007). The underlying proposition of these studies is that board functions are improved in line with board diversity. However, findings in this stream have been equally ambiguous. Empirical evidence from the UK and some studies using US context is inconclusive (Erhardt et al., 2003; Richard, 2000; Roberson & Park, 2007), and no significant relationship has been found in other US studies (Carter et al., 2010) or other contexts such as Australia (Wang & Clift, 2009).

Contemporary investigations examine the financial effect of board diversity with some modifications. Hutchinson, Mack, and Plastow (2015) find that, gender diversity in boards lessens firm risk, thereby improving financial performance for Australian listed companies. Kang et al. (2007), using a sample of Australia's top 100 companies, examines contextual factors such as the size of board and shareholding concentration that justify age and gender diversity in boards. Ararat et al. (2015) explore the contribution of ownership configuration to the financial influence of board heterogeneity. Others investigate the diversity within subcommittees of the boards (Carter et al., 2010; Hutchinson et al., 2015).

To date, most of research into board diversity shares some common features. In terms of purpose, they are either conducted to test the effect of certain new corporate governance regulations and recommendations by standard setters or to respond to corporate collapses. Second, the empirical research has been restricted to the context of developed countries, especially the US and UK where gender equality is concerned, which in turn, could distort the research outcome due to severe tokenism. The inclusion of women in the boards might simply be due to social and political pressure. This poses a need for a research conducted in a society where women rights are disregarded. Research in the Australian context is limited (Hutchinson et al., 2015; Kang et al., 2007; Wang & Clift, 2009) and produces mixed results. Studies in the developing countries are even scarcer. There has been essentially no empirical evidence found in the Vietnam context. Such a skewedness in empirical evidence may restrict the generalisability of the findings.

Corporate governance is no longer a within-nation issue. Many international corporate governance interest groups have been founded to encourage sound corporate governance and contribute to the development and improvement of the subject such as the International Shareholder Services, the Asian Corporate Governance Association, and the OECD. Cross-country comparative research into corporate governance has been recently conducted for some contexts. For example, Dore (2005) contrasts corporate governance in Japan and Germany where the Anglo-Saxon model is adopted. Aguilera, Williams, Conley, and Rupp (2006) compare corporate social responsibility and corporate governance in the US and the UK. Even more recently, corporate governance, market liquidity, and risk disclosure policies in Italy and the UK were collated by Elshandidy and Neri (2015). However, these studies are often undertaken in developed legitimate environments with cultural similarities (except for Dore's (2005) comparison of Japan and Germany whose legitimate environments are similar, but their cultures are relatively different). Such comparisons are not able to highlight variations in the issues of interest as much as when more distinct contexts are contrasted. Furthermore, no comparative study, that compares and contrasts the influence of board heterogeneity on firm performance in different social contexts, was revealed in an exhaustive search of the literature.

Current frontiers in corporate governance would not be thoroughly considered if the legitimate and cultural differences between developed and developing nations are not recognised. Advanced economies are likely to have the instruments and institutions necessary for successful corporate governance: well-developed company law, corporate governance codes, a reliable legal system, a liquid stock market, financial institutions with transparent and comprehensive disclosure, respected accounting professions, reliable auditing firms, director-related professional organisations and educational institutions, and reputable corporate governance research. While differences in legitimacy do affect corporate governance performance, a more directly related demographic difference could cause outcomes to vary significantly. These two factors combined hold one of the major challenges in creating a general theory of corporate governance around the world (Tricker, 2015). For the above reasons, a contrast of corporate governance with a focus on board diversity in Vietnam and Australia will have an important implication for the literature.

1.3 Aim and Objectives

Corporate governance, generally, and the financial benefit of board heterogeneity, particularly, has been of global interest. Additionally, accounting standards and corporate governance codes are converging at a rapid rate around the world. Whether this convergence is chiefly driven by economic benefit or is simply a repetition process due to political and social pressure remains unanswered. Therefore, this research aims to compare the potential impact that demographic heterogeneity in a board may have on a firm's performance in two different social contexts – Vietnam and Australia. The specific research questions this study seeks to answer are:

- How does the effect of gender diversity in a board of directors on firm performance differ across countries?
- How does the effect of ethnic diversity in a board of directors on firm performance differ across countries?
- How does the effect of age diversity in a board of directors on firm performance differ across countries?

1.4 Motivation and Contributions

The ultimate goal of this study is to discover whether the possibility of universal codes of corporate governance or board diversity recommendations is realistic. The research is motivated by recent global interest in improved corporate governance with respect to board diversity. For example, Hillman, Cannella, and Harris (2002) find that the participation of ethnic minorities and women in boards was a major trend in the US over the last two decades of the 19th century. Norwegian companies are required to nominate no less than 40 percent women on boards. Similarly, the Spanish legislation requests that firms have an effective policy concerning the quota of women on boards (Adams & Ferreira, 2009). In Britain, the Higgs Report contends that the effectiveness of the board is enhanced by its demographic diversity (Adams & Ferreira, 2009). In Australia, the 2010 ASX Corporate Governance Council recommendations suggest that women's presence in boards be increased.

Nevertheless, most legislation appears to ignore the other dimensions of demographic diversity such as ethnicity and age, even though they may be as equally important as gender diversity (Carter et al., 2010). For instance, the 2010 ASX Corporate Governance Council recommendations remain relatively silent on ethnicity and age diversity in Australian boards.

In Vietnam, the 2014 Law on Enterprise and Decision 12/2007/QD-BTC of the Ministry of Finance promulgating corporate governance regulations, applicable to listed companies, remains completely silent on the issue. The assumption that 'one size fits all' is critically challenged with respect to board diversity (Tricker, 2015). The argument that board heterogeneity has the same financial impact on firms in various contexts, especially those with opposite demographic backgrounds, deserves theoretical and empirical investigation. Vietnam and Australia were chosen for this comparison because their demographic backgrounds are relatively opposite to each other. Consequently, this research makes a number of contributions to both the extant theoretical framework and the practice of corporate governance.

This research promotes the progress of corporate governance theory in three manners. First, it further develops corporate governance literature by contextualising board diversity in various social and cultural backgrounds. In particular, the financial influence of board heterogeneity is compared between the two extremes of social and cultural settings to produce an implication for the harmonisation and convergence of corporate governance codes throughout the world. This is a novel and more powerful market test than the majority of previous empirical studies in which similar contexts are compared. Second, the research extends the knowledge of board diversity to reflect circumstances internal to Vietnam, a transition economy, which in turn expands empirical evidence on the topic that is seen as scant and skewed towards economically advanced countries. Third, this is the first study that considers the performance impact of three different types of board heterogeneity – ethnicity, age, and gender – in the Australian context.

The findings also have a number of practical implications for policy making. Changes in corporate governance are frequently reactions to critical events rather than theoretical evolution (Ahrens et al., 2009). In addition, prior empirical studies mainly used hindsight to evaluate the resulting impact of newly enforced regulations and policy recommendations. For example, Hutchinson et al. (2015) investigates the effect of the 2010 ASX Corporate Governance Council recommendations for increased female participation within boards on firm performance. However, their study would have contributed more to regulation-setting if their research had been conducted beforehand. Thus, this research takes a forward-looking approach, in an attempt to provide insights into the business case of board diversity so that more informed regulations and recommendations by regulators might be made in future. For example, whether a recommendation on age diversity at board level should be promulgated in

Australia, based on the evidence provided by this study. This also applies to other types of diversity, in Australia and in other countries. A holistic awareness of the issue will place policy makers and market participants in a more proactive position when dealing with such recommendations because changing board composition may be time-consuming and costly.

1.5 Organisation of the Thesis

This thesis is presented in six chapters. The first chapter provides the background to the research topic and outlines the aim and objectives of the thesis. Chapter 2 presents the theories relevant to the possible link between firm performance and board heterogeneity. Chapter 3 develops the research hypotheses by reviewing the relevant theories and empirical evidence on the association between firm financial performance and board diversity, as well as the social contexts of Vietnam and Australia. Chapter 4 discusses the statistical methods employed, followed by a detailed explanation of the procedure of collecting data and the research model. Chapter 5 reports the empirical results and the last chapter concludes the study, acknowledges its limitations, and suggests directions for future research.

CHAPTER 2 - OVERVIEW OF CORPORATE GOVERNANCE

2.1 Corporate Governance

There are various and somewhat overlapping definitions of corporate governance depending on authors' perspective. From an operational standpoint, corporate governance is viewed as the procedures and processes through which enterprises are controlled and directed. Many authorities including the OECD adopt this view. This operational perspective has been the foundation of most of the studies in the corporate governance field, because of its emphasis on the stockholders and the board of directors. Furthermore, the European Central Bank (2004) forms a relationship perspective in its 2004 annual report by adding the relationship among various related parties:

> The corporate governance structure specifies the distribution of rights and responsibilities among the different participants in the organization – such as the board, managers, shareholders, and other stakeholders – and lay down the rules and procedures for decision-making. (p. 219)

A broader view that considers other stakeholders to be involved in or affected by corporate governance, external auditors and regulators for example, is often cited as the stakeholder perspective of corporate governance. The prevailing school of research into corporate governance concerns the financial economics aspects of corporate governance. It links agency theory to board activities, and sees corporate governance as the mechanism through which fund suppliers ensure returns given the ownership concentration and the legal protection available to them. A final, and more abstract, perspective of corporate governance encompasses all the stakeholders involved: from contractual groups such as stockholders, directors, executives, employees, suppliers, clients, bankers, to the external local and international bodies that have contingent interests in a company's decisions. This societal view is showing its popularity in the increasing attention to stakeholder theory and the notion of corporate social responsibility.

These various perspectives are neither mutually exclusive nor comprehensive. However, this research adopts an operational point of view because it is the most relevant to the research topic. Specifically, the research attempts to examine whether board demographic heterogeneity is related to better corporate governance that is ultimately reflected in enhanced financial performance.

