Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

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Abstract

Investments in business acquisitions have become a key part of corporate investment strategy. Business acquisitions are a vibrant investment decision which forms part of a firm's growth strategy, that influences and determines firm value. Efficiency theory suggests that companies are motivated to invest in business acquisitions to realise synergy gains. Although there are previous studies undertaken to examine determinants of domestic business acquisitions in countries like the U.S and the U.K, determinants applicable in these countries may not have equal influence on business acquisition decisions of companies that are listed on the Australian Securities Exchange. Identification of factors influencing the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange provides a theroritical guidance on estimating the most possible purchase price consideration for acquirers and on formulating new policies to develop a more competitive capital market for regulators.

The study by Erel *et al*. (2012) shows Australia is having the largest number of domestic mergers and acquisitions recording 4,875 during the period from 1990 to 2007 compared to all mergers and acquisitions recorded in all other countries. The importance of identifying factors influencing business acquisition decisions motivates this study to examine the factors influencing the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange. This study examines the factors influencing the business acquisition decision of companies that are listed on the Australian Securities Exchange, from acquirer's characteristics and macro-economic point of view. This study also investigates whether the determinants related to acquirer's characteristics and the macro-economic environment are impacted by the industry classification and the time. Specifically, the study examines how the determinants, such as acquirer's characteristics (profitability, leverage and liquidity), and macro-economic characteristics (interest rate, exchange rate and stock market index) affect the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange.

The Ordinary Least Squares (OLS) multiple regression assessment of the 160 completed business acquisitions representing 79.13 per cent of population in terms of total deal value of completed business acquisitions during 1997 to 2012 shows evidence that the acquirer's profitability before considering the impact of the industry classification and the time, is statistically significantly

positively associated with the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange. This finding lends support to previous empirical studies that greater profitability of an acquirer motivates them investing on business acquisitions. The study finds that the acquirer's leverage before considering the impact of the industry classification and the time, is statistically positively associated with the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange. This finding contributes to previous empirical studies that greater leverage of an acquirer motivates them investing on business acquisitions. The study finds that the acquirer's liquidity before considering the impact of the industry classification and the time, is statistically significantly negatively associated with their business acquisition decision (deal value) of acquirers that are listed on the Australian Securities Exchange. This finding is not consistent with the findings from prior studies.

When acquirer's business acquisition decision is influenced by their industry classification, this study support that the acquirer's profitability and leverage have a statistically significant positive impact on the business acquisition decision (the deal value) of acquirers listed on the Australian Securities Exchange whilst the acquirer's liquidity has a statistically negative impact on their business acquisition decision.

When acquirer's business acquisition decision is influenced by the time in terms of when the business acquisition occurs, this study support that the acquirer's profitability and leverage have a statistically significant positive impact on the business acquisition decision (the deal value) of acquirers listed on the Australian Securities Exchange whilst the acquirer's liquidity has a statistically negative impact on their business acquisition decision.

This study finds that the macro-economic variables of interest rate and exchange rate are statistically significantly positively associated with the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange. This finding supports to previous empirical studies that higher interest rate and higher exchange rate motivate investments in business acquisitions. The study supports that the macro-economic variable, stock market index is statistically negatively associated with the business acquisition decision (the deal value) of

acquirers that are listed on the Australian Securities Exchange. This finding supports to previous empirical studies that the lower stock market index motivates investments in business acquisitions.

When acquirer's business acquisition decision is influenced by their industry classification, this study support that the macro-economic variables of interest rate and exchange rate have a statistically significant positive impact on the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange whilst the macro-economic variable stock market index is statistically negatively associated with the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange.

When acquirer's business acquisition decision is influenced by the time in terms of when the business acquisition occurs, the study supports that the macro-economic variable stock market index has a statistically positive impact on the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange.

Student Declaration

"I, Dona Alahakoon, declare that the PhD thesis entitled **'Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia'** is no more than 100,000 words in length including quotes and exclusive of tables, charts, footnotes and references. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work".

Dona Alahakoon Date: 20 July 2021

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List of Publications and Awards

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Table of Contents

Abstract ii
Student Declaration v
Acknowledgements vi
List of Publications and Awards vii
List of Tables xii
List of Charts xiv
Abbreviations xv
Chapter 1: Introduction 1
1.1 Introduction 1
1.2 Background and Motivation 3
1.3 Objectives and Research Questions 16
1.4 Overview of the Sample, Data, and Research Methodology 19
1.5 Summary of Findings 22
1.6 Significance and Practical Contribution 27
1.7 Thesis Structure 30
Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia 33
2.1 Introduction 33
2.2 Theoretical Motives of Investments in Business Acquisitions 34
2.2.1 Efficiency Theory 35
2.2.2 Monopoly Theory 38
2.2.3 Valuation Theory 40
2.2.4 Empire Building Theory 41
2.2.5 Process Theory 43
2.2.6 Tobin's Q Theory 44
2.2.7 Information Asymmetry (Signaling) Theory 46
2.2.8 Industry Life Cycle Theory 48
2.2.9 Free Cash Flow Theory 50

2.2.10 Corporate Diversification Theory 50
2.2.11 Pure Diversification Theory 51
2.2.12 Agency Cost Theory 52
2.2.13 Corporate Tax Theory 53
2.2.14 Product Market Interaction Theory 55
2.2.15 Economic Disturbance Theory 58
2.2.16 Market for Corporate Control Theory 60
2.2.17 Pecking Order Theory 64
2.3 Studies on Determinants of Business Acquisitions 65
2.4 Regulatory Framework in relation to Investments in Business Acquisitions in Australia 89
2.5 Factors Influencing Business Acquisition Decision – Acquirer Related 96
2.5.1 Profitability 97
2.5.2 Leverage 98
2.5.3 Liquidity 99
2.5.4 Industry Classification 101
2.5.5 Time 101
2.6 Factors Influencing Business Acquisition Decision – Macro-economic Related 102
2.6.1 Interest Rate 102
2.6.2 Exchange Rate 104
2.6.3 Stock Market Index 106
2.6.4 Industry Classification 108
2.6.5 Time 109
2.7 Chapter Summary 110
Chapter 3: Sample, Data, and Research Methodology 113
3.1 Introduction 113
3.2 Sample and Data 114
3.2.1 Sample 114
3.2.2 Sampling Procedure 117
3.3 Methodology for Analysing Factors Influencing the Business Acquisition Decision 129
3.3.1 Empirical Models 131
3.3.2 Estimation Methods 135

3.3.3 Variable Measurement 136
3.3.3.1 Dependent Variable 136
3.3.3.2 Test Variables 136
3.4 Chapter Summary 139
Chapter 4: An Empirical Analysis of the Factors Influencing the Business Acquisition Decision - Acquirer Related Characteristics 141
4.1 Introduction 141
4.2 Descriptive Statistics 142
4.3 Analysis of the Factors Influencing the Business Acquisition Decision – Acquirer Related Characteristics 149
4.3.1 Correlation Analysis 149
4.3.2 Multiple Regression Results and Analysis 151
4.4 Robustness Tests 170
4.4.1 The Generalised Method of Moments (GMM) analyses for the model M1 (Equation 3.1) 170
4.4.2 The Generalised Method of Moments (GMM) analyses for the model M2 (Equation 3.2) 173
4.4.3 The Generalised Method of Moments (GMM) analyses for the model M3 (Equation 3.3) 175
4.5 Chapter Summary 177
Chapter 5: An Empirical Analysis of the Factors Influencing Business Acquisition Decision - Macro-economic Related Characteristics 182
5.1 Introduction 182
5.2 Descriptive Statistics 183
5.3 Analysis of the Factors Influencing the Business Acquisition Decision – Macro-economic Related Characteristics 185
5.3.1 Correlation Analysis 185
5.3.2 Multiple Regression Results and Analysis 187
5.4 Robustness Tests 203
5.4.1 The Generalised Method of Moments (GMM) analyses for the model M4 (Equation 3.4) 204
5.4.2 The Generalised Method of Moments (GMM) analyses for the model M5 (Equation 3.5) 206

5.4.3 The Generalised Method of Moments (GMM) analyses for the model M6 (Equation 3.6) 208
5.5 Chapter Summary 210
Chapter 6: Summary and Conclusion 215
6.1 Introduction 215
6.2 Review of the Research Questions, Hypotheses, and Main Findings 215
6.2.1 Research Question 1 217
6.2.2 Research Question 2 220
6.2.3 Research Question 3 221
6.2.4 Research Question 4 222
6.2.5 Research Question 5 225
6.2.6 Research Question 6 227
6.3 Academic Contribution 229
6.4 Implications 230
6.5 Limitations 231
6.6 Future Research 232
6.7 Conclusion 233
References 240

List of Tables

Table 2.1 Summary of research questions and related hypotheses 110

Table 3.1: A summary of total number and the total deal value of successful business acquisitions recorded from 1997 to 2012 by acquirers that are listed on the Australian Securities Exchange 119

Table 3.2 Summary of the study sample 122

Table 3.3 Summary of the study sample categorised into time dummy variables 123

Table 3.4 Summary of the study sample by industry as per the Australian Securities Exchange industry classification 125

Table 3.5 Summary of the study sample by consolidated industry classification 126

Table 4.1: Descriptive statistics of independent and dependent variables – Acquirer characteristics 143

Table 4.2: Outliers - dependent variable 144

Table 4.3: Pearson correlation coefficients between independent variables 149

Table 4.4: Multiple regression results with dependent variable: DV, for the model M1 (Equation 3.1) during 1997-2012 152

Table 4.5: Multiple regression results with dependent variable: DV, for the model M2 (Equation 3.2) during 1997-2012 159

Table 4.6: Multiple regression results with dependent variable: DV, for the model M3 (Equation 3.3) during 1997-2012 165

Table 4.7: Generalised Method of Moments test results with dependent variable: DV for the model M1 (Equation 3.1) during 1997-2012 171

Table 4.8: Generalised Method of Moments test results with dependent variable: DV for the model M2 (Equation 3.2) during 1997-2012 174

Table 4.9: Generalised Method of Moments test results with dependent variable: DV for the model M3 (Equation 3.3) during 1997-2012 176

Table 4.10: Multiple regression results with dependent variable: DV, for the models M1-M3 (Equation 3.1 to 3.3) during 1997-2012 180

Table 5.1: Descriptive statistics of independent and dependent variables – Macro-economic related characteristics 184

Table 5.2: Pearson correlation coefficients between independent variables 186

Table 5.3: Multiple regression results with dependent variable: DV, for the model M4 (Equation 3.4) during 1997-2012 188

Table 5.4: Multiple regression results with dependent variable: DV, for the model M5 (Equation 3.5) during 1997-2012 193

Table 5.5: Multiple regression results with dependent variable: DV, for the model M6 (Equation 3.6) during 1997-2012 199

Table 5.6: Generalised Method of Moments test results with dependent variable: DV for the model M4 (Equation 3.4) during 1997-2012 204

Table 5.7: Generalised Method of Moments test results with dependent variable: DV for the model M5 (Equation 3.5) during 1997-2012 207

Table 5.8: Generalised Method of Moments test results with dependent variable: DV for the model M6 (Equation 3.6) during 1997-2012 209

Table 5.9: Multiple regression results with dependent variable: DV, for the models M4-M6 (Equation 3.4 to 3.6) during 1997-2012 213

Table 6.1: Summary of Research Questions 1 219

Table 6.2: Summary of Research Questions 2 221

Table 6.3: Summary of Research Questions 3 222

Table 6.4: Summary of Research Questions 4 225

Table 6.5: Summary of Research Questions 5 227

Table 6.6: Summary of Research Questions 6 228

List of Charts

Chart 3.1: Deal values of top ten completed business acquisitions for each year from 1997 to 2012 of the sample of the study 120

Chart 4.1: Histogram - dependent variable 145

Chart 4.2: P-P Plot of regression of standardised residual - dependent variable 146

Chart 4.3: Scatterplot of standardised residuals against standardised predicted values - dependent variable 147

Abbreviations

ANOVA	Analysis of Variance
DV	Deal Value
EPS	Earnings Per Share
ER	Exchange Rate
FCFTE	Free Cash Flow to Total Equity
IR	Interest Rate
LTDTA	Long Term Debt to Total Assets
SMI	Stock Market Index
U.K.	United Kingdom
U.S.A.	United States of America
U.S.	United States

Chapter 1: Introduction

1.1 Introduction

The study investigates the factors influencing the business acquisition decision (the deal value) of companies that are listed on the Australian Securities Exchange, from acquirer's characteristics and macro-economic point of view. Business acquisitions have become an important investment decision as part of firms' growth stagey. Globalisation of commerce has created an immense market for business acquisitions for firms to establish their competitive position, enhance business growth and shareholders' wealth. The study of world market for mergers and acquistions by Erel *et al*. (2012) identifies that Australia is having the largest number of domestic mergers and acquisitions recording 4,875 during the period from 1990 to 2007 compared to all mergers and acquisitions recorded in all other countries. Identification of the factors influencing the business acquisition decision of listed companies in Australia will be useful for Australian firms to estimate the most possible purchase price consideration. Awareness of the factors influencing business acquisition decision of acquirers that are listed on the Australian Securities Exchange will be useful for policy makers to develop a more competitive capital market and to realise Australian firms their competitive position in the global market by examining the relationship between the business acquisition decision that represents the deal value, and the acquirer's characteristics (profitability, liquidity and leverage), the macro-economic characteristics (interest rate, exchange rate and stock market index), acquirer's industry classification and the time when the business acquisition takes place. Policy makers can consider impact of these on major macro-economic policies such as fiscal policy, monetary policy including lending reforms, supply-side and trade policies to achieve or maintain full employment, a high rate of economic growth, and to stabilise prices and wages.

Chapter 1: Introduction

There is no one study investigated the determinants of business acquisitions of companies that are listed on the Australian Securities Exchange. This study makes a unique contribution to the finance knowledge by investigating the factors influencing business acquisition decision (the deal value) of companies that are listed on the Australian Securities Exchange, from the acquirer[1]'s characteristics and the macro-economic point of view. In addition to investigating the impact of the acquirer's characteristics and the macro-economic environment, on the business acquisition decision of companies that are listed on the Australian Securities Exchange, the study also examines whether the behavior of identified determinants changes with the acquirer's industry classification and over time, making this study unique.

Empirical research on the factors influencing business acquisition decisions provides evidence of various factors affecting business acquisition decisions. These include factors such as profitability, leverage, liquidity, interest rate, exchange rate, stock market price, and stock market capitalisation, that have been studied in the developed and the developing countries, and regions such as the Unites States (U.S.), the United Kingdom (U.K.), India and the European region.

The rest of this chapter is structured as follows. Section 1.2 presents the background and the motivation of the study, followed by its objectives and research questions in Section 1.3. An overview of the sample, data and research methodology of the study is given in Section 1.4. Summary of study findings is presented in Section 1.5, followed by the significance of this study

[1] Corporate acquisitions are usually agreed upon by two parties and they are an acquirer and a target. In a corporate acquisition, the acquirer is the company purchasing another company (target) for a specified price (the deal value) (Gaughan, 2017).

and its practical contribution to the literature in Section 1.6. Section 1.7 concludes the chapter by describing the overall structure of the thesis and outlining the remaining chapters.