2.2 Relevant Theories

The multidimensional nature of corporate governance has led to consensus among the academic community that this subject is still in search of its paradigm. To date, no single theory has been able to comprehensively explain corporate governance issues, rather several interdisciplinary theories have collectively contributed to the development of corporate governance research. They range from financial economics, accountancy, management and organisational studies, to law, sociology, psychology, and even politics. Each of these theories views corporate governance from a different angle, some of which focus on the stockholders and the board as a whole; others concentrate on individual directors and the interactions among them; yet others touch on the interrelationships between financial markets, investors, and regulators; or emphasise the social, economic, and political environment in line with legislation, states, and international bodies. Because this research adopts an operational perspective of board behaviour, it is most relevant to base theoretical arguments on the theories that address directors' characters, as well as the communication among them. Thus five important theories rooted in financial economics, management and organisational study, social political field, and psychology are discussed to justify the development of the hypotheses.

Board diversity is believed to relate to firm performance through its board functions. Mallin (2010), and Monks, Minow, and Patterson (2004) identify the four critical functions of the board as: (1) monitoring and management control; (2) supplying information and expertise to executives; (3) ensuring that the corporation abides by the law; and (4) connecting the corporation with the external environment. If board composition influences the effectiveness of board functions, there is a good reason to believe that the diversity among board members will have an impact on business outcomes.

Agency Theory

Agency theory, as the basic puzzle piece central to all corporate governance matters, is long-standing and becoming more complex. Whenever the principals of an organisation – its owners, shareholders, or institutional members – have to delegate management of their interests to an agent – a board of directors, council, or holding company – they face the problem of ensuring that the agent will operate in their best interests. This challenging task is often mentioned to as the 'agency dilemma' in literature. The agency dilemma could simply exist between a principal and an agent as in the 18th century's trading ventures and

construction projects. Alternatively, it could be extant between a more diverse pool of principals such as listed companies' shareholders and their multiple agents – the directors. The recent emergence of financial intermediaries, such as mutual funds, investment trusts, and hedge funds, have made this principal-agent relation more complicated and difficult to trace. In certain transactions, for example when taking funds from investors, they act as financial mediators or agents, yet when they subsequently invest those funds they become principals.

The agency dilemma is addressed by agency theory that views corporate governance affairs as resolving potential conflicts between principals and agents due to their different goals and risk tolerance (Jensen & Meckling, 1976). The agents, who have access to asymmetric information, arguably seek to maximise their own wealth at the expense of the principals (Jensen & Meckling, 1976). Even though agency theory takes a less optimistic view of the agents' behaviour, it does not deny the financial benefit of improved monitoring and controlling functions in boards as a result of diversity. Managers may be better monitored by more diverse boards of directors (Carter et al., 2003).

Due to its clarity and the availability of data, agency theory has served as the theoretical basis for a large body of scholarly research into corporate governance that compares board-related quantitative variables with certain measures of firm performance. However, critics of the theory condemn its narrow scope, arguing that the dynamics of board behaviour should be extended beyond the binding relationship with their principals to include the effects of interaction among directors, group thinking, and the political and social connection of boards. An ambiguous underlying assumption about man's morality also triggers criticisms, contending that agents, being self-interested, cannot be trusted in the first place. Nonetheless, the theory provides a powerful perspective that further develops corporate governance theory.

Generally, the benefit of board heterogeneity is not explicitly supported by agency theory. However, the theory does remain a major financial and economic proposition that explains the link between board behaviour and corporate performance. When complemented by theories in other closely related disciplines, agency theory may offer more comprehensive insights into the performance effect of board heterogeneity. One of them is the resource dependence theory which is considered next.

Resource Dependence Theory

Rooted in organisation theory, resource dependence theory perceives a board as a strategically vital connector linking a corporation with the resources necessary to achieve its goals. Pfeffer

and Salancik (1978) posit that directors, by serving as liaisons between firms and their external environment, may provide benefits in many ways such as: connecting the business to its potential markets; providing access to different sources of information, expertise, and capital; and establishing connections with politically and socially influential networks. Based on the advantages provided by boards, Hillman, Cannella, and Paetzold (2000) categorised directors that supply resources to a company into four groups: community influencers, support specialists, business experts, and insiders. Hillman et al. (2000) show that directors in different categories may provide distinctive benefits to the company, which supports the business case for a diverse board.

In addition, the type of board diversity has various implications for board behaviour. For instance, Booth and Deli (1999) affirm that commercial bankers, through providing experience and access to the debt market, are positively associated with a company's total debt level when appointed to the board. A company that often deals with the government is more likely to recruit directors having political and legal background (Agrawal & Knoeber, 2001). Likewise, demographic diversity among directors may bring different beneficial resources to the firm (Cox, Lobel, & McLeod, 1991). Hillman et al. (2002), by studying a sample of Fortune 1000 directors, find a descending likelihood of having a business background in white males, white females, male African-Americans, and female African-Americans. Their finding suggests that the distinct backgrounds and human capital of female and ethnic minority directors help solve the firm's dependence on external environment in different ways. It is also reasonable to expect directors of different ages would address the firm's resource dependency differently. This is consistent with lifestyle theory which emphasises the backgrounds of directors who serve as important nodes to increase communication in social networks, which in turn may affect corporate governance and performance.

Although it focuses on characterising organisational behaviour rather than explaining their performance, resource dependence theory predictions set one of the most important theoretical frameworks to support a positive link between firm performance and board heterogeneity. In accordance with this theory, boards of directors can reduce their firm's dependence on external environments in four specific ways: (1) providing valuable information and knowledge; (2) leveraging communication with important constituents; (3) maintaining collaboration with influential organisations; and (4) building legitimacy.

Demographic diversity in the boardroom potentially enhances the information process because diverse directors will likely have unique information sets that are not available to homogeneous boards, resulting in an improved decision making process by the management. Similarly, the firm will gain more from its expertise as a resource from directors with different educational backgrounds. A diverse board also allows for better communication with other organisations, on which the firm depends thanks to the directors' broader social networks and professional memberships. As a result, the firm might be provided with support commitments from these important constituencies. In addition, allowing differences in gender and age in the boardroom widens the firm's access to more talent because it can essentially approach the entire pool of human capital. This is often highly rated not only by the top-level labour market but also by the financial market. Diverse directors may also present novel ideas to the boardroom, thus enabling the firm to better understand and serve a more general market that comprises a wider range of customers: female or male; young or old; and local or foreign. Finally, culturally diverse directors appear to be crucial as they bring non-traditional perspectives to boards in homogeneous societies. They also improve legitimacy for firms in populations that are experiencing greater ethnic diversity such as Australia, Canada, the UK, and the US.

Despite the prevalence of agency theory in corporate governance research in general, resource dependence theory shows a stronger endorsement regarding the positive relationship between firm performance and board diversity. A theoretical review by Hillman, Withers, and Collins (2009) supports this claim, finding that resource dependence theory provides more insightful empirical evidence for investigations into boards, although it is not employed as frequently as agency theory is.

Human Capital Theory

Human capital theory complements resource dependence theory by providing theoretical arguments for the link between corporate performance and board heterogeneity. Becker (1964) analysed the benefits of an individual's pool of education, experience, and skills to an organisation, and thus laid the foundations of this theory in human capital (Terjesen, Sealy, & Singh, 2009). In addition, female directors are found to have unique human capital compared to their male counterparts (Terjesen et al., 2009). Since differences in gender and education affect the human capital of directors, it is justifiable to expect that differences in nationality and age would also influence the human capital of corporate directors.

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Although human capital theory does suggest a relationship between performance and board diversity because of the unique and varied human capitals it brings to the boardroom, the future direction of this association is unclear. Hillman et al. (2002) claim that female directors perform dissimilar duties in the boardrooms compared to their male peers. The same phenomenon is also observed between African-American directors and white directors (Peterson, Philpot, & O'Shaughnessy, 2007). In a similar vein, there is a lower probability that women have background and experience in business, although their other human capital is similar to that of men for directorships (Terjesen et al., 2009). This evidence is consistent with contingency theory (Fiedler, 1967) which asserts that the usefulness of human capital may change over time and across different contexts.

Managerial and Class Hegemony

This viewpoint on corporate governance concentrates on the potential to be found in the superiority some corporations' directors may feel, and its effects on board behaviour and subsequently on its governance practices. This form of self-perception generally leads directors to behave in an elite manner, overshadowing both the corporation's internal and external links. New entrants to the boards of these companies are often selected in a way that maintains the board's image and its dominance.

The theory of managerial and class hegemony originated in socio-political disciplines, and has provided theoretical support for many case studies into corporate governance that use biographical inquiry. However, the theory's business case for board diversity is not obvious, although it does admit that board activities and outcomes can be affected by the directors' self-perceptions. Those directors who have access to crucial information and power over decision making may completely dominate the boardroom. If they truly own superior qualities then diversity might hamper efficiency. Conversely, if the directors are simply overestimating their true capacity, the board's decisions might be improved with diversity that provides access to a larger pool of talent and human capital.

Social Psychological Theory

Board decisions are, after all, the outputs of a group process; hence, their effectiveness is highly dependent on the interactions among the directors who generally differ in mindsets, personalities, strengths, and weaknesses. The relevance of individual influence on board decisions is recognised in social psychological theory. For example, the consensus of the

literature found by Westphal and Milton (2000) suggests that cohesion between groups is reduced in societies with demographic diversity and that there is an inverse relationship between social barriers and the likelihood that group decisions will be influenced by minority perspectives. Furthermore, social impact theory also suggests that group decisions are more likely to be driven by individuals with majority status (Westphal & Milton, 2000). Therefore, though demographic diversity among directors is often favoured from a broader stakeholders' perspective, the ability of diverse directors to induce decisions in a board is questionable.

It is argued that having minority individuals may improve the decision making process within a group due to the diversified views they have. However, contradictory empirical evidence has been found in some investigations. For instance, Williams and O'Reilly (1998) find that heterogeneity in boards may result in more disagreement, along with more innovation and creativity. Forbes and Milliken (1999) contend that an association between board performance and social psychological procedure is possibly significant. They further assert that demographic diversity in boards appears to cause numerous convoluted and conflicting consequences for the processes that influence board effectiveness. Concurring with this view, Campbell and Minguez-Vera (2008) argue that differences in gender among directors brings more perspectives and critiques that, in turn, stall decision making as well as reduce its effectiveness. With respect to the board's strategic role, Kim, Burns, and Prescott (2009) observe a positive association between heterogeneity in boards and the quality of strategic decisions implemented by the managers.

In short, the evidence and theory on group dynamics indicates that demographic diversity among board members could either positively or negatively affect firm performance. Theories in multiple disciplines solidly indicate the possibility of an association between corporate outcome and diverse directors. However, the nature of that link is ambiguous. While resource dependence and human capital theories incline to a positive relationship between board heterogeneity and corporate performance, the prediction of agency theory for a positive, negative or insignificant link is unclear. According to social psychological perspectives, the board's internal group dynamics may resist the influence of board diversity, suggesting that there may be no business case for board diversity. Diversity in directors may promote creativity and innovation, but the decision making process may be delayed due to the potential conflicts among the directors. Managerial and class hegemony perspective, on the other hand, predicts that the effect of board heterogeneity on business outcome could either be negative or positive depending on the true qualities of the directors.

Although none of the above theories confirm with certainty that board demographic diversity is positively related to firm performance, they all support the benefits of diversity to some extent. Agency theory does not offer as much theoretical backing as do resource dependence or human capital theory, but it does not deny its benefits. Social psychological and managerial and class hegemony perspectives are more prudent in supporting the benefits of board diversity by acknowledging certain conditions under which the benefits of diversity might be hampered. Therefore, all of theories remain relevant and are used to develop the hypotheses in the next chapter.

CHAPTER 3 -
RELEVANT LITERATURE AND HYPOTHESES DEVELOPMENT

3.1 Relevant Literature

Concern for corporate governance, generally, and interest in the business case behind diversity in boards, in particular, has recently surged not only within academics but also for practitioners around the world. Corporate governance institutions and codes of corporate governance have appeared in most countries. Regrettably, the majority of these developments are based mainly on the experience and advice of corporate directors in response to corporate failures, rather than on stringent academic research and a theoretical framework. Furthermore, empirical evidence on corporate governance issues has been unsuccessful in providing a convincing explanation of how the subject works. Research into the business case behind boards' heterogeneity is also limited, and the findings of these studies are often conflicting or inconclusive.

Board diversity has been described and measured in various ways. Forbes and Milliken (1999) distinguish board diversity as either demographic (i.e. observable) or cognitive (i.e. unobservable). Anderson, Reeb, Upadhyay, and Zhao (2011) split board diversity attributes into two separate groups: occupational diversity and social diversity. While occupational diversity includes attributes such as a director's directorship experience, professional experience, and education, social diversity consists of the diversity attributes such as a director's gender, ethnicity, and age (Anderson et al., 2011). This research only investigates the demographic forms of board diversity – gender, ethnicity, and age – as they are more observable and more relevant political views of board diversity, i.e. that boards of directors should represent the general population.

Most research examines gender as one attribute of a board's demographic diversity that is often considered to be a good proxy of the diverse perspectives individual directors bring to boards. Using a sample of companies in the US, Shrader, Blackburn, and Iles (1997) find an insignificant effect of the percentage of women on boards on business outcome, measured by profit margin, return on assets, and return on equity. However, when a sample of US companies were evaluated by Tobin's Q, gender heterogeneity was found to positively relate to financial performance (Carter et al., 2003). Farrell and Hersch, in their 2005 event study, find no marginal effects from the addition of women to boards on both market return to stockholders and return on assets in the US. In the Danish context, only one significant

negative relationship has been found between gender diversity and gross profit to sales ratios among multiple accounting performance measures tested (Smith, Smith, & Verner, 2006). In addition, for a different Danish sample, Rose (2007) finds no correlation between Tobin's Q and gender diversity in boards. Conversely, Campbell and Minguez-Vera (2008) observe a positive impact of gender heterogeneity on Tobin's Q in Spain. Adams and Ferreira (2009) examine a sample of US companies and contend that gender diversity in a board increases monitoring activities but results in a lower Tobin's Q.

A number of empirical studies look beyond gender diversity and find conflicting results, too. Carter et al. (2010) investigate the performance effect of ethnic and gender heterogeneity for a group of major US firms. They observe insignificant relationship between ethnic or gender heterogeneity and performance measures such as return on assets or Tobin's Q. Anderson et al. (2011) develop a heterogeneity composite of six features (gender, education, ethnicity, age, experience, and profession) and find that greater board diversity enhances financial performance. Ararat et al. (2015) generate an aggregate board heterogeneity value by adding the standardised Blau indices for four attributes (gender, nationality, age, and education) and find a negative correlation between this composite board heterogeneity index and returns on equity. When independence is added as an attribute of the composite board diversity index to form a total board diversity index, it is found to negatively affect the market to book ratio of Turkish companies (Ararat et al., 2015).

In summary, mixed results have been reported on the business case behind board heterogeneity. The possible reasons include variation in performance and diversity measurement and differences in the statistical approach. Another possibility is that the effects of a board's demographic diversity are different in various social contexts. Thus, further study is needed, especially those that contextualise any links between financial performance and board diversity in opposing social conditions.

3.2 Hypotheses Development

3.2.1 The Impact of Gender Diversity on Firm Performance

Of the dimensions of demographic diversity, differences in the gender of board members have captured the greatest attention from both academics and regulators. This is evidenced by the numerous regulations relating to female directors imposed by many countries mentioned in the previous chapter. From an academic research perspective, most of the studies that

specifically examine direct relationships between board diversity and firm performance focus on gender such as the work of Adams and Ferreira (2009); Campbell and Minguez-Vera (2008); Erhardt et al. (2003); Farrell and Hersch (2005); Rose (2007); and Smith et al. (2006).

In addition to the research that directly investigates the association between gender diversity in the boardroom and firm performance, there are other studies that are highly suggestive of a business case for female directorship. For instance, Robinson and Dechant (1997) conclude that more diverse boards, with gender diversity as a subset of board composition, enhance the competitive advantage of the firms. They also argue that those firms can better understand their market when replicating the heterogeneity of the marketplace in their boards (Robinson & Dechant, 1997). Additionally, female directors may improve strategic decision making by providing unique information to the managers (Fama & Jensen, 1983; Lückerath-Rovers, 2013).

However, gender diversity in boards also receives criticism. For example, Earley and Mosakowski (2000) find that people with the same gender probably have the same sentiments and as a result, a tendency to discuss more regularly. Likewise, there are more cooperation and fewer psychological conflicts when there are only men or only women on the board (Tajfel & Turner, 1979). If board diversity generates more standpoints and inquiries, decision-making may take more time and is possibly less effective than a board of directors that is more homogenous, particularly in circumstances where quick reactions to market turbulences are vital.

3.2.2 The Impact of Gender Diversity on Firm Performance across Vietnam and Australia

The principal benefit of gender diversity is that more diverse perspectives and talents are brought to board discussions. It is reasonable to expect that, in a hypothetical situation where men (or women) are completely dominant, the viewpoints introduced by a female (or a male) are most likely to be listened to and provide the greatest value. Whereas, in a hypothetical situation where men and women could take the role of one another, the viewpoints of either men or women might be relatively similar and hence, the benefit of gender diversity might be less pronounced. In other words, it is expected that gender diversity may have different effects across countries because there is a difference in gender equality. Specifically, the effects of gender diversity might be more obvious in countries of lower gender equality and vice versa.

Vietnam is well known for its persistent gender prejudice, manifest in many aspects of life. In the past, wives were required to obey their husbands and could not inherit wealth or businesses (Anh & Hung, 1997). While men had better access to education and career advancement, women chiefly stayed home doing housework (Santillan et al., 2004). The deep-rooted discrimination against girl's and women's rights has lessened, but gender equality is far from being reached. To date, giving birth to a boy is still favoured to giving birth to a girl, to the extent that some families either keep bearing children until they have a boy, or worse, are willing to abort female embryos (Haughton & Haughton, 1995). This social trend is, in part, illustrated by the high ratio of males to females in the younger age groups (see Table 1). The sex ratios for Australia, on the other hand, are relatively lower in the younger groups, showing a better example of natural selection.

Table 1: Gender diversity in two distinct gender equality settings: Vietnam and Australia

Sex ratio (male/female) (2015 est.)	Vietnam	Australia
At birth	1.11	1.06
0-14 years	1.11	1.05
15-24 years	1.07	1.05
25-54 years	1.01	1.04
55-64 years	0.85	0.98
65 years and over	0.63	0.86
Total population	1.00	1.01

Source: CIA World Factbook

The difference in gender equality of the two countries creates an ideal medium to test the business case behind gender diversity in boards. The test has passed in a number of societies of better gender equality, such as the US, Denmark, or Spain. However, empirical evidence on the effect of gender diversity at board level is scarce in societies of poorer gender equality. Therefore, it is of particular interest to international interest groups to consider gender diversity in societies with different levels of gender equality. Based on the theoretical benefits of board diversity predicted by the five relevant theories discussed in the previous chapter, and the positive link between board diversity and firm performance empirically found in a number of single contexts, it is expected that gender diversity will have a positive impact on firm performance. Furthermore, given the difference in gender equality between the two societies, it is expected that the gender heterogeneity of the board will have different effects in Vietnam and Australia. Specifically, because Vietnam has a lower level of gender equality than that of Australia, the effect of gender diversity on firm financial performance is expected to be more positive in Vietnam than in Australia.

Hypothesis 1 (H1): Ceteris paribus, gender diversity more positively affects the financial performance of firms in Vietnam than in Australia.