1.2 Background and Motivation

This section presents the background and motivation of the study. The section starts looking at financial decisions of firms and then explains the investment decisions including different growth opportunities and strategies firms have. The section demonstrates that investments in business acquisitions are an effective external growth strategy of firms. Next, the section presents different methods of business acquisitions including friendly and hostile business acquisitions, significant business acquisition activity recorded historically as waves (Yaghoubi, *et al.,* 2016), contribution of business acquisitions towards increased foreign direct investments globally and impact of business acquisitions in establishing a competitive market position. Business acquisitions have become a critical force in establishing a competitive market position for Australian firms, yet motives behind investing in business acquisitions are rarely investigated and not known.

Financial decisions of firms are two types. They are investment decisions, and financing decisions. Investment decisions focus on growth of a firm with the aim of maximising shareholders[2] wealth. A firm can grow in two ways. First, a firm can grow by increasing investments in existing projects or by investing in new projects, and this is identified as investments in internal or organic growth opportunities. Second, a firm can grow by acquiring other firms, and this is identified as investments in external growth opportunities. Business acquisitions are identified as an external

[2] Shareholder wealth maximisation is maximising the present value of the expected future returns in terms of periodic dividend payments or proceeds from sale of the common stock to the shareholders of a firm (Weston, 1996).

growth opportunity that is available for a firm and it is widely used by firms as a competitive investment strategy.

A firm can achieve internal growth by expanding its existing business activities with fresh investments to increase production capacity for existing products, by entering new markets or by launching a new product. However, there are some challenges a firm faces when it decides to go for internal growth option either by increasing investments in existing projects or investing in new projects. Some of these challenges are: limited size or capacity of the existing market, existing product may not have growth potential, and the firm may not have the resources in terms of the expertise and funds to enter a new market or to launch a new product. Due to these challenges internal growth option can become a slow path that takes a lot of time and huge business effort to generate positive returns. As an alternative to the organic or the internal growth option, external growth by way of mergers, acquisitions or takeovers can be considered as a more sustained, faster and a viable effort to establish a competitive position in the market aiming at yielding sustained positive returns (Gaughan, 2017).

Business activity is becoming increasingly global and challenging as companies continually struggle to maintain quality, cost base, infrastructure, and market share. In a period of rising commodity prices during 1990 to 2016, many Australian domestic manufacturers had to compete with the increase supply of imports associated with the low-cost goods manufactured overseas because of the appreciation of the Australian dollar. This competition between the high cost of Australian manufactured goods and the low cost of overseas manufactured goods led to impair the viability of many domestic manufacturers and caused the closure of some domestic manufacturing

production (Langcake, 2016). The cost base of some sectors, particularly in the research and development intensive manufacturing sectors, like Chemicals and Pharmaceuticals, Plant and Machinery, Electrical and Optical Equipment, Transport Equipment, and the like are so high that these firms must serve worldwide markets to cover fixed costs, however economies of scale in production facilitate to worldwide operations. As manufacturing and trade have gone global, this has forced service industries to globalise as their clients are operating worldwide. This has led to the need for increased firm size and this has occurred through business acquisitions globally. The trend toward globalisation is more pronounced with the development of worldwide distribution channels as the driving force that provides maximum revenue for those firms.

Managers often claims that diversification helps stabilise a firm's earnings and to minimise corporate's risk exposure. Diversification is often given as a reason for business acquisitions aiming at stabilising corporate earnings and risk exposure. Stabilisation of a firm's earnings is certainly beneficial to its employees, suppliers, and customers in addition to its shareholders.

Business acquisitions have become a key part of corporate investment strategy. When an acquirer invests in a business acquisition, there can be some long-term and wider motives in addition to maximising shareholders' wealth, as the vehicle of business acquisition can enable companies to expand beyond their geographical region with a greater chance of entering new markets or diversifying its products lines. By undertaking business acquisitions firms can aim at expanding their growth momentum by way of entering to new markets, expanding their products' distribution networks, establishing their brand names in a wider market and a customer base, exposure to new technologies, capabilities, and know-how. Firms are motivated to undertake business acquisitions

when their domestic markets are saturated for the purpose of leveraging their low-cost structure to gain superior positioning of their products in established markets or to gain control over increasing cost sensitive maturing industries by way of industry concentration (Gaughan, 2017).

Different types of corporate restructuring such as mergers, acquisitions, takeovers, and buyouts form part of corporate investment strategy. Business acquisitions take different forms but are most commonly in the form of a merger or an acquisition (Gaughan, 2017). In a merger two or more firms are combined to form one firm aiming to have a single corporate structure and culture. During the merger process, only one firm exists, and the rest of the firms are dissolved and legally cease to exist. The dissolved firms are merged under the name of the surviving firm. There are different forms of mergers and they are: horizontal, vertical, concentric, and conglomerate. In a horizontal merger, two or more firms that are in the same business or in the same industry are merged to form one corporate entity. In a vertical merger, two or more firms that are at different stages of production or the supply chain are merged to form one corporate entity. Mostly, a vertical merger is between firms that operate in a buyer-seller relationship. Vertical merger can be a forward integration or a backward integration. Forward integration happens when a firm consolidates with its customer. Backward integration happens when a firm consolidates with its supplier. A concentric merger happens when two firms that operate in different but closest industries consolidate to share a common expertise. A conglomerate merger happens when two firms that operate entirely in different lines of business consolidate. A conglomerate merger happens for the purpose of a product or market expansion. A product expansion merger happens when a firm producing one product acquires another firm that produces a different product but both firms use similar kind of manufacturing or marketing tools. A market extension merger

happens when the acquiring and the target firms manufacture the same product, but they sell their products in different markets (Gaughan, 2017).

A business acquisition takes place when one firm acquires (that is the acquirer, buyer, or the bidder) a controlling ownership interest in another firm (the target) by buying all or a majority of the shares of the target, its legal subsidiary, or its selected assets, such as a manufacturing facility. In a business acquisition, bidder firm acquires a target firm and on completion of the acquisition process the target firm disappears (Asquith, 1983; Mastracchio and Zunitch, 2002). In the business acquisition process the corporate structure and culture of the bidder firm or acquirer remains the same.

There are other forms of corporate restructuring relating to business acquisitions. They are spin-offs, divestitures, equity carve-outs and buy-outs (Gaughan, 2017). In spin-off a parent firm forms a subsidiary firm as a separate new legal entity and distributes the subsidiary's shares on a pro-rata basis to the existing shareholders of the parent firm as a share dividend. In spin-off only the shares of the new subsidiary are transferred to the existing shareholders of the parent firm whilst in a divestiture all or substantial portion of a firm's operating assets or the business are sold to an outside party in exchange for cash or securities. A variation of the divestiture is called an equity-carve-out. An equity care-out happens when a firm sells a portion of its business to the public by issuing an equity offer. A leveraged buy-out (LBO) happens when a firm purchases another firm substantially by funding through debt and when the business acquisition transaction is initiated by acquirer's management, it is identified as a management buy-out (MBO) (Gaughan, 2017).

As investing in business acquisition comprises significant amount of capital outlay, due diligence, and regulations, and it involves a comprehensive procedure to complete its transaction. When an acquiring firm has identified a possible target, it must establish a suitable purchase price, or range of prices, that it is willing to pay to buy the target. After establishing a suitable purchase price by an acquirer, its management must decide how to approach the target firm's managers. If the acquiring firm has reasons to believe that the target firm's management approves the business acquisition, then the acquirer makes a business acquisition proposal and attempts to work out suitable contractual terms for the deal. If an agreement can be reached between acquirer's and target's management, the two management groups issue statements to their shareholders recommending that they approve the business acquisition proposal. If the shareholders of both the acquirer and the target approve the recommendation, the acquiring firm simply buys the target firm's shares from its shareholders, paying for them either, with acquiring firm's shares (in which case the target firm's shareholders become shareholders of the acquiring firm), or with cash. This type of a business acquisition transaction is identified as a friendly business acquisition. In a friendly business acquisition, the target firm's management supports the business acquisition and recommends approval for the acquisition from its shareholders (Gaughan, 2017).

In addition to a friendly business acquisition transaction, it can be a hostile business acquisition transaction too. If the business acquisition is against the interests of the target's management, it is identified as a hostile takeover. In a hostile business acquisition, the target firm's management resists the business acquisition offer when they believe that the price offered for the shares is too low, or perhaps they simply want to secure their jobs and perks. In this situation, the target firm's management is said to be hostile rather than friendly. In a hostile business acquisition, the acquirer

must make a direct appeal to the target firm's shareholders. In a hostile business acquisition, the acquiring firm generally makes a tender offer to the target's shareholders requesting them to submit or tender their shares in exchange for a specified price. As the tender offer is a direct appeal to the target's shareholders, approval by the target's management is not required. Hostile business acquisition transactions have increased greatly in recent years and as a result, the frequency of use of tender offers has gone up.

Economic analysts view that business acquisitions occur in waves (Shleife and Vishny, 2003; Yaghoubi, *et al.,* 2016). Historically the U.S. market has dominated business acquisitions recording the greatest wave of business acquisitions in the 1990s. The U.S. firms have created a monumental wave of business acquisitions by announcing 43,811 deals with a value of $4.4 trillion from 1995 through 2000. Business acquisitions have reached at its peak in the year 2000 at global level in terms of 37,204 number of deals and $3.5 trillion in value as per Thomson Reuters and Dealogic. This peak has been recorded because of the rapid economic growth and the internet revolution in the late 1990s. However, there was a sharp decline in the global business acquisitions in the year 2008 due to the worldwide financial crisis. Business acquisitions have become an international dimension due to increased economic integration and removal of barriers to trade at global level. With the increased market competition, firms are not only competing in domestic markets, but also in global markets to maintain their market share and competitive edge. This has led to record an increased growth in domestic business acquisitions and cross border business acquisitions. Certainly, business acquisitions have become an attractive mean of corporate expansion and a competitive innovative strategic tool for corporate growth.

Business acquisition activities tend to cluster over time, by industry or by country (Andrade *et al*., 2001) and occur as a reaction to a changed environment like technology. There have been several waves of business acquisitions that have occurred in the past. Each of these waves have been characterised by distinct features. There have been six intense waves of business acquisitions (or merger waves) in the U.S. market from 1897 to 2007 (Kleinert and Klodt, 2002).

The first business acquisition wave (or the merger wave) was recorded from 1897 to 1904 where business acquisitions happened across similar industries. The driving forces behind these business acquisitions during this period were industrial revolution, antitrust law enforcement, technological changes, and westward integration[3]. This business acquisition wave led to the creation of a monopolistic[4] market situation. Business acquisition activities during this period were mainly horizontal mergers and, these have resulted in the creation of oligopolies[5], increased industry concentration and market power (Kleinert and Klodt, 2002).

The second business acquisition wave was recorded from 1920 to 1929 where business acquisitions were dominated by vertical and conglomerate mergers. New sectoral clusters emerged in railroads and utilities industries, where the existence of networks opened new opportunities for exploiting economies of scale (Kleinert and Klodt, 2002).

[3] Westward integration happened when the United States expanded its territory westward at a dramatic pace, leading to conflict, national growth, and ongoing cultural exchange within a transformed continent in the nineteenth century, (Kleinert and Klodt, 2002).
[4] A monopolistic market situation happens when a single firm controls a large market share in the industry (Gaughan, 2017).
[5] Oligopolistic market situation happens when a small number of large firms dominate the industry (Gaughan, 2017).

The third business acquisition wave was recorded from 1965 to 1975 and the majority of these were identified as friendly business acquisitions of small firms by large firms. Increased taxes forced small firms to sell out to large firms by way of friendly business acquisitions. This business acquisition wave led to the creation of conglomerates. Diversification, rising stock market, economies of scale by industrial mass production in consumer goods industries, corporate stability and the sustained economic boom were identified as the driving forces behind these conglomerate mergers (Kleinert and Klodt, 2002).

The fourth business acquisition wave was recorded from 1984 to 1988. These business acquisitions were characterised by takeover of large public corporations and divestiture of unprofitable firms. During this period, hostile takeovers, strategic megamergers, and leveraged buyouts also happened. Business acquisitions that occurred during this period were from technology intensive industries. The synergies expected from intensive use of technology-based production were identified as the driving force behind these business acquisitions (Kleinert and Klodt, 2002).

The fifth business acquisition wave was recorded in 1995. These business acquisitions were driven by deregulation and globalisation to increase market share and to achieve economies of scale. Globalisation resulted into an extension of markets and firm sizes. During this period, major market players through business acquisitions established monopolistic power globally. This merger wave created opportunities to penetrate foreign markets through cross-border business acquisitions[6] and this wave established an intense market competition. During this wave, formation

[6] Cross-border business acquisitions are deals between foreign firms and domestic firms in the target country (Gaughan, 2017).

of common markets like the single European market and large-scale privatisation programmes through business acquisitions came into effect to further stimulate the wave. Motor, transport, pharmaceutical, telecommunications and utilities industries were affected during this merger period (Kleinert and Klodt, 2002).

The sixth business acquisition wave was recorded from 2000 to 2007. Business acquisitions recorded a decline in 2001 and 2002 due to global recession, corporate scandals[7] and an uncertain corporate and political environment including global terrorist threats. However, the momentum of business acquisitions commenced again in 2003 showing an upward trend, where the majority of business acquisitions were carried out by strategic buyers by way of cross-border mergers and horizontal megamergers[8]. Chemicals, motor vehicles, electrical and electrical related industries were affected by this merger wave (Kleinert and Klodt, 2002).

Kleinert and Klodt (2002) in their study on "Causes and Consequences of Merger Waves", have noticed that competition from globalisation has been responsible for national merger activities as it has contributed to increased and altered intensity of competition in national markets. Many national mergers in the European banking sector have been driven by the increased intensity of competition in their international environment.

Business acquisitions promote firms for market entry or exit, help firms improve cost efficiency, and reduce competitive pressures by establishing or extending a dominant market position.

[7] A corporate scandal involves alleged or actual unethical behavior by people acting within or on behalf of a corporation and these result in corporate collapse and become insolvent or bankrupt (Kleinert and Klodt, 2002).
[8] A merger between firms that operate in the same industry is identified as a horizontal merger (Gaughan, 2017).

Sometimes when some firms within an industry decide to invest in business acquisitions, other firms in the same industry tend to follow them. Such a circular and repetition of business acquisition activities by firms lead to distinct sectorial merger waves.