3.2.3 The Impact of Ethnic Diversity on Firm Performance

Diversity of ethnicity has been recently studied and is known to affect the quality of the decision-making process (Giscombe & Mattis, 2002). It is asserted that having more foreign members can increase a board's independence – one of the best corporate governance practices (Jensen & Meckling, 1976). According to Barney (1991), having foreign board membership helps companies to gain a competitive advantage over other boards with only domestic members. This could be explained because directors from overseas could add unique values and diverse expertise to companies (Lee & Farh, 2004). Moreover, if the foreigners come from advanced nations, such as the UK or the US, who have good education systems, they can act as a large labour force of highly qualified and competent employees. Considering knowledge-based theory and given the mixture of differing views, backgrounds, and competences; scholars argue that nationality diversity may promote creativity, partnership, and information exchange within the groups. As stated by Williams and O'Reilly (1998), the heterogeneity of backgrounds and cultures may bring varied perspectives to problem solving that would generate more alternative solutions for further assessing and determining the most suitable one.

Researchers find mixed results in their investigations of the relationship between diversity in nationality and firm performance. A study by Oxelheim and Randøy (2003) indicates a significant association between Tobin's Q and companies with American board members. Ruigrok, Peck, and Tacheva (2007) use net income as a proxy for financial performance, and conclude there is a positive relationship between heterogeneous nationalities and performance. Contributing to the literature, Millar, Eldomiaty, Choi, and Hilton (2005) also prove a positive linkage between the proportion of foreigners in a board and firm performance in the case of Korean listed companies. However, there are also some contrary arguments regarding the effectiveness of nationality diversity. Kilduff, Angelmar, and Mehra (2000) and Rose (2007) find insignificant association between market based performance and the presence of foreigners. A similar result is also suggested by Haniffa and Cooke (2002) and Marimuthu and Kolandaisamy (2009) for 100 non-financial Malaysian listed firms over six years.

3.2.4 The Impact of Ethnic Diversity on Firm Performance across Vietnam and Australia

It can be seen from Table 2 that Vietnam has a far less diverse ethnic background than Australia. As illustrated by their ethnic groups, languages, and net migration rate, the distribution of ethnic groups in Vietnam is far more skewed than that of Australia. The majority of Vietnamese are Kinh (Viet) (approximately 86%) who mainly reside in the plains. Other minorities, each accounting for less than 2% of the population, chiefly live in the mountains or other remote areas. The 2011 Australian census, however, notes the most commonly nominated ancestry as English (25.9%), followed by other major ethnic groups including Australian, Scottish, Irish, German, Italian, Indian, Chinese, Dutch, and Greek. Each of these ethnic groups accounts for a substantial proportion of Australian population, ranging from 1.2% to 25.4%. Following World War II and through to 2000, almost 5.9 million people settled in Australia as new immigrants, meaning that nearly two out of every seven Australians were born in another country (Fagoyinbo, 2013).

Because the Viet ethnicity is highly dominant, the vast majority of the people in Vietnam use Vietnamese as either their official or home language. By contrast, even though the official language in Australia is English, several other languages are also spoken such as Mandarin, Italian, Arabic, Greek, Cantonese, and Vietnamese. The difference in levels of ethnic diversity is further widened by the two countries' opposite trends in migration. While Vietnam experienced a slight net emigration of 0.3 migrants per 1000 persons, Australia ranked 23rd with a net immigration of 5.65 migrants per 1000 persons in 2015, making Australian society relatively more ethnically diverse.

Table 2: Ethnic diversity in two distinct ethnicity settings: Vietnam and Australia

	Vietnam	Australia
Ethnic groups	(1999 census)	(2011 est.)*
	Kinh (Viet) 85.7%; Tay 1.9%; Thai 1.8%; Muong 1.5%; Khmer 1.5%; Mong 1.2%; Nung 1.1%; Others 5.3%	English 25.9%; Australian 25.4%; Irish 7.5%; Scottish 6.4%; Italian 3.3%; German 3.2%; Chinese 3.1%; Indian 1.4%; Greek 1.4%; Dutch 1.2%; Other 15.8% (includes Australian aboriginal .5%); Unspecified 5.4%
Languages	(2011 est.)	(2011 est.)
	Vietnamese (official); English (increasingly favoured as a second language); Some French, Chinese, and Khmer, mountain area languages (Mon-Khmer and Malayo-Polynesian)	English 76.8%; Mandarin 1.6%; Italian 1.4%; Arabic 1.3%; Greek 1.2%; Cantonese 1.2%; Vietnamese 1.1%; Other 10.4%; Unspecified 5%
Net migration rate	(2015 est.)	(2015 est.)
Over 1,000 population	-0.3 migrant(s)	5.65 migrant(s)
World rank	127	23

* Ancestry was self-identified by respondents of whom over 33% informed two ancestries. Source: CIA World Factbook

The financial press in Vietnam tends to slightly overreact to announcements about the appointments and resignations of foreign directors and managers, while the media in Australia does not pay much attention to these releases. The listed companies in Vietnam are also required to disclose additional information about foreign shareholders, directors, and managers with regulators, including the stock exchange on which they are listed. Even though this study does not aim to directly link these vastly different ethnic profiles to a model explaining the potential relationship between directors' ethnic diversity and firm performance, the question of how such an association, if any, might change under different ethnicity settings remains important. Investigation into that issue will provide insights to regulators seeking to popularise a recommendation on the ethnic diversity of boards.

Because of the existence of a significantly positive association between ethnic diversity and a firm's financial performance in certain countries, which is consistent with the theoretical expectations by the five theories mentioned previously, a similar positive effect of ethnic diversity on firm performance is also expected from this research. Similar to the argument regarding gender diversity, ethnic diversity might be beneficial in the sense that directors with diverse social and cultural backgrounds may provide new ideas and unique experiences to the boardroom. However, the potential benefit of ethnic diversity is expected to be less pronounced in more ethnically diverse countries because people are relatively familiar with different cultures. By contrast, perspectives and problem-solving skills introduced by a foreigner are likely to be more valuable in a more ethnically homogeneous context. Given the sizeable gap between the ethnic profiles of Vietnam and Australia, it is expected that the

effect of ethnicity diversity in boards will be different between the two countries. Specifically, because Vietnamese society is more ethnicity-homogeneous than Australia, the effect of ethnicity diversity on firm performance is expected to be more positive in Vietnam than in Australia.

Hypothesis 2 (H2): Ceteris paribus, ethnic diversity more positively affects the financial performance of firms in Vietnam than in Australia.

3.2.5 The Impact of Age Diversity on Firm Performance

Age is said to go hand in hand with the level of experience and attitudes toward risk (Herrmann & Datta, 2005). Zajac and Westphal (1996) explain that young directors bring new and creative ideas to board discussions, and mature ones bring deep understanding about markets to evaluate and supplement those ideas for better decisions. In addition, young members are preferable as they may adapt to changes more flexibly and easily than mature members which is essential for making prompt and timely decisions. A study by Hambrick et al. (1996) states that young decision makers usually think out of the box and do not restrict themselves to rigid rules. Furthermore, Grimm and Smith (1991) indicate that young managers are likely to make risky decisions: a condition needed for higher corporate growth. By contrast, mature directors appear to be more averse to risk because, at that stage of life, they prefer stability and security in finance and their career (Barker & Mueller, 2002). As a result, older managers tend to follow others or propose secure strategies to maintain their position.

Indeed, there are a number of studies showing a positive relationship between age diversity and firm performance. Kilduff et al. (2000) find a positive linkage between marketing performance and age diversity. Ararat, Aksu, and Tansel Cetin (2010) conducted research in Turkey and indicate a positive correlation between age heterogeneity and return on equity, but not with Tobin's Q. However, other research fails to find further empirical proof for such relationships. Using Tobin's Q as the performance measure, Palmberg, Eklund, and Wiberg (2009) and Randøy, Thomsen, and Oxelheim (2006) fail to find a relationship between performance and the board's average age.

3.2.6 The Impact of Age Diversity on Firm Performance across Vietnam and Australia

There are two benefits greater directors' age diversity could bring to the board, namely better succession plans and broader range of perspectives. Given the time it requires to complete

formal education and earn some experience, directors on average reach to their mature age when they first hold a directorship. Hence, age diversity is often considered as including young directors in the boards. While having young directors potentially leads to a better inheritance of directorship and more novel ideas in the board, it is expected that the effect would be more pronounced if the board itself is more mature and vice versa.

Table 3: Board age diversity in two distinct population's average age profiles: Vietnam and Australia

	Vietnam	Australia
Age structure (2015 est.)		
0-14 years	24.1%	17.9%
15-24 years	17.22%	13.14%
25-54 years	45.05%	41.67%
55-64 years	7.81%	11.82%
65 years and over	5.82%	15.47%
Median age (2015 est.)		
Total	29.6 years	38.4 years
Female	30.7 years	39.2 years
Male	28.5 years	37.7 years
World rank	116	58

Source: CIA World Factbook

Table 3 shows that Vietnam has a relatively younger population. The percentage of population in younger groups (below 55 years) is higher for Vietnam than for Australia. The median Vietnamese age is also about 9 years younger than that of Australia. This implies that on average, Vietnam has a younger pool of human capital compared to Australia. Indeed, the mean age of directors is lower in the Vietnamese sample than in the Australian sample as can be seen from Table 4.

Table 4: Board mean age

Year	Vietnam	Australia
2010	47.30	58.89
2011	47.36	59.17
2012	47.44	59.55
2013	47.97	59.81
2014	48.81	59.99

Source: Author's calculation based on data on directors' age obtained from Bloomberg

The directors' mean age remains relatively stable over the five year research for both samples, suggesting that the director successions have occurred between directors of similar ages. Therefore, when a young director is added to a board, the decision process might improve thanks to the broader perspective he or she contributes. Although mixed results have been

found, a positive link between age diversity and firm performance appears possible since it has been found in a few contexts. This expectation is also justifiable as all five relevant theories incline to a positive link between the demographic diversity of the board and a firm's financial performance. Additionally, because the mean age is about 12 years higher in the Australian sample compared to the Vietnamese sample, the impact of young directors is expected to be less pronounced in Vietnam than in Australia. As a result, the following hypothesis is developed:

Hypothesis 3 (H3): Ceteris paribus, age diversity more positively affects the financial performance of firms in Australia than in Vietnam.

CHAPTER 4 – METHODOLOGY

4.1 Research Methodology

This research uses a quantitative approach to provide empirical evidence on the difference between the effects of board diversity on firm performance in Vietnam and Australia. Panel data analysis is used starting with descriptive statistics to describe and summarise the basic features of the datasets used in the research. According to Hsiao (2014), the benefit of the panel data method is a much larger data set with more variability and less collinearity among the variables than is the case of time-series or cross-section data (Gujarati, 2003).

Despite its substantial advantages, panel data poses several estimation problems inherent in cross-sectional data, such as heteroscedasticity, and time series data, such as autocorrelation or cross-correlation (Gujarati, 2003). Two estimation techniques that are commonly used to solve these issues are the fixed effects model (FEM) and the random effects model (REM). The intercept in FEM vary among cross-sections to allow for their own unique characteristics. FEM is favoured in situations where the crossection-specific intercept may correlate with any independent variables. REM is an alternative to FEM. REM assumes that the mean value of the intercept of individual units, which is randomly drawn from a substantially broader population, is constant. Individual intercepts are subsequently determined as deviations from this invariant value. REM is superior to FEM in that it consumes less degree of freedom. REM is favoured when there is no correlation between the random intercept of each cross-section and the regressors.

The specific procedure is as follows. First, Pearson's correlation coefficients are calculated to measure the preliminary strength of a linear relationship between the variables and detect any multicollinearity problems between the independent variables. Second, an unrestricted least squares specification that includes the impact of board diversity on firm performance is estimated, allowing for a test of the joint significance of the period and cross-sectional effects. Finally, in choosing between the fixed and random effects estimates of coefficients, the Hausman test is performed on a pre-estimated model with a random effects specification. Robust standard errors are estimated for all regressions.

4.2 Data Collection

As a starting point, two data sets were assembled that included the 100 largest firms in the VN Index of Vietnam and 200 firms in the S&P ASX200 of Australia for the five-year period between 2010 and 2014. Each of these two groups of companies jointly represents approximately 80% of the total market capitalisation in their corresponding stock market. Due to their vast differences in capital structure, asset composition, and operations, banks were excluded from the samples in both countries. Both groups remained fairly consistent throughout the research period; however, there were a few changes because of bankruptcy, mergers and acquisitions, and index modifications. Thus, to ensure validity of the analysis while avoiding sampling bias, only firms that appear on the lists as of 31March 2016 and remained for the entire period 2010-2014 are included in the sample. Consequently, the sample comprises 91 firms in Vietnam and 153 firms in Australia.

Data on the diversity of the boards in both Vietnam and Australia was primarily collected and calculated manually from the firms' annual reports. The data has been verified through reliable sources where available. For example, the gender and age of the directors of Australian companies are either determined by observing titles in the annual reports or obtained from the Boardroom section of the Connect4 database. The ethnicity of directors is not explicitly available in the annual reports. In this research, a director's ethnicity is identified by scrutinising his or her portrait photo and the name in the company annual report. The information is then checked with all possible sources such as LinkedIn, the company's website, and Google to ensure the ethnicity of the director was determined with certainty. Only those firms whose individual director's ethnicity is identified clearly are included in the sample. A similar verification process was specified by Carter et al. (2010). All of the financial data for both Australian and Vietnamese markets was obtained from Bloomberg. The value of Vietnamese firms' total assets was converted to Australian dollars using the average of the bid and ask rates of the Bank for Foreign Trade of Vietnam as at the end of the fiscal year.

4.3   Research Model

The regression model in this research is essentially adapted from Carter et al. (2010) with three modifications. First, while Carter et al. (2010) only focus on gender and ethnicity, diversity in this study is extended to include age diversity as well. Second, governance control variables such as the percentage ownership of the board, additional directorships, combined

CEO-chairmen, the number of independent directors, and the meeting attendance of directors are included but are insignificantly related to firm performance (Carter et al., 2010). Thus, they are excluded from this research model. Lastly, the model differs from that of Carter et al. (2010) in that it also uses controls for the age and the leverage of the firm, as these two variables were seen to have significant impact on firm performance in several prior studies in finance such as the works of Anderson and Reeb (2003); Dezsö and Ross (2012); Lang, Ofek, and Stulz (1996); and Wiklund and Shepherd (2003).

To test the proposed hypotheses, the research employs the following regression model:

$PERFORMANCE_{i,t} = \beta_0 + \beta_1 DIVERSITY_{i,t} + \beta_2 COUNTRY\ DUMMY_{i,t} + \beta_3 DIVERSITY_{i,t} \times COUNTRY\ DUMMY_{i,t} + \beta_4 CONTROL\ VARIABLES_{i,t} + \varepsilon_{i,t}$

where *PERFORMANCE* is the firm financial performance measured by either return on assets or Tobin's Q; *DIVERSITY* represents all three attributes of board diversity – gender, ethnicity, and age; *CONTROL VARIABLES* include the size of the firm, the leverage of the firm, the age of the firm, and the size of the board; and *COUNTRY DUMMY* is a binary variable distinguishing between Vietnamese and Australian firms.

In comparing the effect of board diversity between the two countries, this research adopts this model rather than estimating separate models without an interactive term and subsequently performing a Wald Test to avoid losing the statistical power of the result. Furthermore, when estimating separate models for two samples of different sizes, it is possible that a variable may be significant in one sample but not in the other, yet the variation in impact across both samples is insignificant.

The primary objective of the model is to contrast the difference of the impact of board diversity on firm financial performance between the Vietnamese and Australian companies. Thus, the regression coefficient of concern is β_3 and it is expected to be significant, meaning that if there is a difference in the effect of diversity between the Vietnamese and Australian companies, the interaction variable should be significant. Specifically, the expected effects are summarised as follows:

Given that *COUNTRY DUMMY* takes a value of 1 when the firm is Vietnamese and 0 otherwise): when *DIVERSITY* is gender or ethnic diversity (testing H1 and H2), β_3 is significant and positive; when *DIVERSITY* is age diversity (testing H3), β_3 is significant and negative.

4.4 The Variables

4.4.1 Dependent Variable

The dependent variable of the research regression model is firm financial performance proxied by Tobin's Q and return on assets (ROA). These two proxies are widely used in corporate governance research but each of them measures a separate facet of the firm's financial performance. While ROA measures the accounting profitability, Tobin's Q captures market-based performance of the firm. Tobin's Q in this research is derived from Chung and Pruitt (1994) approximation which is calculated as follows:

$$\text{Tobin's Q} = \frac{\text{Market value of Issued Securities} + \text{Book value of Debt}}{\text{Book value of Total Assets}}$$

If Tobin's Q is less than one, the remaining book value of the total assets is greater than the market value of the stocks. If the ratio is higher than one, the wealth of stockholders and creditors is larger than the amortised historical cost of the firm's total assets. Wernerfelt and Montgomery (1988) argue that Tobin's Q incorporates the expected future cash flows and investment opportunities of the firm. Thus, it is a useful measure of performance from a valuation perspective. However, Bhagat and Bolton (2008) suggest that market performance should not be associated with the governance properties because it is contingent on investor expectation. They subsequently rely on accounting-based measures – one of which is ROA determined by dividing net income by the average book value of total assets. ROA has proven its usefulness in performance analysis and been used in many investigations including Bhagat and Bolton (2008) and Carter et al. (2010). Furthermore, Yermack (1996) and Carter et al. (2003) find that ROA and Tobin's Q are statistically correlated. Consequently, this research uses both Tobin's Q and ROA to measure each firm's financial performance.

4.4.2 Independent Variables

This research uses the Blau (1977) index, rather than using the percentage of board members in each category to measure the diversity of the board in terms of gender and ethnicity. According to Stirling (1998), the Blau index reflects the 'variety' of diversity, which means the variation in categorical data. It is a measure widely used in various fields such as science, ecology, economics, and linguistics (Campbell & Minguez-Vera, 2008). The Blau (1977) measure is implemented as follows:

$$Blau\ Index = 1 - \sum_{i=1}^{N} P_i^2$$

where *N* is the number of categories and *P* is the proportion of board members in each category. A perfectly non-diverse group would have a diversity index score of zero. A perfectly diverse group would have a diversity index score of one (assuming infinite categories with equal representation in each category). The maximum value of the diversity index increases in tandem with the increase in the number of categories. The following table shows the number of categories in each attribute and the respective maximum values of the Blau index.

Table 5: Diversity attributes and maximum Blau index

Diversity attributes	Number of categories	Maximum Blau index
Gender	2	0.5
Ethnicity	2	0.5

The rationale for the number of categories for each attribute of diversity follows. Gender diversity has two categories: male and female. The categories for ethnicity diversity slightly differ between the Vietnamese and Australian samples, although the overarching principle of categorising directors into majority and minority groups is the same for both. In the Vietnamese sample, the two categories are Vietnamese and non-Vietnamese. In the Australian sample, the two categories are Anglo-Australian and non-Anglo-Australian because the majority of directors in Australian companies are Anglo-Australian. This classification is similar to the US case in Carter et al. (2010). Following Anderson et al. (2011), age diversity is measured by the standard deviation of directors' age across the whole board.

4.4.3 Control Variables

The size of a firm is conventionally controlled in many studies explaining firm financial performance. For example, Banz (1981) finds that firm size is related to market returns. In addition, the size of total assets is found to be associated with Tobin's Q (Prevost, Rao, & Hossain, 2002; Yermack, 1996). As a result, the influence of firm size on financial performance is controlled by adding the value of the natural logarithm of total assets to the regression models.

The age of the firm, measured as natural logarithm of the number of years since its inception, is also included as a control variable because it may influence firm performance. The firm's

age, which suggests the firm's experience, is found to be related to stock returns (Baker & Wurgler, 2006; Zhang, 2006). The findings from Storey, Keasey, Wynarczyk, and Watson (1987) suggest that a firm's age has a significant effect on the performance of small firms but little impact on the performance of large firms in the manufacturing sector of the UK.