In the process of globalisation, increased foreign direct investments reflects the growing importance of business acquisitions. Cross-border business acquisitions have contributed about 50 per cent of total foreign direct investment outflows until the mid-1990s. In 1999, the ratio of cross-border business acquisitions to foreign direct investment has increased to a level of 84 per cent, and in the year 2000 it has reached almost 100 per cent, with a value of US$1,144 billion of business acquisitions and a value of US$1,150 billion of foreign direct investment in the U.S. market as analysed by Kleinert and Klodt, (2002). Increased growth in foreign direct investments and business acquisitions demonstrates that business acquisitions have become a dominant strategy for firms when adapting to the pressures of globalisation. Increased business acquisitions, and development of these in waves, are a result of rising intensity of competition in world markets due to deregulation and globalisation (Kleinert and Klodt, 2002).

With rapid globalisation of commerce, domestic business acquisitions play a major role in growth strategies of firms to enhance shareholders wealth (McDonald, *et al*., 2005). Business acquisitions leverage Australian firms to realise greater international competitiveness particularly through cross-border business acquisitions to establish and maintain a bigger market share and competitive advantage in the international market. Business acquisitions are a major mechanism through which the firms that are national can become multinational firms. The cost benefit analysis of business

acquisition impacts the investment decision by the acquirer's managers and shareholders in their decision to invest in a business acquisition.

Business acquisition decisions are influenced by several factors. Examination of elements that influence business acquisition decisions at firm level is rarely investigated as it is based on a set of complex decision-making characteristics. Andrade *et al*. (2001) identify possible economic situations where business acquisitions occur. Prior studies on elements influencing business acquisitions have examined both domestic and cross-border business acquisitions mostly in the U.S.A.: (Ablo,2009; Audrersch, 1989; Benzing, 1991; Cheng *et al*., 1989; Connor and Geithman, 1988; Danzon *et al*., 2007; Erel *et al*., 2012; Kaplan, 2007; Olson and Pagano, 2005; Palia, 1993; Reed and Babool, 2003; Schwartz, 1984; Tremblay and Tremblay, 1988), and the European market: (Erdogan, 2012; Hernando *et al*., 2009; Lanine and Vander, 2007; Luypaert and Huyghebaert, 2010; Manchin, 2004; Repullo, 2001; Ucer, 2009; Visic and Skrabic, 2010). Cross-border business acquisitions are highly regulated as they involve more than one country, different jurisdictions with different economic, political, and legal backgrounds. Determinants applicable to cross-border business acquisitions may not be equally influence on the domestic business acquisitions. Determinants applicable to the domestic business acquisitions in one country may not be equally applicable to another country. There are very few studies that have investigated the determinants of domestic business acquisitions. Tremblay and Tremblay (1988) have investigated the determinants of horizontal acquisitions in the U.S. brewing industry. Erdogan (2012) has investigated the determinants of mergers and acquisitions in Turkey. However, findings of these studies are likely to be less relevant to Australia due to differences in its governance framework and economic environment underlying its business framework. Worthington (2004) examined the

determinants of merger and acquisition activity in Australian cooperative deposit-taking institutions. Other than the study by Worthington (2004), there is no other study that investigated factors influencing the business acquisition decision of firms in Australia. Australia has recorded a significant number of domestic business acquisitions. Erel *et al*. (2012) finds that Australia has recorded the largest number of domestic mergers and acquisitions during the period from 1990 to 2007 compared to global mergers and acquisitions. Factors influencing the business acquistion decision (the deal value) of companies that are listed on the Australian Securities Exchange are not known. Therefore, there is a need to investigate empirically the factors influencing business acquisitions in Australia, particularly with the immense competition arising from the global market through e-commerce activities of companies aiming to maintain a greater market share. This study attempts to meet the gap in the knowledge by identifying the factors influencing the business acquisitions decision of companies that are listed on the Australian Securities Exchange. Identification of determinants of business acquisitions of acquirers that are listed on the Australian Securities Exchange will be useful for businesses and policy makers to estimate the most possible purchase price consideration, to develop a more competitive capital markets and to establish a competitive market share in the local and global markets by examining the relationship between the business acquisition decision that represents the deal value, and the acquirer's characteristics (profitability, liquidity and leverage), macro-economic characteristics (interest rate, exchange rate and stock market index), acquirer's industry classification and time when the business acquisition takes place. Policy makers can consider impact of these on major macro-economic policies of fiscal policy, monetary policy including lending reforms, supply-side and trade policies to achieve or maintain full employment, a high rate of economic growth, and to stabilise prices and wages.

1.3 Objectives and Research Questions

Unlike in many other economic issues, there is no unique theoretical foundation to precisely explain the process of decision making towards business acquisitions of firms. Nevertheless, researchers have used two stands of theoretical perspectives, Expectation theory and Economic Disturbances theory, to examine the decision-making process of business acquisitions (Kamaly, 2007). Between these two theories, the Expectation perspective is widely used in price related decision-making process. The Expectation theory examines price changes in the stock market and the variables that influence such changes. Then it explains how the price changes in stock market and other influential variables impact and lead business acquisitions process. The Economic Disturbance theory examines the undervalued stocks caused by increased investor uncertainty on firm's returns due to rapid changes in technology and movements in security prices. Such changes may cause capital to be reallocated to more productive and efficient firms (Gort, 1969). Historical merger-wave is a result of the increased investor uncertainty (Hellgren *et al*., 2011; Trautwein, 1990).

This study aims to fill the gap in knowledge relating to the factors influencing business acquisition decisions of companies listed on the Australian Securities Exchange. The study investigates the determinants of the business acquisition decision of companies that are listed on the Australian Securities Exchange. To reduce the complexity in the decision-making process, the investigation adopted in this study identifies and delineates the decision-making characteristics as acquirer related and macro-economic related, which is a unique contribution to the knowledge from this study.

Given the above unique research perspective, there are six specific objectives of this research. They are:

RO1: To examine validity of some of the possible acquirer related determinants of the business acquisition decision of acquirers that are listed on the Australian Securities Exchange. The study investigates the impact of the acquirer's profitability, leverage, and liquidity on the business acquisition decision of acquirers that are listed on the Australian Securities Exchange;

RO2: To examine whether the industry classification of an acquirer impacts on the business acquisition decision in RO1;

RO3: To examine whether the time in terms of when the business acquisition occurs impacts on the business acquisition decision in RO1;

RO4: To examine validity of some of the possible macro-economic related determinants of the business acquisition decision of acquirers that are listed on the Australian Securities Exchange. The study examines the impact of macro-economic variables of interest rate, exchange rate and stock market index on the business acquisition decision of acquirers that are listed on the Australian Securities Exchange;

RO5: To examine whether the industry classification of an acquirer impacts on the business acquisition decision in RO4; and

RO6: To examine whether the time in terms of when the business acquisition occurs impacts on the business acquisition decision in RO4.

There is no other study that has investigated RO1 to RO6, which is an original contribution to the knowledge from this study.

In line with the above six specific research objectives, the study focuses on the following six research questions:

RQ1: How do the acquirer's profitability, leverage, and liquidity affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange?

RQ2: Does the industry classification of an acquirer impact on the business acquisition decision in RQ1?

RQ3: Does the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ1?

RQ4: How do the macro-economic variables of interest rate, exchange rate and stock market index affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange?

RQ5: Does the industry classification of an acquirer impact on the business acquisition decision in RQ4?

RQ6: Does the time in terms when the business acquisition occurs impact on the business acquisition decision in RQ4?

1.4 Overview of the Sample, Data, and Research Methodology

This study uses a sample of 160 completed business acquisitions of acquirers that are listed on the Australian Securities Exchange over a 16-year period from 1997 to 2012, to examine the hypothesis related to RQ1 to RQ6. The top 10 completed business acquisitions for each year from 1997 to 2012 is selected based on the highest deal value. The sample is selected based on the following criteria: first, acquirers must be listed on the Australian Securities Exchange during the period January 1997 to December 2012. Second, business acquisitions of acquirers that are listed on the Australian Securities Exchange must be the completed business acquisitions during the period January 1997 to December 2012. Third, the acquirers' audited annual financial statements and the business acquisition related data: bidder and target company names, deal announced date, bid status, industry classification, and the deal value must be available. Fourth, top ten in each year, ordered based on the highest deal value of completed business acquisitions must be selected. Fifth, the interest rate of Australia must be available for the period January 1997 to December 2012. Sixth, the Australian dollar to the United States dollar exchange rate must be available for the period January 1997 to December 2012. Seventh, the main stock market index All Ordinaries ASX500 of Australia must be available for the period January 1997 to December 2012.

Completed business acquisitions are used for the sample for the following reasons: First, there is no acquirer for the unsuccessful business acquisitions, and therefore it is not possible to determine the value of the business acquisition decision (the deal value) for this study. Second, all relevant

data for this study are not available for the unsuccessful business acquisitions. Third, sample of this study which is 72 per cent of the population fairly represents the population characteristics.

The top ten completed business acquisitions are used for the sample for the following reasons: First, the deal value of top ten completed business acquisitions fairly represents 79.13 per cent of the population deal value. Second, investigating the top ten deal values for each year provides a stronger evidence on the determinants of the business acquisition decision (the deal value) of the acquirers.

The period from 1997 to 2012 is used for the sample for the following reasons: First, the business acquisition data for companies that are listed on the Australian Securities Exchange are available from 1997 since the commencement of electronic trading. Second, Australia has recorded a solid positive economic growth during the global financial crisis from mid-2007 to early-2009, and the Australian banking system remained profitable continually providing lending support to Australian businesses. Third, during 1997 to 2012 Australia has recorded the highest number of domestic business acquisitions as per Morningstar Data Analysis Premium business acquisitions data base maintained by Thomson Reuters. Fourth, the period from 1997 to 2012 has been selected in order to capture firm specific, industry specific, time specific and macro-economic environment specific factors to reflect different economic and business cycles as well as to observe behavior and relationship of the possible determinants of business acquisitions.

The data for the empirical analysis are from the Thomson Reuters' Morningstar Data Analysis Premium business acquisitions data base. The data to calculate the determinant variables of the

acquirer's profitability, leverage, liquidity and industry classification are from the Thomson Reuters' Morningstar Data Analysis Premium. The data to calculate the macro-economic related determinant variables of the Interbank Cash Rates and the Australian dollar to the United States dollar exchange rates are from the Statistics data base maintained by the Reserve Bank of Australia, and the data for the stock market index are from the All Ordinaries ASX500 of the Australian Securities Exchange. The dependent variable of the study is the business acquisition decision. The study uses deal value (DV) as the measure of the business acquisition decision. The deal value which is the measure of the acquirer's business acquisition decision represents the price an acquirer is willing to pay to buy a share of a target. The data for the dependent variable DV are obtained from the Thomson Reuters' Morningstar Data Analysis Premium. Section 3.2 of the Chapter 3 presents a detailed description of the sample, sample procedure and data set.

The study uses the ordinary least squares (OLS) multiple regression methodology to investigate RQ1 to RQ6 and test the related hypotheses $H_1 – H_{10}$. The study develops six statistical models, M1 to M6 representing six statistical equations 3.1 to 3.6 based on the OLS multiple regression methodology to examine RQ1 to RQ6. These six OLS multiple regression methodology based statistical models examine the association between the dependent variable DV and the independent variables as the main tests. The study uses acquirer related test variables of profitability (PROF), leverage (LEVE), and liquidity (LIQU). The study uses macro-economic related test variables of interest rate (IR), exchange rate (ER), and stock market index (SMI).

The study uses dummy variables to assess impact of acquirer's industry classification (IND) and the time (TIME) on the acquirer's business acquisition decision (the deal value). Study codes these dummy variables, 1 if the relevant criterion is true, and 0 otherwise.

To test the robustness of the main results, that is to examine that the fundamental assumptions of the OLS multiple regression methodology are not violated and, as such the prediction and the estimation power of the six statistical models M1 to M6 are not biased, this study uses the generalised method of moments (GMM) analysis.

1.5 Summary of Findings

By examining a sample of 160 completed business acquisitions representing 79.13 per cent of the population in terms of the total deal value of completed business acquisitions during 1997 to 2012, this study finds that the acquirer's profitability is statistically significantly positively associated with the business acquisition decision (the deal value) of companies that are listed on the Australian Securities Exchange, supporting the finding of major prior studies such as Erel *et al.* (2012), Kastrinaki and Stoneman (2007), and Vyas *et al*. (2012). The results of the multiple regression analysis show evidence that the greater the profitability of an acquirer, the greater its influence on the price that acquirers willing to pay to buy a share of a target. A significant positive association between the acquirer's profitability and the the business acquisition decision (the deal value) is consistently supported by this study's main tests and results from the robustness tests.

The study finds that the acquirer's leverage is statistically significantly positively associated with the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when the acquirer's business acquisition decision is influenced by their industry classification. This finding of positive association between the acquirer's leverage and investment in business acquisitions is consistent with the prior studies of Dessyllas and Hughes (2005), Hernando *et al*. (2008), and Vyas *et al*. (2012). A significant positive association between the acquirer's leverage and the business acquisition decision (the deal value) is consistently supported by this study's main tests and results from the robustness tests.

The study finds that the acquirer's liquidity is statistically significantly negatively associated with the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange. This finding is not in agreement with the previous studies of Boyan and Peter (2002), Vyas *et al*. (2012), and Weston *et al.* (2007). A significant negative association between the acquirer's liquidity and the business acquisition decision (the deal value) is consistently supported by this study's main tests and results from the robustness tests.

The study finds that the acquirer's profitability, leverage, and liquidity have a statistically significant impact on the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when the acquirer's business acquisition decision is influenced by their industry classification. This suggests that acquirers aim to establish a competitive market position through industry concentration when they undertake business acquisitions. A significant impact the acquirer's profitability, leverage, and liquidity have on the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when the acquirer's

business acquisition decision is influenced by their industry classification is consistently supported by this study's main tests and results from the robustness tests.

This study finds that the acquirer's profitability, leverage, and liquidity have a statistically significant influence on the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when the acquirer's business acquisition decision is influenced by the time in terms of when the business acquisition occurs. A significant impact the acquirer's profitability, leverage, and liquidity have on the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when the acquirer's business acquisition decision is influenced by the time in terms of when the business acquisition occurs is consistently supported by this study's main tests and results from the robustness tests.

This study finds that the macro-economic variable, interest rate is statistically significantly positively associated with the acquirer's business acquisition decision (the deal value) of companies that are listed on the Australian Securities Exchange. This finding supports the previous studies of Erel *et al.* (2012), Irina (2021), Kamaly (2007), Marsh (1982) and Taggart (1977). When interest rates are high cost of capital particularly cost of debt becomes expensive. This finding shows evidence that when interest rates are high acquirers pay a higher price to buy a share of a target suggesting that acquirers tend to undertake business acquisitions aiming to establish a monopolistic market situation as part of their growth strategies to generate higher returns to cover cost of debt, and to their shareholders. A significant positive association between the macro-economic variable interest rate and the business acquisition decision (the deal value) is consistently supported by this study's main tests and results from the robustness tests.