The third control variable in this research is the financial leverage ratio, which is calculated as total assets divided by total equity. Research into the relationship between leverage and firm performance supports such an association but yields mixed results. Ahn and Shrestha (2013) find a positive link between leverage and firm performance via classified board indicators using databases of the Investor Responsibility Research Centre (IRRC) from 1998 to 2006. Conversely, Thomsen and Pedersen (2000) claim that leverage is negatively related to firm performance measured as ROA.

Lastly, board size, calculated by the number of board members, is found to inversely correlate with firm performance by Eisenberg, Sundgren, and Wells (1998) in Finland. In Switzerland, a negative relationship between the size of board and Tobin's Q is also indicated by Loderer and Peyer (2002), while Beiner, Drobetz, Schmid, and Zimmermann (2004) find it insignificant. Furthermore, Yermack (1996) finds that Tobin's Q and the size of a board are negatively associated in the US market. However, prior studies also observed a significant positive link between the number of directors and firm financial performance because larger boards provide quality information due to greater knowledge from more directors (Jackling & Johl, 2009; Van den Berghe & Levrau, 2004). This empirical evidence on a positive association between firm performance and board size originated from resource dependency theory, while a negative relationship is argued from an agency theory perspective (Yermack, 1996). Both empirical evidence and theory support the inclusion of board size as a control variable in explaining a firm's financial performance.

Table 6: Summary of the variables

Firm Financial Performance (Dependent Variables)	
Tobin's Q	Sum of the book value of debt and the market value of stock divided by the book value of total assets
Return on Assets	Trailing 12-month net income divided by the average of the beginning balance and ending balance of the book value of total assets
Diversity (Independent Variables of Concern)	
Age Diversity	Standard deviation of directors' age across the whole board
Gender Diversity	Blau index of gender diversity
Ethnic Diversity	Blau index of ethnicity diversity
Control variables	
Leverage	Ratio of total assets to total equity
Firm Age	Natural logarithm of the age of the firm since its inception
Board Size	Total number of directors on the board
Firm Size	Natural logarithm of the year-end book value of total assets

CHAPTER 5 – RESULTS AND DISCUSSION

5.1 Descriptive Statistics

Table 7 shows the key descriptive statistics for the Vietnam sample. On average, the Vietnamese companies financially succeeded over the research period with a mean Tobin's Q ratio of 1.18 and a mean return on assets of 9.44%. However, financial performance varied significantly across the sample. The minimum Tobin's Q is 0.37 while the maximum is 5.15. Similarly, the minimum and maximum values of the return on assets over the five-year period are substantially different, measuring between -21.78% and 40.78%. The boards in the sample are more diverse in gender than ethnicity, illustrated by the Blau index mean values of 0.21 for gender diversity and 0.08 for ethnic diversity. This is possibly because ethnicity diversity is more costly than gender diversity for ethnically homogeneous countries like Vietnam. The average board in the sample has approximately 6 directors. For some firm-years, their ages are relatively similar with a minimum standard deviation in directors' age across the entire board of 1.7. For others, their ages are significantly varied with a maximum standard deviation of 21.62. Overall, the values of key variables in the sample exhibit high variation during the investigated period.

Table 7: Descriptive Statistics of the Vietnamese sample

	Mean	Maximum	Minimum	Std. Dev.	Observations
Tobin's Q	1.18	5.15	0.37	0.52	440
ROA	9.44	40.78	-21.78	8.62	439
Gender Diversity	0.21	0.50	0.00	0.19	455
Ethnic Diversity	0.08	0.50	0.00	0.15	455
Age Diversity	8.02	21.62	1.70	2.98	350
Board Size	6.13	11.00	3.00	1.55	455
Leverage	2.23	7.16	1.04	1.01	439
Firm Age	2.93	3.97	0.69	0.67	455
Firm Size	4.89	8.54	2.42	1.17	453

The average Australian company in the sample experienced higher market performance with a mean Tobin's Q of 1.88, but lower accounting income (a mean return on assets of 6.69%) compared to its Vietnamese counterpart. However, variation in performance is also higher for the Australian sample. While the Australian companies' Tobin's Q varies from 0.45 to 11.89, the minimum and maximum values of their return on assets are -30.83% and 59.74% respectively. Some of the boards achieve a perfect balance between the number of male and

female directors, as well as nearly perfect balance between the number of Anglo and non-Anglo directors, shown by the maximum Blau values of 0.5 and 0.49 for gender and ethnicity diversity respectively. Nonetheless, the mean Blau value of ethnicity diversity is only 0.04, meaning that Anglo directors are still dominant in Australian boards with about seven members on average. Compared to the Vietnamese samples, Australian firms are larger with a mean natural logarithm of total assets of 7.71. However, the comparability is still feasible as the minimum natural logarithm of total assets is relatively similar between the two samples, being 2.42 for Vietnam and 2.96 for Australia.

Table 8: Descriptive Statistics of the Australian sample

	Mean	Maximum	Minimum	Std. Dev.	Observations
Tobin's Q	1.88	11.89	0.45	1.55	759
ROA	6.69	59.74	-30.83	9.49	762
Gender Diversity	0.21	0.50	0.00	0.16	765
Ethnic Diversity	0.04	0.49	0.00	0.10	765
Age Diversity	7.43	14.84	1.79	2.41	362
Board Size	7.48	15.00	3.00	1.98	765
Leverage	2.24	10.69	1.01	1.20	760
Firm Age	3.38	5.18	0.00	1.01	765
Firm Size	7.71	11.93	2.96	1.56	763

5.2 Correlation Matrix

The next step determines whether multicollinearity exists by establishing a correlation matrix between the variables. The correlation coefficients are calculated using a balanced sample method. As shown in Tables 9 and 10, the correlation coefficients are not too high for either of the samples, meaning that the predictors are not highly correlated, and the regression model is not subject to the multicollinearity phenomenon.

Table 9: Correlation matrix of the Vietnamese sample

	Tobin's Q	ROA	Gender Diversity	Ethnic Diversity	Age Diversity	Board Size	Leverage	Firm Age	Firm Size
Tobin's Q	1								
ROA	0.59	1							
Gender Diversity	0.23	0.16	1						
Ethnic Diversity	0.23	0.01	0.10	1					
Age Diversity	0.02	-0.01	0.25	-0.06	1				
Board Size	0.17	-0.02	-0.01	0.23	-0.10	1			
Leverage	-0.19	-0.47	-0.15	-0.01	0.00	0.16	1		
Firm Age	0.13	0.17	-0.06	-0.10	0.07	0.09	-0.14	1	
Firm Size	0.09	-0.27	0.02	0.41	-0.09	0.22	0.44	-0.27	1

Table 10: Correlation matrix of the Australian sample

	Tobin's Q	ROA	Gender Diversity	Ethnic Diversity	Age Diversity	Board Size	Leverage	Firm Age	Firm Size
Tobin's Q	1								
ROA	0.73	1							
Gender Diversity	-0.11	-0.08	1						
Ethnic Diversity	0.04	-0.12	-0.08	1					
Age Diversity	0.01	0.06	-0.16	-0.14	1				
Board Size	-0.21	-0.20	0.35	0.01	-0.10	1			
Leverage	-0.25	-0.27	0.28	0.11	-0.12	0.23	1		
Firm Age	-0.10	-0.13	0.29	0.01	-0.29	0.45	0.30	1	
Firm Size	-0.40	-0.35	0.43	0.05	-0.22	0.76	0.46	0.48	1

5.3 Regression Analysis

Table 11 contains the regression outputs of the relationship between gender diversity and firm financial performance across Vietnam and Australia. The coefficient of the interactive term between gender diversity and *COUNTRY DUMMY* in Model 1 is positive and highly significant, suggesting that the effect of gender diversity on Tobin's Q is an increment of 0.79 if the firm is Vietnamese, with all else being equal. This appears to be consistent with hypothesis 1. However, when firm performance is measured by return on assets as in Model 2, the interactive term becomes insignificant. The coefficients for the control variables are basically consistent with the prior literature. Leverage and firm size are both negatively related to a firm's financial performance. Firm age is also negatively correlated with financial performance measured by Tobin's Q. Yet, when performance is measured by return on assets, there is a positive association between the two variables. Board size is only positively associated with Tobin's Q at a 10% significance level.

Table 11: Regression estimates of the relationship between gender diversity and performance

Independent Variables	Dependent Variable: Tobin's Q Vietnam vs Australia (Model 1)		Dependent Variable: ROA Vietnam vs Australia (Model 2)	
	Coef.	t	Coef.	t
Gender Diversity	-0.42***	-5.01	-0.70	-0.53
Board Size	0.01*	1.77	-0.24	-1.01
Leverage	-0.03**	-2.57	-1.28***	-2.83
Firm Age	-0.04**	-2.52	0.54***	6.17
Firm Size	-0.30***	-12.68	-1.26***	-9.52
Intercept	4.38***	17.85	18.85***	9.25
Country Dummy	-1.73***	-14.51	-1.52	-1.64
Gender Diversity *Country Dummy	0.79***	5.97	4.76	1.25
Firm Effect	None		Random	
Period Effect	Fixed		None	
Observations	1190		1202	
Adjusted R-squared	0.18		0.04	
F-statistic	25.03		8.24	

*Notes: * denotes p < .10, ** denotes p < .05, and *** denotes p < .01. See the appendices for the tests for selecting the optimal regression method.*

Table 12 shows the estimated regression coefficients of the link between ethnic diversity and firm performance. The coefficients of the interactive term between ethnic diversity and *COUNTRY DUMMY* in Models 3 and 4 are both positive and highly statistically significant, indicating that the effect of ethnic diversity on Tobin's Q and return on assets are increments of 1.35 and 8.87% respectively when the firm is Vietnamese, all else being equal. This means there is no evidence against hypothesis 2. The significance and sign of the estimates of the control variables are relatively similar to those found in the gender diversity equation in Table 11. The coefficients of leverage and firm size are both significant and negatively related to firm financial performance. While firm age is negatively correlated with Tobin's Q, it is positively associated with the firm's return on assets. There is no significant relationship between the number of directors on the board and the financial performance of firms.