The study finds that the macro-economic variable, exchange rate is statistically significantly positively associated with the acquirer's business acquisition decision of companies that are listed on the Australian Securities Exchange. This finding is consistent with studies of Benzing (1992), Clark *et. al*. (1988), Kamaly (2007), Melicher *et.al.* (1983), Nelson (1959), Nelson (1966), Poloncheck and Sushka (1987), Shughart and Tollison (1984), and Weston (1961). When Australian dollar appreciates, domestic firms whose products are predominantly exported or sold in overseas find a decrease in their exports. When Australian dollar appreciates, imported goods and services become cheaper for the Australian consumers. As a consequence, domestic firms face a competition with the cheaper imported goods and services to safeguard their survival and market share in the domestic market. In such a situation, domestic firms tend to undertake business acquisitions as part of their growth strategies utilising synergy gains to establish a competitive market position including monopolistic market position, better diversification, increased productivity, quality, and cost savings to generate higher returns to their shareholders. A significant positive association between the macro-economic variable exchange rate and the business acquisition decision (the deal value) is consistently supported by this study's main tests and results from the robustness tests.

The study finds that the macro-economic variable of stock market index is statistically negatively associated with the acquirer's business acquisition decision of companies that are listed on the Australian Securities Exchange. This finding is consistent with studies of Reed and Babool (2003) and Vasconcellos and Kish (1996 and 1998). However, the study results suggest that the stock market index does not have a statistically significant bearing and influence on the business acquisition decision (the deal value) of acquirers listed on the Australian Securities Exchange.

When stock market index rises it is easier for firms to issue new shares since there is a healty demand for equties. In such a situation business acauistions may not be attractive for acquirers. When stock market index falls, acquirers tend to offer a higher price for a share of a target for undertaking business acquistions. A negative association between the macro-economic variable stock market index and the business acquisition decision (the deal value) is consistently supported by this study's main tests and results from the robustness tests.

The study shows evidence that the macro-economic variables of interest rate, exchange rate and stock market index have a statistically significant influence on the acquirer's business acquisition decision of companies that are listed on the Australian Securities Exchange when acquirers consider their industry classification as part of their decision. This suggests that acquirers undertake business acquisitions aiming to establish their competitive market position via industry concentration. A significant impact the macro-economic variables of interest rate, exchange rate and stock market index have on the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when the acquirer's business acquisition decision is influenced by their industry classification is consistently supported by this study's main tests and results from the robustness tests.

The study supports that the macro-economic variables of interest rate, exchange rate and stock market index do not have a significant bearing and influence on the acquirer's business acquisition decision of companies that are listed on the Australian Securities Exchange when acquirers consider the time in terms of when the business acquisition occurs as part of their decision. An insignificant impact the macro-economic variables of interest rate, exchange rate and stock market

index have on the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when the acquirer's business acquisition decision is influenced by the time in terms of when the business acquisition occurs is consistently supported by this study's main tests and results from the robustness tests.

1.6 Significance and Practical Contribution

This study contributes to the business acquisitions literature in finance discipline by providing empirical evidence of the factors influencing business acquisition decisions of companies listed on the Australian Securities Exchange from 1997 to 2012, from the perspective of the acquirer's financial characteristics and incorporating macro-economic factors.

Several studies have investigated factors influencing business acquisitions in developed countries such as the U.S.A, European region, the U.K. and developing countries such as India. Most of these studies have investigated determinants of business acquisitions that include both cross-border and domestic business acquisitions. Previous studies of determinants of business acquisitions (Ablo,2009; Audrersch, 1989; Benzing, 1991; Cheng *et al*., 1989; Connor and Geithman, 1988; Danzon *et al*., 2007; Erel *et al*., 2012; Kaplan, 2007; Olson and Pagano, 2005; Palia, 1993; Reed and Babool, 2003; Schwartz, 1984; Tremblay and Tremblay, 1988) have focused on the U.S.A market.

Studies of determinants of business acquisitions (Erdogan, 2012; Hernando *et al*., 2009; Irina, 2021, Lanine and Vander, 2007; Luypaert and Huyghebaert, 2010; Manchin, 2004; Repullo, 2001; Ucer, 2009; Visic and Skrabic, 2010) have focused on the European market.

Studies of determinants of business acquisitions (Hyun and Kim, 2007; Kaplan, 2007; Neto *et al*., 2008; Rossi and Volpin, 2004) have focused on the global market.

The study by Kastrinaki and Stoneman (2007) has focused on the determinants of business acquisitions in the U.K. market. Few studies (Kamaly, 2007; Kohli and Mann, 2012; Kinateder *et al*., 2017; Misra, 2009; Vyas *et al*., 2012) have investigated the determinants of business acquisitions in emerging markets.

A country's regulatory, economic, financial, political, technological, and socio-cultural environments influence business acquisitions. Volume of business acquisitions is significantly larger in countries with better accounting standards, stronger governance framework and investor protection (Carapeto *et.al*., 2010). The determinants identified in previous studies may not be equally relevant to listed companies on the Australian Securities Exchange.

Worthington (2004) has studied the determinants of business acquisitions in Australian credit unions. Worthington's study addresses a limited scope. As the main objective of credit unions is not to maximise profit but to maximise benefits to members, findings of his study cannot be generalised to business acquisitions by all firms in Australia. Previous studies indicate that there is no research done on investigating the determinants of business acquisitions of companies listed on the Australian Securities Exchange. There is a gap in the literature with respect to identifying factors influencing the business acquistion decision (the deal value) of acquirers listed on the Ausralian Securities Exchange. Therefore, there is a need to investigate the factors influencing the business acquisition decision (the deal value) of listed companies in Australia. To the best of my

knowledge this study is the first study to examine the factors influencing the business acquistion decision (the deal value) of acquirers that are listed on the Australian Securities Exchange. This study aims at filling this gap of knowledge by providing an original contribution to the finance literature. This study provides a unique contribuion to the literature by identifying factors influencing the business acquistion decision (the deal value) of acquirers listed on the Australian Securities Exchange from the perspective of the acquirer's financial charateristics and incorporating macro-economic factors. This study contributes to the literature by investigating impact of the acquirer's charatertictics of profitbaility, leverage and liquidity, and macro-economic characterristics of interest rate, exhange rate and stock market index, on the deal value (DV) that represent the business acquistion decision, by using multiple regresion methodology. In addition, this study also provide an original contribution to the literature by identifying impact of acquirer's industry classification and time when the business acquistion takes place, on those factors that influence the business acquistion decision of listed companies on the Australian Securities Exchange from the acquirer's point of view and macro-economic point of view. Further, findings of this study will be useful in estimating the most possible purchase price consideration by companies listed on the Australian Securities Exchange in relation to business acquisitions.

Business acquisitions are a vibrant investment decision that influences and determines firm value. Therefore, the choice of business acquisitions becomes an important investment decision as part of a firm's growth strategy. In this context, the identification of the factors affecting the business acquisition decision (the deal value) of listed companies on the Australian Securities Exchange provides a valuable guidance for acquirers to assess and choose the right investment decision to enhance business growth and shareholders' wealth. Awareness of determinants of the business

acquisition decision (the deal value)s of companies that are listed on the Australian Securities Exchange, becomes significant for corporate managers, rival firms, lending institutions, stock market, government and related regulatory institutions in corporate and strategic planning including corporate risk management, corporate stability and stabilisation of earnings, formulation of economic and monetary policies including lending reforms, stronger governance framework, investor protection, supply-side and trade policies distinctively to develop the capital market for wealth explanation especially to be more competitive with the globalisation of commerce, and to achieve or maintain full employment, a high rate of economic growth, and to stabilise prices and wages.

1.7 Thesis Structure

This section outlines the structure of this thesis. The first chapter, the Introduction, presents the background and motivation that led to the identification of a research gap in the literature in relation to the determinants of the business acquisition decision (the deal value). It presents six research objectives and poses six research questions in the context of investigating the factors influencing the business acquisition decision (the deal value). A discussion of this study's data, research methodology, findings, significance, and practical contribution then follows.

Chapter 2 presents the theoretical background and a literature review pertaining to the six research questions. The chapter first reviews the theoretical background of studies regarding the factors influencing the business acquisitions. The chapter then reviews prior studies that have examined the factors influencing business acquisitions in the context of the study's motivation and methodology used in examining the acquirer's and macro-economic impact on the deal value (DV)

which represents the business acquisition decision. The chapter then presents the conceptual model, determinants of the business acquisition decision and hypotheses (H_1 to H_{10}) relating to six research questions (RQ1 to RQ6). The last section summarises the chapter.

Chapter 3 presents the research methodology used in investigating factors influencing the acquirer's business acquisition decision which is the deal value. It begins by describing the sample, and the sample selection for six research questions. It also describes the period of interest, sample firms, data sources, and sampling procedure. The chapter then discusses the research design to investigate the hypotheses H_1 to H_{10} relating to RQ1 to RQ6 including the robustness tests to examine the main results. This discussion covers three major topics: the statistical models (M1, M2, M3, M4, M5 and M6) developed for examining the variables that influence the acquirer's business acquisition decision, estimation methods and the measurement of the dependent and independent variables. The last section summarises the research methodology chapter.

Chapter 4 presents the results from the multiple regression testing for the variables used in investigating the hypotheses H_1, H_2 and H_3 related to RQ1, H_4 related to RQ2 and H_5 related to RQ3. It begins with a presentation of the descriptive statistics for the independent and dependent variables for the statistical models M1, M2 and M3, followed by a correlation analysis of the independent variables. The chapter next analyses and discusses the results and statistical significance from the main tests for the five hypotheses related to RQ1, RQ2 and RQ3, followed by the results and statistical significance from the robustness tests. The last section summarises the chapter.

Chapter 5 presents the results from the multiple regression testing for the variables used in investigating the hypotheses H_6, H_7 and H_8 related to RQ4, H_9 related to RQ5 and H_{10} related to RQ6. It begins with a presentation of the descriptive statistics for the independent and dependent variables for the statistical models M4, M5 and M6, followed by a correlation analysis of the independent variables. The chapter next analyses and discusses the results and statistical significance from the main tests for the five hypotheses related to RQ4, RQ5 and RQ6, followed by the results and statistical significance from the robustness tests. The last section summarises the chapter.

The final chapter, Chapter 6, summarises all the previous chapters. It revisits the research questions and summarises the hypotheses development and methodology. The chapter then re-examines the research findings from prior chapters and presents the thesis's conclusions. The final sections of this chapter discuss this study's limitations and offers areas for future research.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

2.1 Introduction

The previous chapter presented the background, motivation, and research questions of this study. This chapter reviews the literature related to this study and develops the hypotheses related to the first (RQ1) to the sixth (RQ6) research questions. This chapter is structured as follows. Section 2.2 reviews the theoretical background and motives relating to business acquisition decisions, followed by a review of studies on determinants of business acquisitions in Section 2.3. Section 2.4 reviews the regulatory framework in relation to business acquisitions in Australia. Section 2.5 reviews the academic literature and develops the hypotheses on the factors influencing the business acquisition decision of listed companies in Australia relating to RQ1: How do the acquirer's profitability, leverage, and liquidity affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange? RQ2: Does the industry classification of an acquirer impact on the business acquisition decision in RQ1? and RQ3: Does the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ1? Section 2.6 reviews the academic literature and develops the hypotheses on the factors influencing the business acquisition decision of listed companies in Australia relating to RQ4: How do the macro-

economic variables of interest rate, exchange rate and stock market index affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange? RQ5: Does the industry classification of an acquirer impact on the business acquisition decision in RQ4? and RQ6: Does the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ4? Finally, Section 2.7 summarises the literature review and lists the ten hypotheses of the study: H_1, H_2 and H_3 related to RQ1; H_4 related to RQ2; H_5 related to RQ3; H_6, H_7 and H_8 related to RQ4; H_9 related to RQ5; and H_{10} related to RQ6.

2.2 Theoretical Motives of Investments in Business Acquisitions

Investments in business acquisitions are driven by a complex pattern of motives. There have been several theories developed on investments in business acquisitions explaining their motives and these have been tested by many empirical studies globally in different periods. This section reviews Efficiency theory, Monopoly theory, Valuation theory, Empire Building theory, Process theory, Tobin's Q theory, Information Asymmetry (Signaling) theory, Industry Life Cycle theory, Free Cash Flow theory, Corporate Diversification theory, Pure Diversification theory, Agency Cost theory, Corporate Tax theory , Product Market Interaction theory, Economic Disturbance theory, Market for Corporate Control theory and Pecking Order theory, in relation to identifying acquirers' motives for investments in business acquisitions. The papers reviewed in this chapter are selected based on their significance to the scope of this thesis.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

2.2.1 Efficiency Theory

Efficiency theory suggests that companies are motivated to invest in business acquisitions to realise synergy gains. As suggested by Efficiency theory, acquirers are motivated to undertake business acquisitions to have an increased production capacity, sales, and earnings, reduced direct and indirect costs, increased corporate efficiency and, ultimately to enhance shareholders' wealth. It is argued that the value of an acquirer company is more after a business acquisition than its value before the business acquisition due to the synergy gains. However, it is debated that the Efficiency theory is valid and beneficial for an acquirer only when the investment in a business acquisition generates positive net present value of cash benefits. When the net present value of cash benefits resulting from an investment in a business acquisition is a positive, the business acquisition creates value to the acquirer's shareholders. When the the net present value of cash benefits resulting from a business acquisition is a negative, business acquisition deteriorates the acquirer's shareholders' wealth. Synergy gains achieved from a business acquisition have been examined in many studies and identified as the primary motive for undertaking a business acquisition (Bruner 2002; Chatterjee, 1986; Cummins *et al.,* 2019; De *et al.*, 2019; Depamphilis, 2010; Gupta *et al*., 2021; Harald, 2017; Hellgren *et al*., 2011; Heckova et al., 2017; Kitching 1967; Porter,1985; Rumelt, 1986; Satapathy and Mishra,2020; Trautwein, 1990; Vaara and Monin, 2010; Weston *et al.*, 2007).

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

Efficiency theory illustrates three types of synergy gains an acquirer can achieve through an investment in a business acquisition. Acquirers are motivated to invest in business acquisitions to achieve these three types of synergy gains, operational, financial, and management by way of realising an increased net present value of cash benefits to the business. As illustrated by the Efficiency theory, acquirers are motivated to invest in business acquisitions to realise gains arising from: operating economies of scale in management, production or distribution; financial economies of scale in terms of having a greater price earnings ratio, lower cost of debt, or a greater debt capacity; differential management efficiency gains in terms of an improved profitability from the acquired assets as a result of shifting management of these assets from a relatively inefficient management to an efficient management; and increased market power and reduced competition as a result of increased concentration.

Efficiency theory explains that acquirers expect to gain operational synergy from an investment in a business acquisition, in terms of increased production capacity and revenue, and reduction in costs from economies of scale[9], economies of scope and knowledge transfer (Depamphilis, 2010; Porter,1985; Weston *et al.*, 2007). Acquirers are motivated to invest in business acquisitions when they assess that they can establish their competitive market position through increased production capacity and knowledge, to offer innovative products and services and to achieve a lower cost of

[9] Economies of scale is achieved when fixed costs spread over a large volume of production. Economies of scope is achieved when manufacturing cost of two different products produced by different firms is more than the cost of those products produced by a single firm (Depamphilis, 2010).

capital. Efficiency theory suggests that acquirers compare and weigh these potential operational synergy benefits with the cost of business acquisition before they decide to invest in business acquisitions.