Table 12: Regression estimates of the relationship between ethnic diversity and firm performance

| Independent Variables | Dependent Variable: Tobin's Q | | Dependent Variable: ROA | |
	Vietnam vs Australia (Model 3)		Vietnam vs Australia (Model 4)	
	Coef.	t	Coef.	t
Ethnic Diversity	0.34	0.70	-7.91**	-2.38
Board Size	0.01	0.96	-0.21	-0.84
Leverage	-0.03***	-2.80	-1.25***	-2.60
Firm Age	-0.04**	-2.07	0.48***	5.79
Firm Size	-0.33***	-13.75	-1.29***	-10.76
Intercept	4.53***	16.87	19.17***	8.44
Country Dummy	-1.77***	-14.53	-1.03	-0.84
Ethnic Diversity *Country Dummy	1.35***	2.89	8.87**	2.48
Firm Effect	None		Random	
Period Effect	Fixed		None	
Observations	1190		1202	
Adjusted R-squared	0.19		0.04	
F-statistic	26.57		8.49	

*Notes: * denotes p < .10, ** denotes p < .05, and *** denotes p < .01. See the appendices for the tests for selecting the optimal regression method.*

Table 13 reports the coefficients for the relationship between age diversity and financial performance. Model 5 shows that the coefficient for the interactive term between age diversity and *COUNTRY DUMMY* is insignificant, completely rejecting hypothesis 3 when firm financial performance is measured by Tobin's Q. However, when return on assets is used as a proxy for firm performance, as in Model 6, there is a negative relationship between the interactive term and return on assets, although only at a 10% significance level. Thus, hypothesis 3 is not rejected at a 10% significance level. The estimated parameters of the control variables exhibit a slight deviation from those found in the gender diversity and ethnic diversity regressions. Similar to the results in Tables 11 and 12, leverage and firm size are both significantly negatively related to firm financial performance, whether it is measured by Tobin's Q or return on assets. Firm age is still positively correlated with return on assets. Yet, its effect on Tobin's Q is now statistically insignificant. Furthermore, board size is found to be negatively associated with Tobin's Q and positively linked to return on assets. These variations possibly arise from the change in the most efficient model used to regress firm performance on age diversity and other independent variables. When the same model specification as the gender diversity and ethnic diversity regressions is applied, the result for the control variables becomes consistent while the interactive term remains the same.

However, since the research strictly follows the estimation procedure described in econometrics literature, only the outcome based on the most efficient model is reported here.

Table 13: Regression estimates of the relationship between age diversity and firm performance

Independent Variables	Dependent Variable: Tobin's Q		Dependent Variable: ROA	
	Vietnam vs Australia (Model 5)		Vietnam vs Australia (Model 6)	
	Coef.	t	Coef.	t
Age Diversity	0.05***	2.99	0.22***	3.04
Board Size	-0.02**	-2.08	0.32**	2.45
Leverage	-0.07***	-3.99	-2.34***	-22.50
Firm Age	0.15	1.29	0.89***	4.91
Firm Size	-0.18***	-3.03	-1.55***	-8.04
Intercept	2.87***	3.09	17.30***	11.04
Country Dummy	-1.18***	-4.01	0.32	0.30
Age Diversity *Country Dummy	-0.02	-0.97	-0.19*	-1.74
Firm Effect	Random		None	
Period Effect	None		Fixed	
Observations	698		707	
Adjusted R-squared	0.05		0.16	
F-statistic	6.77		13.02	

*Notes: * denotes p < .10, ** denotes p < .05, and *** denotes p < .01. See the appendices for the tests for selecting the optimal regression method.*

5.4 Sensitivity Analysis

In addition to the Blau index for the gender and ethnicity attributes of board diversity, the research also includes the count data to account for the potential tokenism problem. Some firms might have hired only one female or minority director to appear diversified under political or social pressure, rather than for the real benefit of diversity. Moreover, Carter et al. (2010), in favour of count data over percentages argue that "two diverse directors out of 14 total directors on the board may have more of an effect on firm performance than one diverse director out of six total directors" (p. 403). However, to check the robustness of the result, this research also tests the proportion of female directors and the proportion of minority directors as substitutes for the corresponding Blau or count values. The results reveal that the significance and direction of the primary variables of interest are consistent with the various measurements of gender diversity and ethnic diversity. The only variation is that the link between gender diversity and return on assets becomes significant when gender diversity is

measured by the number of female directors on the board. More details on the sensitivity regression are reported in Tables 14 and 15.

In summary, the comparison of the effects of board diversity on firm financial performance across Vietnam and Australia reveals that the outcomes could vary significantly depending on which attribute of board diversity is the main effect and on how firm performance is measured. When the Tobin's Q is used to capture firm financial performance, hypotheses 1 and 2 are highly supported (at 1% significance level) but hypothesis 3 is not. This means that gender diversity and ethnic diversity more positively impact Tobin's Q for Vietnamese firms than for their Australian counterparts, while age diversity does not. In terms of the accounting performance, hypothesis 1 is rejected even at 10% significance level while hypotheses 2 and 3 are not rejected at 5% and 10% significance levels respectively. This result suggests that ethnic diversity more positively impacts return on assets in Vietnam than in Australia, whereas age diversity affects more positively on return on assets in Australia than in Vietnam. In addition, the result also implies that there is no difference in the effect of gender diversity on return on assets across the two samples.

Table 14: Regression estimates of the relationship between gender diversity and firm performance in sensitivity analysis

Independent Variables	Gender diversity: Number of female directors		Gender diversity: Proportion of female directors		Gender diversity: Number of female directors		Gender diversity: Proportion of female directors	
	Dependent Variable: Tobin's Q (Model 7)		Dependent Variable: Tobin's Q (Model 8)		Dependent Variable: ROA (Model 9)		Dependent Variable: ROA (Model 10)	
	Coef.	t	Coef.	t	Coef.	t	Coef.	t
Gender Diversity	-0.05**	-2.31	-0.63***	-4.01	-0.20	-0.51	-0.71	-0.26
Board Size	0.01	1.55	0.01	1.58	-0.28	-1.22	-0.24	-1.03
Leverage	-0.03***	-2.76	-0.03**	-2.46	-1.29***	-2.88	-1.27***	-2.85
Firm Age	-0.04**	-2.50	-0.04**	-2.48	0.56***	5.45	0.53***	5.12
Firm Size	-0.30***	-11.86	-0.30***	-12.28	-1.22***	-10.08	-1.26***	-10.47
Intercept	4.38***	17.01	4.39***	17.76	18.87***	9.43	18.79***	9.29
Country Dummy	-1.72***	-14.39	-1.74***	-14.38	-1.59	-1.52	-1.72*	-1.78
Gender Diversity *Country Dummy	0.16***	7.52	1.22***	6.23	1.17*	1.76	7.94	1.36
Firm Effect	None		None		Random		Random	
Period Effect	Fixed		Fixed		None		None	
Observations	1190		1190		1202		1202	
Adjusted R-squared	0.18		0.18		0.04		0.04	
F-statistic	25.16		25.19		8.40		8.48	

Notes: * denotes $p < .10$, ** denotes $p < .05$, and *** denotes $p < .01$. See the appendices for the tests for selecting the optimal regression method.

Table 15: Regression estimates of the relationship between ethnic diversity and firm performance in sensitivity analysis

Independent Variables	Ethnic diversity: Number of minority directors		Ethnic diversity: Proportion of minority directors		Ethnic diversity: Number of minority directors		Ethnic diversity: Proportion of minority directors	
	Dependent Variable: Tobin's Q (Model 11)		Dependent Variable: Tobin's Q (Model 12)		Dependent Variable: ROA (Model 13)		Dependent Variable: ROA (Model 14)	
	Coef.	t	Coef.	t	Coef.	t	Coef.	t
Ethnic Diversity	-0.01	-0.42	0.21	0.69	-1.13*	-1.87	-8.08*	-1.74
Board Size	0.00	0.62	0.01	1.22	-0.19	-0.74	-0.22	-0.93
Leverage	-0.03***	-3.07	-0.03***	-2.85	-1.25***	-2.58	-1.25**	-2.57
Firm Age	-0.04**	-2.48	-0.04**	-2.50	0.51***	6.16	0.51***	6.27
Firm Size	-0.32***	-13.31	-0.32***	-13.23	-1.26***	-9.91	-1.28***	-10.40
Intercept	4.53***	16.81	4.52***	16.81	18.62***	7.93	18.99***	8.39
Country Dummy	-1.74***	-14.27	-1.74***	-14.14	-0.72	-0.59	-0.90	-0.77
Ethnic Diversity *Country Dummy	0.29***	11.54	1.78***	5.57	1.03**	2.31	9.16*	1.87
Firm Effect	None		None		Random		Random	
Period Effect	Fixed		Fixed		None		None	
Observations	1190		1190		1202		1202	
Adjusted R-squared	0.19		0.19		0.04		0.04	
F-statistic	26.00		26.10		8.44		8.36	

Notes: * denotes $p < .10$, ** denotes $p < .05$, and *** denotes $p < .01$. See the appendices for the tests for selecting the optimal regression method.

CHAPTER 6 – CONCLUSIONS

6.1 Conclusions

The purpose of this study is to compare the effects of gender, ethnic, and age diversity on firm financial performance across two opposite social contexts – Vietnam and Australia. The research is conducted to provide more insight into the theory of corporate governance and help explain inconsistencies in the empirical evidence of prior studies in the area. The research posits that variation in the effects of the demographic diversity of boards across countries might arise from the difference in their population's demographic profiles. The results have confirmed this proposition for gender and ethnic diversity in boards when performance is measured by Tobin's Q, and for ethnic and age diversity when performance is measured by return on assets. Understanding the difference of the effects of these attributes on firm performance is important for the policy makers and international groups that are interested in a convergence of both corporate governance codes and recommendations around the world.