Efficiency theory holds that financial synergies bring a lower cost of capital to an acquirer by lowering its unsystematic risk[10] by way of effective diversification (Weston *et al.,* 2007). Investment in a business acquisition generates financial synergies to an acquirer by way of extending its investment portfolio to unrelated investments through effective diversification. Acquirers are motivated to minimise their business risk through effective diversification. It is argued that financial synergy is realised when an acquirer with high internal cash flows and poor investment opportunities acquires a target firm with low internal cash flows and high investment opportunities. In such a situation, rather than attempting to invest excess cash in other costly investment opportunities, investing in a business acquisition as part of an acquirer's growth strategy strengthens the acquirer's returns and enhance its shareholders' wealth (Weston *et al.,* 2007). Efficiency theory holds that investing in a business acquisition increases the combined values of an acquirer and a target by funding excess cash of an acquirer on positive net present value projects that cannot be otherwise financed by the target due to the agency problems between

[10] Firm or industry specific risk is identified as the unsystematic risk. Unsystematic risk is attributable to individual investment or small group of investments and it is uncorrelated with stock market returns. Unsystematic risk can be nearly eliminated with proper diversification of investments (Weston *et al.,* 2007).

managers and potential bond holders in line with the Agency theory (Bruner 2002; Chatterjee 1986; Kitching 1967; Montgomery and Singh, 1984; Rumelt, 1986). However, some studies have criticised validity of financial synergy arising from investments in business acquisitions, as financial synergy cannot be achieved in an efficient capital market where share prices fully reflect new information without leaving any information gap (Kitching, 1967; Montogomery and Singh, 1984; Porter 1987; Rumelt, 1986; Trautwein, 1990).

As suggested by Weston *et al.* (2007), acquirers who are having managers with superior corporate management skills including strategic investment planning and monitoring, are motivated to invest in companies that are being inefficiently managed due to shortage of cash resources in order to have improved business performance and benefits through managerial synergies.

2.2.2 Monopoly Theory

Monopoly theory suggests an acquirer's motive for undertaking a business acquisition is to establish a monopolistic market position. Monopoly theory contends that an acquirer aims to strategically transfer wealth from a target's customers to the acquirer's shareholders by establishing a monopolistic market position through increased market or industry concentration (Hellgren *et al*., 2011). It is true to say that all businesses try and transfer wealth from customers to shareholders, however, undertaking a business acquisition aims at gaining market power

strategically by acquiring a target's customers and establishing a stronger control over the market through market concentration in order to earn monopoly profits.

Monopoly theory explains that it applies more to investments in horizontal[11] business acquisitions. It is argued that acquirers are motivated to undertake business acquisitions by way of horizontal business acquisitions, strategically using it for cross-subsidising products (where profit from one market is used to sustain a competition for share in another market), or by controlling competition in more than one market and preventing the entry of potential competitors in the market. As Monopoly theory explained, acquirers aim to achieve a highly concentrated market position and to become a market leader (Edwards 1955; Feinberg, 1985; Porter, 1985). Market concentration provides acquirers with collusive synergies[12] (Chatterjee, 1986) and competitor inter-relationships[13] (Porter, 1985).

As Porter (1985) illustrated, the rules of market competition are embodied in five competitive forces. They are, the entry of new competitors, the threat of substitutes, the bargaining power of buyers, the bargaining power of suppliers, and the rivalry among the existing competitors. These

[11] A horizontal merger occurs between firms that operate in the same industry (Gaughan, 2017).
[12] Collusive synergy arises due to the market power in the output market and buying power in the input market when an industry moves closer to a monopolistic market position. When firms gain collusive synergies those firms also gain the ability to either sell their products or service at a higher price or pay their suppliers a reduced price (Chatterjee, 1986).
[13] When rival firms compete with another firm in more than one industry a competitor inter-relationship arises (Porter, 1985).

five competitive forces collectively determine ability of a firm in an industry to earn on average, a rate of return on its investments more than its cost of capital. Industries inherent different profitability levels as the influence of these five competitive forces varies from an industry to industry. Industry structure including underlying economic and technical characteristics is determined based on the strength of each of these five competitive forces. It is argued that companies are motivated to invest in business acquisitions to establish a monopolistic position as a reaction to the impact of these five competitive forces.

Again, there are lots of critics for monopoly theory as findings from some of the previous empirical investigations suggest that collusive synergies do not represent efficiency gains, rather they transfer wealth from the target firm's customers to the acquiring firm (Scherer,1980), however Jensen (1984) rejects the Monopoly theory. Findings from previous empirical studies on investigating whether industry concentration causes reduced competition are not conclusive. However, there is much evidence that market or industry concentration is the result of vigorous and continuing competition which causes the composition of the leading firms to change over time (Scherer,1980, Jensen 1984).

2.2.3 Valuation Theory

Valuation theory explains that an acquirer's managers have private information about a potential target firm's expected business value which is not available to external investors and the stock

market, particularly when the target firm has been undervalued by the stock market (Holderness and Sheehan, 1985; Ravenscraft and Scherer, 1987; Steiner, 1975). In such a situation, a business acquisition decision is initiated, planned, and executed by an acquirer's management based on possible advantages that can be generated from a potential target. In this perspective it can be argued that leveraged buyouts[14] come within Valuation theory. Hellgren *et al*. (2011) argue Valuation theory is a rational choice theory[15] as it tries to maximise acquirer's shareholders' wealth by effectively using privately available information about a target, or by identifying an undervalued target, in terms of increasing earnings and expanding market share of the acquire. However, Ravenscraft and Scherer (1987) argued against Valuation theory as it is not possible for an acquirer's managers to have unique information about a target firm when all the information is incorporated in the stock prices in an efficient market. Therefore, it can be argued that the rationale of Valuation theory is against the efficient market hypothesis[16]. One can also argue that Valuation theory has a relationship to the Information Asymmetry (Signaling) theory.

2.2.4 Empire Building Theory

Motivation behind the Empire Building theory is quite different to the Valuation theory. Valuation theory explains that investment in business acquisitions is planned and executed by its managers

[14] A leveraged buyout is a situation when an acquirer acquirers a target firm using a significant amount of borrowing to pay cost of the acquisition. The acquirer uses the assets of the target firm as collateral for the borrowing, along with the assets of the acquirer (Gaughan, 2017).
[15] Rational choice theory holds that firms make rational choices based on rational calculations, aiming at outcomes aligned with their own best interests (Hellgren *et al*., 2011)
[16] The efficient-market hypothesis holds that the stock prices reflect all available information (Fama, 1970).

to maximise shareholders' wealth. In contrast to Valuation theory, Empire Building theory explains that investment in business acquisitions are planned and executed by its managers to maximise their perks rather than maximising shareholders' wealth (Black 1989; Ravenscraft and Scherer 1987; Rhoades 1983; Trautwein, 1990). Marris (1963) argues that Empire Building theory stresses that managers of an acquirer are openly motivated to invest in business acquisitions aiming to have increased growth of their firm's revenues or assets, subject to a minimum profit requirement. It can be argued that when an acquirer's managers' perks are linked to increased revenue, they are motivated to invest in business acquisitions as a mean of generating a more sustainable greater return.

Trautwein (1990) says that the managers who execute business acquisition transactions are the "raider". Trautwein (1990) who identifies the Raider theory says that it can possibly become a sub-theory under the Empire Building theory. The raider processes business acquisition transaction and organises the transfer of wealth from the shareholders of target firm to the shareholders of the acquiring firm (Holdemess and Sheehan, 1985; Trautwein, 1990). This transfer includes excessive compensation in terms of increased perks to the raider (that is the managers of acquirer) after a successful business acquisition. However, there are some strong criticisms on the validity of Raider theory as in a successful bid, the raider pays a premium to the target's shareholders to acquire a controlling interest (Trautwein, 1990). It can be argued that when raider pays a premium price in a business acquisition, the business acquisition becomes costly to its shareholders and they may

not be motivated to invest in the business acquisition. Hellgren *et al*. (2011) identifies Empire Building theory as a rational choice theory as the motive of investing in business acquisition is to maximise the acquirer's management's interest and benefits in terms of strategically utilising its management's skill set to increase their perks, instead of their shareholders' interest, effectively identifying a target by the acquirer's management. Interestingly, someone can argue that the Empire Building theory has a relationship to the Agency Cost theory due to the existence of potential conflict of interest between the acquirer's managers and shareholders.

2.2.5 Process Theory

Process theory claims that an acquirer is motivated to invest in a business acquisition because of its strategic decision-making process (Duhaime and Schwenk 1985; Roll 1986; Song 1982). Strategic decisions can be explained as an outcome of thought processes that are derived from several irrational cognitive insights, entrepreneurially oriented, and politically sensitive and overly complex, decision making process between internal and external stakeholders. In the strategic decision-making process parties involved are eager to search for more information, analyse different alternatives and perform incomplete evaluations, using cognitive simplifications (Hellgren *et al*., 2011; Simon 1957). Process theory further explains that an acquirer's motivation to invest in a business acquisition is not an outcome of a rational decision. Process theory explains that an acquirer's motivation to investment in a business acquisition aims at achieving strategic alignment with shareholders' objectives to get the maximum possible returns by responding to a

changing business, industry, political or economic environment such as technological change promoting ecommerce. It can be argued that an acquirer views that investing in a business acquisition is a faster way to adapt to a changing environment rather than developing those capabilities internally. Moreover, the rationale of Process theory explains acquirers' strategic decision-making behaviour that includes analysing different investment alternatives, and risk, return and business continuity assessments.

Berggren (2003) and Hellgren *et al*. (2011) argue that the decision to invest in a business acquisition is more likely to be a result of rules of thumb, cognitive and entrepreneurial influence, sensitivity, and gut feeling than a rational and comprehensive analysis.

2.2.6 Tobin's Q Theory

Tobin's Q theory that is also referred as the Economic Theory of Investment Behavior, or the General Equilibrium theory was put forward by the economist James Tobin who was honored by the U.S. Nobel prize for his outstanding intellectual achievement in 1981. Q theory holds that a firm's investment rate is a function of its Q, where Q represents the ratio of the market value of a firm's existing shares (share capital) to the replacement cost of the firm's physical assets (replacement cost of the share capital). In other words, it is the ratio between the market value and the replacement value of a firm's physical assets. Therefore, Q theory supports that a firm's investment rate is a function of its physical assets' market value and the replacement value. When

the market value of a firm's physical assets reflets its replacements value, Q is in equilibrium and its value quals to 1. When the market value is greater than the replacement value of a firm's physical assets, the value of Q becomes greater than 1. The higher market value of a firm's assets, that is when the value of Q that is greater than 1, suggests that the firm has unmeasured or unrecorded assets. Higher Q value encourages firms to invest more in capital as the value of these firms' is more than the price they paid for the investments. Therefore, when the value of Q is greater than one (Q > 1), firms are motivated for additional investments as the return on investments exceed the cost of the firm's assets (Jovanovic,2002). On the other hand, the value of Q less than one (Q < 1) suggests that a firm's assets are undervalued by the market. When a firm's assets are undervalued by the market, it is better off selling those assets rather than using them. The ideal situation is when Q is approximately equal to one, that is when market value and the replacement value of a firm's assets are equal, meaning that the firm is in equilibrium. When Q is at equilibrium, the market value of a firm's existing shares equals to the replacement cost of the firm's physical assets (Servaes,1991). Servaes (1991) argues that a firm's investment rate should increase with its Q. Following these reasons, the Q theory explains why some firms buy other firms through business acquisitions (Jovanovic,2002). The studies by Boyan and Peter (2002) and Jovanovic (2002) on the Q theory of business acquisitions and mergers, support that an acquirer's investment in business acquisitions is a reaction to its Q factor. Findings of Boyan and Peter (2002) further confirm that investments in business acquisitions are an effective way of transferring

capital from a target with a Q value of less than 1 into an acquirer with a Q value of greater than 1, for better investments, better returns, and for an efficient management.

Previous study by Gregor *et al.* (2001) confirms that firms with a high Q score acquire firms with a low Q score. Their findings confirm that the Q score of acquirers exceeded the target's Q score in more than two-thirds of business acquisitions since 1973. In addition, empirical findings of Henri (1991) confirm that the total takeover returns, which is defined as the abnormal increase in the combined values of the acquirer and the target, are larger when the target has a low Q score and the acquirer had a high Q score.

2.2.7 Information Asymmetry (Signaling) Theory

Information Asymmetry theory explains that managers or insiders of a firm are assumed to have access to private information about the characteristics of their firm's return stream or the investment opportunities that its investors do not have access to. As a result, the choice of a firm's growth strategy indicates or signals outside investors with the information that the insiders of the firm have (Ross, 1977). Therefore, a firm's growth strategy is designed to mitigate inefficiencies in its investment decision that are triggered by the information asymmetry. It can be argued that investing in a business acquisition as an alternative growth strategy provides a positive signal to the investors as the business acquisition decision is decided independent of private information.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

There is a propensity to overinvest when information asymmetry concerns only the value of a new project. As such, there is a propensity to invest in projects which may provide negative net present values (Narayanan, 1988; Heinkel and Zechner, 1991).

Myers and Majluf (1984) argue that, when there is a gap between the information that the insiders of a firm have and the information that the investors in the firm have about the value of its assets, the equity may get mis-priced by the market. This effectively causes under-investment. It can be argued that investment in business acquisitions serves as an effective growth strategy to avoid under-investment. Furthermore, increased leverage induces equity holders to pursue riskier investment strategies such as business acquisitions to generate a greater return to cover the increased debt obligations (Brander and Lewis, 1986; Jensen and Meckling, 1976). Therefore, it can be argued that holding increased debt can motivate firms to invest in business acquisitions. However, when a highly levered acquirer decides to invest in a business acquisition of a target who is equally levered, it may not be attractive to the acquiring firm's investors, as such a move would increase the financial risk and reduce value of the firm resulting in a high probability of bankruptcy.

Based on the findings of Jensen and Meckling (1976) and Harris and Raviv (1990), it can be argued that an acquirer with low business risk tends to be motivated to invest in business acquisitions of a highly levered target. In this growth strategy, the acquirer expects to gain the benefit of a low

cost of financing on one hand and earn greater returns from its investments on the other hand. Equally, managers of high-quality firms may be motivated to invest in business acquisitions, of a highly levered target for the purpose of realising a reduced cost of capital to enhance shareholders' wealth.

As identified by Leland and Pyle (1977) and Darrough and Stoughton (1986), acquiring a target associated with a higher business and financial risk negatively affects returns of the acquirer and this ultimately results in reducing value of the merged firm.

2.2.8 Industry Life Cycle Theory

Industry Life Cycle theory explains that a typical industry goes through four distinct stages of a life cycle, introduction, growth, maturity, and decline, based on the sales growth (Mandelker, 1974; Reid, 1968; Vernon, 1966; Wells, 1966; Weston and Manisnhka, 1970). The theory explains that sales growth triggers firms to expand their production process and it creates an inducement for firms to consider investing in business acquisitions as a growth strategy. Audretsch (1989) suggests that the Industry Life cycle theory is consistent with the profit and growth maximisation behavior of firms.

When an industry reaches its maturity stage, its products become more standardised. At this stage, to be more competitive in the market, industry is forced to focus on investing in more innovative

technology. Strong financial position and established market positions motivate firms in mature industries to invest in business acquisitions to achieve technological innovation as part of their growth strategy. According to Gort (1969), industries that are in the introduction and growth phases of the life cycle identify business acquisition as a strategy to enhance research and development to avoid high investment cost of product and technology development and related high business risk.

It can be argued that firms that are in the growth stage of the industry life cycle, can identify investing in business acquisitions as an attractive, faster, and cost-effective growth strategy to expand additional capacity to meet increased market demand. This is further supported by the Economic Disturbance theory (Gort, 1969). Further, business acquisitions are attractive for industries that are at the decline stage of their life cycle as a mean of allocating their financial and managerial resources to another industry which is at the growth stage. As such, Industry Life Cycle theory explains that industries that are at the decline stage of the life cycle tend to target industries that are at the introduction and growth stages of life cycles by way of business acquisitions.

Interestingly, as identified by Audretsch (1989) more business acquisitions occur in less concentrated industries. Therefore, less concentrated industries become an attractive market for business acquisitions. Industries that are at the declining stage of their life cycle are more

concentrated. Findings of Audretsch (1989) suggest that more firms tend to be acquired in industries that are in the introduction and growth stages of their life cycle.

2.2.9 Free Cash Flow Theory

Free Cash Flow theory (Jenson, 1986), explains that more profitable firms tend to use more debt to discipline managers to effectively bond their promise to pay out future cash flows instead of investing excess cash in low-return projects, as the use of debt increases the bargaining power of debt holders and benefits in reducing the agency cost of free cash flow. As managers assign low opportunity costs to internally generated funds, they tend to use excess funds on low-yield business acquisitions as a growth strategy. Jensen (1986) argues that managers of profitable firms with excess cash are more likely to spend these cash on business acquisitions than to pay it out in dividends, even if a business acquisition generates a negative net present value. Findings of Boyan and Peter (2002) confirm that firms prefer spending their extra cash on business acquisitions to other direct investments.

2.2.10 Corporate Diversification Theory

Corporate Diversification theory suggests that larger firms tend to invest in business acquisitions as an effective and faster growth strategy, utilising excess capacity and the scale of operations they have (Singh and Montgomery, 1987; Shelton, 1988). The corporate structure of larger firms further supports the viability of investing in business acquisitions. Larger firms find it is feasible to invest

in business acquisitions for the purpose of diversifying their business and financial risk, rather than investing in organic growth to enhance returns to their shareholders.

2.2.11 Pure Diversification Theory

Pure Diversification as a theory of business acquisitions differs from the shareholder portfolio diversification, which is the Corporate Diversification theory. Corporate Diversification theory aims at reducing unsystematic risk[17] to enhance returns to shareholders by effectively spreading investments among industries. Pure Diversification theory contends that a firm that operates in a single industry having highly skilled and firm specific human capital, finds hard to transfer or mobilise its industry-specialised human capital, such as highly specialised research and development in an industry like the automotive industry or pharmaceutical industry, into a different industry, when this industry fails to generate returns. In this situation managers and other employees of the firm are at a greater risk due to their non-transferable industry specific and firm specific human capital. In such a situation, as a defensive strategy, these firms tend to diversify into another line of business through investment in business acquisitions, for the purpose of making their employees more valuable and productive by gaining new skills in various fields, in the event their initial industry declines. This approach ensures business continuity and continually

[17] The risk inherent in a specific firm or an industry is identified as the unsystematic risk. The unsystematic risk can be diversified away by investing in a range of firms and industries through effective diversification (Gaughan,2017).

generation of business returns to its shareholders by securing its specialised human capital (Marvin and William, 2005; Lang and Rene, 1994; Song, 1982).

2.2.12 Agency Cost Theory

Agency Costs theory was developed by Fama and Miller (1972) and Jensen and Meckling (1976). In Agency Cost theory, Jensen and Meckling (1976) explain two types of conflicts namely, first, conflicts of interest between equity holders and managers, and second, conflicts of interest between equity holders and debt holders in relation to alignment of corporate activities with business objectives. Existence of these conflicts results in firms incurring agency costs which, in turn, result in lower returns to their shareholders. As a solution to the misalignment of interest between managers and shareholders, and to reduce the cost of agency, offering a high level of managerial shareholding results in creating increased value with increased productivity. Under managerial shareholding, managers tend to adopt successful and productive growth strategies to maximise returns to shareholders through business acquisitions by identifying the right target, in order to reallocate corporate resources from inefficient management to discipline their motives to align with the motives of shareholders (Misra, 2009).

Managers of an acquirer are motivated to pursue a business acquisition strategy for many reasons such as to gain benefits from synergy and undervaluation of security prices, desire to restrict competition, to increase market power and consumer base, and to use corporate tax savings.

However, it is not quite clear whether such motivations of managers really create wealth or redistribute wealth between the acquirer and the target. Holl and Pickering (1988) argue that business acquisitions reward on managerial objectives rather than shareholder objectives . On the contrary, business acquisitions create value by shifting assets of a target into an efficient management (Cummins *et al.,* 2019). When a business acquisition decision is announced, acquirer's shareholders benefit any expected surplus generated by the target (Salma and Hussain, 2020; Slusky and Caves, 1991).

Further, when a firm uses more debt, shareholder - bondholder agency problems arise as the debt holders have the right to ask the firm to liquidate (Fama and Miller, 1972; Harris and Raviv, 1990; Jensen and Meckling, 1976; Myers, 1977). Jason (1986) explains that these control effects of debt are a potential determinant of the business acquisition decisions in relation to generating greater returns to debt holders to cover cost of the debts. From another perspective, Stulz (1990) argues that firms tend to use more debt as a prevention strategy, when it is under a threat of takeover. Hence, firms that are under the threat of takeover would use more debt, while firms with anti-takeover measures would use less debt (Harris and Raviv, 1991).

2.2.13 Corporate Tax Theory

Empirical findings from Modigliani and Miller in their ground-breaking papers (1958-without taxes and 1963-with taxes), explicate that given the assumptions of perfect capital markets,

equivalent risk class, no taxes, 100 per cent dividend payout ratio and constant cost of debt, the value of a firm is independent of its capital structure. When corporate taxes are introduced (1963), the value of a firm appreciates linearly with the debt-equity ratio given that the interest payments are tax exempted. Further, their findings suggest that the value of a levered firm is greater than that of an identical unlevered firm due to the favorable tax treatment of interest expense. In line with their findings, it can be argued that in a business acquisition transaction, a firm that is less levered tends to acquire a more levered firm as a target for the purpose of utilising the tax benefits of holding debt in order to maximise its returns (DeAngelo and Masulis, 1980).

On another view, DeAngelo and Masulis (1980) suggest that when a firm has more investment related tax deductions such as depreciation allowances, the firm tends to employ less debt. A firm that has more investment-related tax shields reduces its taxable income. As such, findings of DeAngelo and Masulis (1980) support the view that a profitable firm tend to target a firm with more investment-related tax shields, particularly a target that is more capital intensive, in a business acquisition transaction to benefit the investment tax credits and thereby to generate increased returns to its shareholders. Firms that are more capital intensive have significant investments in plant and equipment. These firms can claim more capital allowances (depreciation allowance) and investment tax credits when calculating their taxable income. Therefore, these firms can retain more money in the business rather than paying it out as tax. Acquiring a high capital-intensive target seems to improve earnings of an acquirer due to the advantage of using

available investment tax credits and depreciation allowances. Eventually, this reflects on increased shareholders' wealth (Bondt and Thompson, 1992).

Further, Gort (1969) suggests that incentives coming from the federal tax structure encourage a market for business acquisitions. More business acquisitions were recorded during the period when the rates of corporate and personal tax were high (Gort, 1969). However, a study by Gropp (1994) finds that firms located in geographical states with high corporate taxes have a competitive advantage in debt financing. Therefore, they use more debt whereas firms located in states with low corporate tax rates use more equity and are less levered. As suggested by Gropp (1994), a market for business acquisitions tends to happen from firms located in states with low corporate tax rates being the acquirer, to firms located in states with high corporate tax rates being the target. From another view, corporate tax savings motivate investments in business acquisitions to utilise carry forward tax losses of a target firm. Then again, if an acquirer carries a large amount of losses, taxes could be avoided by acquiring a profitable firm (Connor and Geithman, 1988).

2.2.14 Product Market Interaction Theory

Product Market Interaction theory explains the relationship between an investment strategy and either product market strategy or characteristics of products or inputs (Harris and Raviv, 1991). According to the literature that links capital structure and product - market strategy, managers attempt to maximise equity value rather than maximising profits or total firm value. Leverage

changes the payoffs to equity holders and affects the equilibrium product market strategies. Increases in leverage therefore induce equity holders to pursue riskier investment strategies (Brander and Lewis, 1986; Jensen and Meckling, 1976) such as business acquisitions in order to generate a greater return.

There could be an important linkage between product markets and financial markets (Brander and Lewis, 1986). Firms tend to use financial structure as an incentive to influence its output market. Therefore, the extent of the compatibility between the financial structure and the product market strategy would impact the debt-equity ratio. Debt-equity ratio directly affects the cost of capital, return on investments and the growth strategy of a firm when deciding on investing in organic growth or business acquisitions.

Brander and Lewis (1986) explain the "limited liability effect' of debt which is the increased use of debt by firms allows firms to have an incentive to follow output strategies that raise returns in good times and lower returns in bad times. Sometimes shareholders are willing to go even for unsuccessful riskier projects to maintain their returns. Undertaking such unsuccessful investments with negative net present values, tends to affect the output strategy of shareholders due to the limited liability effect of debt financing, when financing strategy is not congruent with the output strategy.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

Brander and Lewis explain the "strategic bankruptcy effect" of a firm's investment strategy and the financial structure that determine its possibility of being financially distressed. Firms might make output market decisions that provide chances of driving their rivals into insolvency. Brander and Lewis (1986) suggest that firms prefer to undertake capital investments that lower the marginal cost of production, attempting to commit to more aggressive positions such as business acquisitions, in the output markets aiming to establish a more competitive position in the market. This view has also been expressed by Dixit (1989). Liquidation of a firm would impose costs on its customers or suppliers in the form of inability to obtain the product or service, which in turn, transfer to the shareholders in the form of lower prices for its products. Shareholders would prefer to liquidate only when the net gain of liquidation is greater than the costs imposed on customers as the last resort. In such a situation, pursuing business acquisitions tend to help recovering such a firm from liquidation.

As Brander and Lewis(1986) explain, the optimal product market strategy of a firm depends on the output of its rivals. Accordingly, a firm as part of its investment strategy tends to invest in business acquisitions or internal growth. A firm with competitive advantage in accessing resources at a lower marginal cost than its competitors tends to gain a larger market share and profits by investing in business acquisitions to further strengthen their competitive advantage in the market. A firm that does not have a competitive advantage could be easily acquired by negotiating a bank loan commitment (Maksimovic, 1990).

Industry concentration, capacity utilisation and relative plant productivity are identified as significant determinants of the recapitalisation and subsequent plan of investments or disinvestment decisions (Kovenock and Phillips, 1997). Kovenock and Phillips (1997) suggest that firms tend to use business acquisitions as an effective defensive strategy when they face more aggressive behavior by their rival firms. Firms tend to direct their output market strategies to position their rivals into financial distress while competing with them.

Sarig (1988) argues that the use of debt strengthens the bargaining position of equity holders in dealing with input suppliers. The greater the level of debt use, the higher is the bargaining power and, or the market alternatives of its suppliers (Harris and Raviv, 1991). Such a position motivates a firm to consider more towards moving into business acquisitions as an effective defensive strategy. A highly levered firm with competitive advantage over its rivals tends to become a target for a vertical business acquisition with a backward integration[18], to generate increased returns to its shareholders.

2.2.15 Economic Disturbance Theory

Economic Disturbance theory (Gort, 1969) explains that business acquisitions occur because of economic disturbances. Economic disturbances arise when investors' uncertainty increases due to changes in market expectations. When investors develop high uncertainly about a firm's returns,

[18] When a firms acquires another firm that supplies input materials or services needed for its production is identified as a backward integration (Gaughan, 2017).

the firm gets undervalued by the market. These undervalued firms tend to become targets for acquirers for business acquisitions. Economic Disturbance theory explains that investments in business acquisitions happen as a response to macro-economic phenomenon. Historical merger waves are being identified as caused by economic disturbances on a macro level causing changes in individual expectations and an increase in uncertainty (Hellgren *et al*., 2011; Trautwein, 1990). Gort (1969) suggests that there are two conditions that need to be met in order to initiate a business acquisition transaction: First, an acquirer assesses a greater value in a target firm's assets than its shareholders. Second, the acquirer's investment surplus that is the difference between acquirer's estimated value of the target's assets and its market value, must be greater than for every other asset that the acquirer can buy within its budget. As past information is less effective in predicting future returns, economic disturbance increases variation in corporate valuations. Increased dispersion of valuation outcomes tends to place corporate assets as undervalued by the shareholders, particularly in technological based industries. These increases in valuation differences create a market for business acquisitions. Valuation differences are higher in periods of increasing security prices than in periods of decreasing security prices. Therefore, positive movements of security prices tend to increase valuation differences. Such an increase in valuation differences creates a market for business acquisitions. Conversely, negative movements of security prices tend to minimise valuation differences and discourage business acquisition activity. Expected valuation differences are limited in industries that have fewer barriers to entry and high competition. These industries are identified as a market for business acquisitions. Expected

valuation differences are high in industries that have high barriers to entry and less competition. These industries are also identified as a market for business acquisitions (Bondt and Thompson, 1992; Gort, 1969). This suggests that existence of high competition and barriers to entry motivate firms to invest in business acquisitions in such industries.

2.2.16 Market for Corporate Control Theory

Market for Corporate Control theory explains the relationship between the market for corporate control and a firm's investment decision. Market for Corporate Control has a significant bearing on the Efficiency theory. The two differences between Market for Corporate Control theory and the Efficiency theory are, first, Market for Corporate Control theory does not assume an existence of synergies between the corporate assets of an acquirer and the target, but rather between the acquirer's managerial capabilities and the target's assets. Market for Corporate Control theory predicts managerial efficiencies in relation to re-allocation of under-utilised assets of the target. Second, the Market for Corporate Control theory implies that the target's management is likely to resist takeover attempts. Market for Corporate Control theory explains that target's managerial inefficiency is the main obstacle to have an improved utilisation of their assets (Servaes, 1991).