The tested hypotheses are developed from five theories in multi-disciplines: agency theory, resource dependence theory, social psychological theory, managerial and class hegemony, and human capital theory. These theories are relevant in that they provide theoretical support for a relationship between gender, ethnic, and age diversity and a firm's financial performance, rather than offering predictions of how the effects of board demographic diversity vary across countries. The data used to test differences in the effects of board diversity on firm performance across two countries are collected from 91 non-bank firms in Vietnam and 153 non-bank firms in Australia over a five-year period from 2010 to 2014. The financial performance of each firm is measured by either Tobin's Q or return on assets. Due to the availability of the data, the number of observations varies depending on the diversity attribute. For both gender and ethnicity models, the samples consist of unbalanced panels of 1190 firm-years (when performance is measured by Tobin's Q) and 1202 firm-years (when performance is measured by return on assets). The corresponding numbers for the age diversity sample are 698 and 707. The regression output indicates that the gender and ethnic heterogeneity in boards more positively affect Tobin's Q in Vietnam than they do in Australia, while age diversity does not. Additionally, ethnic diversity more positively influences return on assets in Vietnam than in Australia, whereas age diversity more positively affects return on assets in

Australia than in Vietnam. The results also suggest that there is no difference in the impact of gender diversity on return on assets across the two nations.

These research outcomes have three significant implications for the literature. First, gender diversity in boards more positively affects a firm's financial performance (Tobin's Q) in countries with lower gender equality. Second, ethnic diversity in boards more positively affects a firm's financial performance (both Tobin's Q and return on assets) in countries that are more ethnicity-homogeneous. Finally, age diversity in boards more positively affects a firm's financial performance (return on assets) in countries with older pool of human capital.

Although the research is not structured to confirm or reject any of the relevant theories discussed earlier, it is interesting to find that some of the results not only appear consistent with but also offer an opportunity to expand human capital theory and resource dependence theory. These theories provide the strongest justification for the business case of a board's demographic diversity. Empirical evidence from this research suggests that the two theories could be stated in a proportionate form. Specifically, it is possible that the increased benefits from board diversity are proportionate to the level of dominance of a certain group in the society. However, it is important to clarify which diversity attributes and benefits are of concern, and more important to realise that further evidence is needed.

The findings of this research also provide an important practical implication for any global recommendations for the demographic diversity of boards. The effects of some attributes of board diversity on financial performance vary between countries with different demographic backgrounds, so the decision to adopt certain recommendations made by other countries should be evaluated in light of demographic compatibility. Furthermore, the difference in these effects also depends on whether market-based or accounting-based performance is the focus. Therefore, a general global recommendation that board diversity is effective in every country is not a realistic possibility.

6.2 Research Limitations

The choice of Vietnam and Australia as the two opposite social contexts to test the effects of board demographic diversity might be subject to bias, since there may be other countries that better represent the extremes of gender equality, ethnic diversity, and age distribution within the population. This research also ignores the differences in institutional settings between

Vietnam and Australia with respect to corporate governance, which in turn, may cast some influence on the relationship between board diversity and firm performance.

While this research only focuses on gender, ethnicity, and age as important dimensions of board diversity, other attributes of the directors such as qualifications, experience, or religion might be equally important and should be examined. Another potentially important factor, that is not accounted for in the research, is the level to which any class merges into community. The effect of a heterogeneous class might be negligible if the class is highly integrated (Carter et al., 2010). However, social integration is hard to quantify.

Lastly, the sampling and data collection methods used may reduce the validity of the research results. The samples were only drawn from the top firms on the Vietnam and Australia stock exchanges in terms of market capitalisation. As a result, the conclusions reached may not be applicable to all companies in all countries. Data on corporate governance are not readily available in Vietnam and Australia, even for the more visible listed firms in the sample. Consequently, manual collection with judgments was required which exposes the results to judgment errors. This is also the reason for missing data and the small sample size.

6.3 Suggestions for Future Research

It is important to note that an empirical investigation of a direct relationship between board diversity and a firm's financial performance is beyond the scope of this research. When research is conducted in separate contexts, and then conducted across them, the optimal analysis methods that should be applied in individual cases might be significantly different from one another. This might hamper comparison of the results. The focus of this study only compares the effects of demographic diversity in boards across two socially opposite contexts. In fact, Wang and Clift (2009) investigated gender diversity and ethnic diversity (but not age diversity) and found no business case for those two attributes in the Australian context. The empirical evidence on the effects of all of the three board demographic diversity attributes is yet to be found in Vietnam and is left to future study.

In a different vein, since prior studies have found mixed results on the relationship between board diversity and financial performance and there have been attempts to converge corporate governance codes globally, multinational research of this relationship would be greatly beneficial. However, to provide a more robust test of a business case for board diversity, future studies could select two societies that better represent the opposite extremes of gender

equality, ethnic diversity, and age distribution. In addition, to address the limited nature of data on corporate governance, future research could adopt a case study approach. This method would be particularly appropriate in markets where prior empirical statistical studies have found no significant relationship between board diversity and firm performance, because corporate governance might be in equilibrium such that no measureable effect is observed (Adams, Hermalin, & Weisbach, 2010).

Future studies could also extend beyond the conventional relationships between the diversity of boards and the performance of firms to broaden the knowledge of diversity. Investigations into the business case behind board diversity often yield mixed results, suggesting that there might be no direct link between board diversity and financial performance. Thus, future research could examine the mediating effect of corporate governance on the performance of directors, rather than directly investigate the relationship between board diversity and the firm's performance. Alternatively, future studies could investigate non-financial performance in firms to provide a more complete picture of the effect of board diversity.

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Appendix

Because the firm fixed effect is not viable due to near singular matrix problem and the two-way random effect (or mixed fixed and random effects) model is not allowed with unbalanced panel data, the choice of the most efficient model is between the one with period fixed effect and the one with firm random effect.

Table A.1: Test for period fixed effect (likelihood ratio) in Model 1

Test	Statistic	Degrees of freedom	Probability
F	3.031314	(4,1178)	0.0168
Chi-square	12.186164	4	0.0160

Table A.2: Hausman test for cross-section random effect in Model 1

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	37.041021	6	0.0000

Table A.3: Test for period fixed effect (likelihood ratio) in Model 2

Test	Statistic	Degrees of freedom	Probability
F	2.237206	(4,1190)	0.0631
Chi-square	9.005246	4	0.0610

Table A.4: Hausman test for cross-section random effect in Model 2

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	7.917936	6	0.2442

Table A.5: Test for period fixed effect (likelihood ratio) in Model 3

Test	Statistic	Degrees of freedom	Probability
F	2.428339	(4,1178)	0.0461
Chi-square	9.772071	4	0.0444

Table A.6: Hausman test for cross-section random effect in Model 3

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	38.239430	6	0.0000

Table A.7: Test for period fixed effect (likelihood ratio) in Model 4

Test	Statistic	Degrees of freedom	Probability
F	2.092927	(4,1190)	0.0796
Chi-square	8.426524	4	0.0771

Table A.8: Hausman test for cross-section random effect in Model 4

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	7.360561	6	0.2888

Table A.9: Test for period fixed effect (likelihood ratio) in Model 5

Test	Statistic	Degrees of freedom	Probability
F	2.400257	(4,686)	0.0488
Chi-square	9.701246	4	0.0458

Table A.10: Hausman test for cross-section random effect in Model 5

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	10.326195	6	0.1116

Table A.11: Test for period fixed effect (likelihood ratio) in Model 6

Test	Statistic	Degrees of freedom	Probability
F	2.465089	(4,695)	0.0438
Chi-square	9.960119	4	0.0411

Table A.12: Hausman test for cross-section random effect in Model 6

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	22.270123	6	0.0011

Table A.13: Test for period fixed effect (likelihood ratio) in Model 7

Test	Statistic	Degrees of freedom	Probability
F	2.945703	(4,1178)	0.0194
Chi-square	11.843705	4	0.0186

Table A.14: Hausman test for cross-section random effect in Model 7

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	36.745843	6	0.0000

Table A.15: Test for period fixed effect (likelihood ratio) in Model 8

Test	Statistic	Degrees of freedom	Probability
F	3.084978	(4,1178)	0.0153
Chi-square	12.400777	4	0.0146

Table A.16: Hausman test for cross-section random effect in Model 8

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	37.370132	6	0.0000

Table A.17: Test for period fixed effect (likelihood ratio) in Model 9

Test	Statistic	Degrees of freedom	Probability
F	2.200643	(4,1190)	0.0669
Chi-square	8.858614	4	0.0647

Table A.18: Hausman test for cross-section random effect in Model 9

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	7.861069	6	0.2485

Table A.19: Test for period fixed effect (likelihood ratio) in Model 10

Test	Statistic	Degrees of freedom	Probability
F	2.138312	(4,1190)	0.0740
Chi-square	8.608597	4	0.0717

Table A.20: Hausman test for cross-section random effect in Model 10

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	7.404717	6	0.2850

Table A.21: Test for period fixed effect (likelihood ratio) in Model 11

Test	Statistic	Degrees of freedom	Probability
F	2.463964	(4,1178)	0.0435
Chi-square	9.914835	4	0.0419

Table A.22: Hausman test for cross-section random effect in Model 11

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	37.378112	6	0.0000

Table A.23: Test for period fixed effect (likelihood ratio) in Model 12

Test	Statistic	Degrees of freedom	Probability
F	2.504888	(4,1178)	0.0407
Chi-square	10.078817	4	0.0391

Table A.24: Hausman test for cross-section random effect in Model 12

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	37.639021	6	0.0000

Table A.25: Test for period fixed effect (likelihood ratio) in Model 13

Test	Statistic	Degrees of freedom	Probability
F	2.075888	(4,1190)	0.0818
Chi-square	8.358159	4	0.0793

Table A.26: Hausman test for cross-section random effect in Model 13

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	8.017376	6	0.2368

Table A.27: Test for period fixed effect (likelihood ratio) in Model 14

Test	Statistic	Degrees of freedom	Probability
F	2.096259	(4,1190)	0.0792
Chi-square	8.439892	4	0.0767

Table A.28: Hausman test for cross-section random effect in Model 14

Test	χ^2 Statistic	χ^2 Degrees of freedom	Probability
Random effect	8.190454	6	0.2245