Market for Corporate Control theory suggests that more efficient firms acquire inefficient firms with poor corporate governance (Misra, 2009; Rossi and Volpin, 2004). When managers do not manage their firm's assets to their optimum use to generate maximum value to its shareholders,

these assets get reallocated to their optimum use by way of business acquisitions. Kaplan (2007) support a positive correlation between investment in business acquisitions and increase in shareholder value.

As business acquisitions bring less disruption to the internal corporate structure of an acquirer, larger firms tend to invest in business acquisitions as part of their growth strategy (Tremblay and Tremblay, 1988). Acquirers tend to target firms whose assets are undervalued by the market aiming to realise greater returns from those undervalued assets (Scherer, 1988).

Harris and Raviv (1988) suggests that a firm changes its financing strategy as a resistance mechanism to prevent the firm being taken over by another firm. Supporting this view, Stulz (1990) finds that a takeover is negatively related to the debt-equity ratio of a target firm and the takeover premium is positively related to this ratio. Stulz (1990) suggests that changes in the fraction of voting rights controlled by a firm through the ownership structure create a market for hostile takeovers. Israel (1991) predicts that a firm that has greater potential of takeover has more debt while, a target that is more costly to be taken over has less debt. Managers of a target tend to use debt to reduce the threat of hostile takeover as a defensive strategy (Zweibel, 1996). These findings suggest that debt is a main concern for acquirers in their business acquisition decision.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

Bagwel and Zechner (1993) demonstrate that a firm's future divestiture decisions as part of its investment strategies, are influenced by its ownership structure. Their findings suggest that the ownership structure of a target and an acquirer tends to influence business acquisitions by restricting future divestiture decisions.

Further, targets that terminate takeover offers significantly increase their leverage ratios (Jenson, 1986; Stein, 1988; Stulz, 1990; Zweibel, 1996). Their results show evidence that targets with increased leverage act in the interest of its shareholders when they terminate takeover offers. Findings suggests that existence of greater leverage influences the target's managers to generate greater returns otherwise made by potential raiders. Many of the targets of failed takeovers substantially increase their leverage ratios, which could be viewed as either a signal (Ross, 1977) or a commitment (Grossman and Hart, 1982; Jenson, 1986) that the promised improvements could take place. As such, increase in leverage appears to be a part of a target's defensive strategies. When a target increases leverage, it impacts to reduce the probability that the firm will be taken over in the future. This may be due to two reasons as suggested by Titman and Wessels (1988): First, an increase in leverage tends to increase credibility of its managers' promises, which in turn increases its share price. The increase in share price impacts to increase cost of the takeover. Second, increase in leverage impacts to increase cost of the target firm because of increased bargaining power of its debt holders, without impacting its value.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

The findings of Raad and Ryan (1995) suggest that debt-equity ownership structure is important to explain the success of tender offer of a business acquisition. As they explain in the tender process, target firms tend to increase leverage during control contests, when the tender offer is opposed and, when the tender offer is unsuccessful.

Israel (1991) suggests that higher debt levels of a target generate a lower profitability for an acquirer and a lower probability of acquisition. As such, the choice of the optimal debt level considers the trade-off between the decrease in the probability of acquisition and an increase in the share of expected synergy gains for acquirer's shareholders. More interestingly, findings of Israel (1991) suggest that, first, the probability of a firm becoming a target of a business acquisition decreases with its leverage, second, acquirer's share of the total equity gain increases with the target's leverage, third, when acquisitions are initiated, target's stock price, debt value and acquirer's firm value increase and finally, during the acquisition process, target's stock price changes further with its debt level. When there is a possibility for a firm to be taken over by another firm, the target firm tends to use more debt as a defensive strategy, if it is not interested in the takeover. As the threat of takeover affects the ownership structure of such firms, the objectives relating to restructuring can be achieved by changing ownership structure of the target firm.

2.2.17 Pecking Order Theory

Pecking Order theory[19] (Myers and Majluf, 1984) suggests that managers prefer to finance projects internally due to asymmetric information transfer between managers and outside investors. Pecking Order explains that firms with high liquidity borrow less and use their excess cash to fund their investments that include business acquisitions.

As suggested by Modigliani and Miller (1958 without taxes; 1963 with taxes) under the assumptions of perfect capital markets, equivalent risk class, no taxes, 100 per cent dividend payout ratio and constant cost of debt, the value of a levered firm is greater than that of an identical unlevered firm due to favorable tax treatment derived from interest expense. When firms use more debt, they tend to invest in riskier investments like business acquisitions to generate greater returns to cover cost of the debt. Myers (1977) and Jenson (1986) have supported that capital structure has a significant influence on a firm's investment decision, so that on investment in business acquisition decision, as debt holders have a significant influence over the firm's investment decision.

[19]Pecking Order theory of financing was initially identified by Donaldson (1961) though he did not use the term "Pecking Order", in his study of financing practices of a sample of large corporations in the U.S. market. Later Myers and Majluf (1984) introduced this concept as the "Pecking Order" theory of financing into finance literature.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

2.3 Studies on Determinants of Business Acquisitions

The area of business acquisitions has been heavily attracted by many researchers for many years and, these studies have been focusing on different parts of business acquisitions. Yet, still, there is no common understanding of the determinants of business acquisition activity. Behavior of determinants of business acquisition activity has not been consistent across countries, markets, industries, time periods, products, and geographical locations. There have been several merger waves in the past, and each of them has been characterised by distinct features (Mitchell and Stafford, 2001). This section presents a review of literature on determinants of business acquisitions with special attention to the results of Erdogan (2012), Hernando *et al*. (2008), Kamaly (2007), Kastrinaki, and Stoneman (2007), Vyas *et al*. (2012), Reed and Babool (2003), and Worthington (2004). The reasons for selecting these studies for analysis are: First, some of these studies have examined the determinants of domestic business acquisitions, where Kastrinaki, and Stoneman (2007) examined the determinants of domestic mergers and acquisitions in the U.K. , Vyas *et al*. (2012) examined the determinants of mergers and acquisitions in the Indian Pharmaceutical industry, Erdogan (2012) examined the determinants of mergers and acquisitions targets in Turkey, and Hernando *et al*. (2008) examined the determinants of domestic and cross-border bank acquisitions within and across 25 members in the European Union. Second, some of these studies have examined the impact of macro-economic environment on the mergers and acquisitions, where Kamaly (2007) focused on the macro behavior when investigating trends and determinants of mergers and acquisitions in developing countries, and Reed and Babool (2003)

used the exchange rate, the interest rate and stock market prices to measure investments in mergers and acquisitions. Third, Worthington (2004) examined the determinants of business acquisitions in the Australian cooperative deposit-taking institutions.

Kastrinaki, and Stoneman (2007) have examined the determinants of domestic mergers and acquisition activity in the U.K over the period 1990 to 2004 for a sample of 780 U.K. firms using panel data analysis. The business acquisition data for their study have been collected from the Thompson One Banker data base. Their findings suggest that the firms that have low growth and are resource-rich, rather than firms that have high growth and are resource-poor, pay low dividends, have low investment opportunities or are small, tend to be attractive targets and are more likely to be acquired.

Kastrinaki, and Stoneman (2007) have assumed two-sided information asymmetry in their empirical model: first, the acquirer and the target are each assumed to have private information about respective firm values, and second, the managements of the acquirer and of the target, are assumed to be risk neutral and expected to maximise shareholder wealth. The authors have assumed a positive relationship between a target's attractiveness and its probability of being taken over by an acquirer. They have analysed survival capacity of target firms.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

The empirical study of Kastrinaki and Stoneman (2007) used the hypothesis of stock effect, order effect, rank effect (which is identified in terms of, inefficient management hypothesis and growth-resources mismatch hypothesis), firm size, dividend policy, investment opportunities, and market undervaluation. The inefficient management hypothesis has been measured in terms of target's profitability, using measures of return on equity, net income to total assets, and earnings before income and taxes. Growth-resources mismatch hypothesis has been measured using three variables: first, target's liquidity using measures of current assets to current liabilities, net working capital to total assets, and net working capital to sales; second, target's leverage using measures of total liabilities to total assets, and long term debt to market value of equity; and third, target's growth using measures of three years growth in net sales, three years growth in total assets, and three years growth in earnings per share. Firm size hypothesis has been measured using, net sales, and total assets. Dividend policy hypothesis has been measured using, cash dividends to earnings available to common shareholders. Investment opportunities hypothesis has been measured using Tobin's Q ratio which is defined as the market value of a firm divided by the book value of total assets. Market undervaluation hypothesis has been measured using, price earnings ratio (which is defined as the market price per share to earnings per share), and market to book value ratio (which is defined as the market value to book value).

Results of Kastrinaki and Stoneman (2007) suggest that a combination of stock, order, rank, and herd effects (due to information asymmetries) are driving forces influencing business acquisitions

in their sample. As suggested by per Kastrinaki and Stoneman (2007), stock effects result from an assumption that the pay-off to the marginal merger increases as the number of previous mergers increase. Order effects result from the argument that firms that engage early in merger activity gain first mover advantages and an early buyer could become a lower cost producer, and increase its product market share, if the cost savings are large enough. As such, if the acquirer increases its market share after the merger, rivals are worse off. Rank effect indicates that potential targets have different inherent characteristics, and therefore gains obtained by the acquirer is target specific. Therefore, Kastrinaki and Stoneman (2007) argue that attractive targets tend to attract larger bids while those that are less attractive tend to attract lower bids. Inefficient firms are regarded as attractive targets and their findings suggest that low profitability is a main indicator of inefficient firms. Firms with many profitable investment opportunities and having financial constraints could be attractive targets for acquirers that do not have financial constraints (Dickerson *et al*., 2002). As evidenced by Kastrinaki and Stoneman (2007), herd effect suggests that, as a business acquisition provides either efficiency gains or cost savings to the acquirer, rival firms tend to also try to respond with higher bids for the purpose of acquiring these targets.

However, Kastrinaki and Stoneman (2007) argue that the macro-economic factors are most likely to affect acquirers and targets equally and, therefore, provide little insight into merger timing and determination. Yet, it is highly questionable and debatable as the macro-economic environment has a major bearing on corporate environment and market competition.

Another study on factors influencing domestic business acquisitions by Vyas *et al*. (2012) examined the determinants of mergers and acquisitions in Indian Pharmaceutical industry. Their study attempted to identify firm specific characteristics that affect the acquirer's decision to invest in business acquisitions. They use a sample of 1120 pharmaceutical firms in India related to domestic business acquisitions, covering the period from 2001 to 2010. Their domestic business acquisition sample represents approximately 21 per cent of the total Indian pharmaceutical industry. The data for the study has been extracted from the PROWESS data base. Their study has considered nine variables as factors influencing business acquisitions. They are: first, capacity utilisation (measured using total sales to total assets), second, affiliation with multinational enterprises (measured using a dummy variable) , third, research and development intensity (measured using research and development expenditure to net sales), fourth, advertisement intensity (measured using advertisement expenditure to net sales), fifth, Tobin's Q (measured using the ratio of market value of a firm's financial claims to the replacement value of capital), sixth, leverage (measured using total borrowings to total assets), seventh, size (measured using natural log of the net sales) , eighth, profitability (measured using gross profit to net sales) and, ninth, age of the firm (measured using the difference between the year in the study and the year of incorporation). They have analysed the data using statistical method of cross-tabulations and Logit analysis for pooled cross-sectional data. They have used a dummy variable to capture the dependent variable, capturing a firm with merger and acquisition event equals 1 and otherwise equals to 0.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

Indian pharmaceutical firms have started moving for business acquisitions including acquisitions of foreign pharmaceutical firms as a competitive strategy, more specifically, aiming to establish competitive advantages in the pharmaceutical industry by increasing their research and development expenditure, investing in new technologies, new products, enhancing firm size to achieve higher economies of scale. Products prices of Indian pharmaceutical firms are highly regulated. In addition, a study by KPMG (2006) indicates that the main motives of Indian pharmaceutical firms to pursue foreign business acquisitions are to; improve global competitiveness, move up the value chain, create new markets and entry into new markets, increase product portfolio, acquire assets including research and contract manufacturing firms, in order to boost their outsourcing capabilities, and new products, consolidate their market shares and compensate for continued sluggishness in their home market. Findings of Vyas *et al*. (2012) suggest that leverage is lower for merging firms than non-merging firms. They have found a negative, but statistically not significant association between investments in business acquisitions and the use of leverage. Their finding in relation to leverage, is consistent with the Dessyllas and Hughes (2005). Their results explain that cash rich firms are more interested in investments in business acquisitions as growth strategy. In addition, their findings support that more profitable firms are interested in investments in business acquisition.

Erdogan (2012) has examined the determinants of mergers and acquisitions targets in Turkey. They have used a sample of 37 merged and acquired firms and 173 non-merged and non-acquired

firms, selected from the top 500 industrial enterprises in Turkey from 2004 to 2010. Erdogan (2012) has used a statistical model based on a segmented time-dependent Cox regression to examine the association between financial variables and, mergers and acquisitions. This statistical method is similar to the multiple regression analysis.

Erdogan (2012) has used eight independent variables in their statistical model and they are: first, pre-tax profit margin (measured using net profit before taxes to net sales), second, return on equity (measured using net profit before taxes to shareholder' equity), third, capital productivity (measured using gross value added to total assets), fourth, labour productivity (measured using gross value added to number of employees), fifth, size (measured using total assets), sixth, capital intensity (measured using total assets to number of employees), seventh, export intensity (measured using exports to net sales) and, eight, debt ratio (measured using total debt to total assets).

Findings of Erdogan (2012) suggest that a firm tends to be attractive for an acquirer when it has a lower pre-tax profit margin and a lower debt ratio. These finding are in line with the inefficient management hypothesis which suggests that inefficiently managed firms (firms with lower pre-tax profit margins) whose managers fail to maximise shareholder wealth are more likely to become targets for business acquisitions (Manne, 1965; Palepu, 1986; Brealey and Myers, 2010).

The findings of Erdogan (2012) explain that, when a firm has lower debt, it becomes more attractive to an acquirer for a business acquisition. Firms with high unused debt capacity are regarded as attractive targets for business acquisitions as their low leverage reduces the risk of default and increases the debt capacity of the acquirer (Palepu, 1986; Stulz, 1988). In addition, when a firm has low leverage, it provides an opportunity for a leveraged buyout transaction. As explained by Erdogan (2012), an acquirer has the potential to employ additional debt when control is gained of a target with low debt levels. However, Ucer (2009) suggests that target firms tend to employ more debt in the year before acquisition.

As suggested by Song and Walkling (1993) firms with increased liquidity tend to become attractive targets for business acquisition. Cash rich firms become more attractive targets for business acquisitions as their excess liquidity supports the acquirer's ability to finance the business acquisition with the target's own resources. Firms with liquid financial resources become more attractive targets for business acquisitions (Palepu, 1986). As suggested by Palepu (1986) a firm that has growth opportunities but has a poor liquidity position becomes an attractive target for an acquirer with slow growth opportunities or that operates in a mature industry, and with excess liquidity. In contrast, a firm that has limited growth prospects but has high liquidity becomes an attractive target for an acquirer with low growth opportunities and high liquidity.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

Pasiouras *et al.* (2004) support the contention that target firms that are successfully acquired have lower management efficiency and lower leverage than non-acquired firms. Basu *et al.* (2008) find that firms acquire targets with lower operating efficiency, larger size, lower leverage, and greater liquidity.

Hernando *et al*. (2008) have examined the determinants of domestic and cross-border bank acquisitions within and across 25 members in the European Union from 1997 to 2004. They have used multinomial logit model to validate six possible characteristics that a bank possesses to be identified as an attractive target. The six possible characteristics are: operating performance, capitalisation (that is the leverage), growth, market power, other target characteristics, and time fixed effect. Their study has used "probability of a bank being taken over" as the dependent variable. They have measured operating performance using: cost-to-income ratio, the net interest margin (which is the interest spread between a bank earns on its assets and pays on its liabilities, measured in terms of net interest income as a percentage of earning assets), and the return on average equity (which is the overall returns to shareholders). Capitalisation of a target has been measured using the ratio of equity to total assets. The proxy variables of annual growth rate of target's assets, and annual growth rate of the target country's gross domestic product have been used to measure the growth opportunities. The ratio of the target bank's total assets at year-end has been used to measure the bank size or the market power. Hernando *et al*. (2008) have collected

the business acquisition data from the Mergers and Acquisition Deals Module of Thomson One Banker.

The findings of Hernando *et al*. (2008) indicate that poorly managed banks, in other words banks with a high cost-to-income ratio, and larger banks are more likely to be acquired by other banks in the same country. This result supports the Efficiency theory as efficiency gains are more likely to be achievable for underperforming banks (Hernando *et al*., 2008). Hernando *et al*. (2008) found that the overall profitability results support the Efficiency theory as acquirers look for poorly performing targets with operating expense savings opportunities. Hernando *et al*. (2008) found that the banks having lower profitability or inefficiency are more attractive for business acquisitions as these underperforming banks provide greater opportunities for improvement. Interestingly, Hernando *et al*. (2008) found that domestic acquirers were in a better position to assess why those target banks were underperforming and the related risk before making a business acquisition decision than a foreign acquirer. However, they found that this result does not hold for listed banks. Hernando *et al*. (2008) found that there is a greater chance of being a target in a cross-border deal for banks that are listed on the stock market. In addition, they also found that the banks operate in a more concentrated markets are less likely to be acquired by other domestic banks but are more likely to be acquired by the banks in other European Union countries. Their results suggest that larger banks are more likely to become targets and be acquired by other banks in the same country, probably reflecting that acquisition of large banks is more beneficial to achieve

product diversification and penetration in new market segments. When banks are listed, their business information is widely available to the public. Their results support that the listed banks are more likely to become targets and be acquired, regardless of the bank size. In addition, Hernando *et al*. (2008) findings indicate that the less efficient domestic banks that are less likely to become listed banks are being acquired cross-border. Their results indicate that the probability of inefficient and less profitable domestic banks being acquired by a foreign bank is low in cross-border deals.

Hernando *et al*. (2008) suggest a positive relationship between a bank's capitalisation ratio (that is the equity to total assets) and the likelihood of being a target. When bank acquirers face regulatory pressure to increase capitalisation ratio, they tend to look for highly capitalised targets as a mean to achieve regulatory compliance. Hernando *et al*. (2008) explain that high capitalisation is an indication of inability of a bank to diversify assets. Therefore, more capitalised banks tend to be more attractive targets for better diversified acquirers. When banks have high capital ratios and managers of these banks experience less pressure to generate high earnings, they tend to underperform and operate below their profit potential. Conversely, when managerial efficiency is driven by bank's capitalisation, better capitalised banks with better managerial performance become less attractive to potential acquirers as the potential synergy gains are smaller from a better management in accordance with the Efficiency theory of business acquisition. In addition, as suggested by Hannan and Pilloff (2007) acquirers prefer highly leveraged (that is poorly

capitalised) targets as these targets enable them to maximise the magnitude of post-acquisition performance gains relative to the cost of achieving those gains. Again, this is in line with the Efficiency theory. When target banks have a relatively high capitalisation (that is low leveraged) for a given asset size, the purchase price premium of the acquisition tends to be generally lower and the post-acquisition performance gains tend to be relatively smaller.

As explained by Hernando *et al*. (2008), banks that are operating at a high growth phase become more attractive targets, as the potential gains arising from improved management post acquisition are likely to be larger in targets that operate in expanding markets. This is in line with the Industry Life Cycle theory of business acquisitions. This explains that the targets with high growth rates are more likely to be acquired (Cheng *et al*., 1989; Hannan and Rhoades, 1987). Conversely, targets that operate at a slower growth phase, can also become more attractive to acquirers when these acquirers aim to increase post acquisition growth rate (Moore, 1996; Pasiouras *et al*., 2007). This is again consistent with the Industry Life Cycle theory.

Regulators tend to support integration of smaller banks with bigger banks when these smaller banks struggle to generate competitive returns with their high overhead costs particularly to its customers and as a mechanism to avoid poorly performed banks being insolvent. When acquirers intend to gain economies of scale, efficiency gains and market power, acquiring a larger bank may be more attractive rather than acquiring many smaller banks provided acquirer can handle the post-

acquisition integration efficiently (Hannan and Pilloff, 2007; Lanine and Vander, 2007; Pasiouras *et al.*, 2007).

Banks that experience increased concentration tend to become more attractive targets for a potentially larger bank when the acquirer's motive is to further enhance their competitiveness and establish market power. This behaviour is in line with the Monopoly theory of business acquisitions. However, as this behaviour leads to further market concentration and ultimately to create a monopolistic situation, antitrust authorities may not support these kinds of business acquisitions. As criticised by Hannan and Pilloff (2007), application of Monopoly theory is questionable for domestic and foreign acquirers as banking industry is a highly regulated industry.

When managers of a target bank assess that they would lose their job positions together with related employment rewards, they tend to oppose a business acquisition proposal from an acquirer even if the deal would benefit its shareholders. This behaviour is consistent with the Agency Cost theory and this is explained as a situation where interest of managers is not aligned with the interest of their shareholders and, as a result shareholder bear the cost of losing the acquisition bid. However, as noted by Hadlock *et al*. (1999) when managers of a target bank hold a greater per centage of share ownership, potential acquirers find it hard to take over as the target managers do not expect to leave the bank post business acquisition.

Another interesting study by Kamaly (2007) has investigated the trends and determinants of mergers and acquisitions in developing countries in the 1990s. In his study, Kamaly (2007) has focused on the aggregate or macro behavior of business acquisitions as opposed to investigating on a micro level of business acquisition activity.

Kamaly (2007) examined completed business acquisition data for 60 developing countries from 1990 to 1999 where the target has been from a developing country with a population greater than one million. Kamaly (2007) has used Thompson Routers SDC Platinum Worldwide Mergers and Acquisitions Database to collect the business acquisition data for his study. Kamaly (2007) applied dynamic panel regression model to measure the macro-economic determinants of business acquisitions. Kamaly (2007) used the ratio of total mergers and acquisitions to total gross domestic product as the dependent variable. The independent variables used to measure the determinants of business acquisitions are: weighted average bond yield in the G7 countries, the lagged change in the Standard and Poor 500 Index, and the ratio of the sum of imports and exports to the gross domestic product. Bond yield has been included to capture long-term benefit arising from business acquisition activity as investing in business activity is treat as a long-term commitment. In addition, the ratio of the sum of imports and exports to the gross domestic product has been included to identify significance of the foreign direct investments as it has been treated as a direct measure of the openness of a country's economy. In addition, he also used a lagged variable to measure the impact of exchange rate as change in exchange rate has a direct impact on investments

in foreign direct investments. As Kamaly (2007) has explained, investing to build a new product line takes longer time and commitment for a firm, while acquiring a product line that has already been well established is a matter of transfer of ownership from domestic to foreign.

Kamaly (2007) found a statistically significant positive relationship between the ratio of the sum of imports and exports to the gross domestic product and investments in business acquisitions. Kamaly (2007) explains that this is a representation of the degree of openness of an economy to attract foreign direct investments. When local currency is depreciated, its impact directly reflects on the exchange rate. As a result, foreign firms find local firms are cheaper to buy and they tend to establish control of these local firms through the stock market by buying their shares. Results of Kamaly (2007) suggest that this behavior has been further encouraged by the depressed domestic demand in Asia and the underdeveloped stock markets during financial crisis in 1990s. As Kamaly (2007) explains, during 1990 to 1999, Asian countries have experienced an increase in business acquisitions transactions by foreign firms predominantly establishing control by purchasing shares of local firms through stock markets and gaining control of those firms, for the purpose of supplying products to meet the increased demand in foreign countries like the U.S.A. The findings of Kamaly (2007) suggest a negative relationship between international interest rates and investment in business acquisition activity and, a positive relationship between the Standard and Poor 500 (S&P 500) index and the business acquisition activity, in developing countries. In addition, findings of Kamaly (2007) suggest that the market openness and transparency have a

greater effect on investment in business acquisition activity. Nevertheless, he found that this impact is not significant quantitatively. However, he did find that the depreciation of a country's domestic currency has a significant positive influence on investment in business acquisition activity. The findings of Kamaly (2007) is further supported by previous studies of Benzing (1992), Clark *et. al*. (1988), Melicher *et.al.* (1983), Irina (2021), Nelson (1959), Nelson (1966), Poloncheck and Sushka (1987), Shughart and Tollison (1984), and Weston (1961). These studies have found that the variables of the cost of capital and stock prices are positively influencing the aggregate business acquisition activity. These findings support the Expectation and the Economic Disturbance theories of business acquisitions. As per the Expectation theory, positive expectations about the future in terms of strong economic growth and increased share prices, encourages acquires to invest in business acquisitions. When stock prices are rising, the cost of capital goes down and acquirers have access to a greater value for potential targets (Kamaly, 2007). In relation to Economic Disturbance theory, business acquisitions become more attractive for acquirers during an economic boom as the value of a target appreciates because of increased sales and production capacity due to the increased market demand. As a compliment to the Economic Disturbance theory, during a period of high growth during an economic boom the Expectation theory induces stock prices to rise. As a result, investment in business acquisitions becomes more attractive and rises.

In addition, the interest rate affects investments in business acquisitions directly through the purchase price or the cost of the business acquisition. When interest rates are rising, business acquisitions can become costly to an acquirer. Higher interest rates discourage investments in business acquisitions for acquires who want to finance acquisitions using borrowings due to high cost of capital. Therefore, there is a negative relationship between business acquisitions and the interest rate in situations when acquires want to settle the deal value with borrowings. When interest rates are rising during a credit crunch[20], acquirers find hard to borrow money from financial institutions as lending institutions attach a high risk for transactions like business acquisitions. When interest rate rises, the cost of capital rises too (Benzing, 1991). Borrowing is more expensive at higher interest rates. Therefore, during a period of a credit crunch, investing in business acquisitions becomes less attractive and discourages acquirers. As there is a negative association between change in interest rate and stock prices, any change in the interest rate directly reflects on stock process. However, as per Free Cash Flow theory, cash rich acquirers find investing in business acquisitions attractive due to the associated low cost of capital to them. As a result, the cost of business acquisition becomes cheaper for such acquirers. When interest rates are rising, acquirers tend to acquire targets by buying their stocks. Therefore, the impact of rising interest rates on investments in business acquisitions becomes complex (Kamaly, 2007). The finding of Aguiar and Gopinath (2005) using firm level business acquisition data from five East Asian

[20] An unexpected reduction in the general availability of loans, or a sudden tightening of the conditions required to obtain a loan from banks, independent of official interest rates increases, is identified as a credit crunch. (Benzing, 1991).

countries from 1981 to 2001, indicates an increase in business acquisitions activity caused by the liquidity crunch at that time. Rise in interest rate creates a buyer's market for cash rich acquirers motivating them for investments in business acquisitions (Irina, 2021; Kamaly, 2007; Marsh, 1982; Taggart, 1977). When interest rate rises cash rich firms can target undervalued assets for business acquisitions (Kamaly, 2007). Interestingly, making the situation further complex, when domestic investors find it difficult to access credits in terms of loans, affordable foreign investors seize these firms by way of investments in business acquisitions (Visic and Skrabic, 2010). The impact of interest rates on investments in business acquisitions varies according to the means (as to using borrowings or internally generated excess cash) by which the business acquistion deal is settled (Visic and Skrabic, 2010).

Empirical investigation on factors affecting international mergers and acquisitions by Reed and Babool (2003) have used exchange rate, interest rate and stock market prices to measure investments in mergers and acquisitions activity. They have investigated the aggregate business acquisition activity in countries of the United States, Australia, Canada, France, Germany, Japan, and the United Kingdom from 1987 to 1999. They have collected the data for aggregate business acquisitions from the World Investment Report 2000 of United Nations Committee on Trade and Development (UNCTAD). They have collected the data for exchange rate and government bond yields from a data base from the International Monetary Fund. They have collected the data for stock market indexes from major stock exchange in each country: S&P 500, All Ordinaries Index,

TSE 300, CAC 250, DAX, TOPIX, and FTSE 100. Reed and Babool (2003) have used business acquisition differences between two countries as the dependent variable. The purpose of Reed and Babool (2003) study was to investigate the factors that explain outward and inward business acquisitions for a country in contrast to total foreign direct investment. Reed and Babool (2003) have examined the effects of exchange rate, interest rate and stock market prices on the aggregate cross-border mergers and acquisition activity within the food, beverage, and tobacco industry using regression analysis. The statistical model used by Reed and Babool (2003) has assumed that a firm accepts an investment proposal when the Net Present Value (NPV) is positive given that there is capital constraint.

The findings of Reed and Babool (2003) suggest that the three variables, exchange rate, interest rate, and stock prices, have a significant impact on variations in cross-border business acquisition activity by country. Their findings suggest that the exchange rate particularly has a significant bearing on outward cross-border business acquisition activity. This supports the argument that price effects are important in determining outward investment flows. Reed and Babool (2003) have found that the stock market index is positively influencing inward and outward cross-border business acquisition activity. This means, that when stock market index increases, inward and outward business acquisition activity increase. Reed and Babool (2003) have further found that the interest rate has a negative impact on the inward and outward cross-border business acquisition activity. Interestingly their results indicate that when interest rate increases, business acquisition

models with outflows have been decreasing by about the same per centage as decrease in interest rates.

Appreciation of a country's currency creates a favorable condition for investments in business acquisitions (Erel *et al*., 2010; Reed and Babool, 2003). Decrease in exchange rate creates a market for investments in cross-border business acquisitions. Kamaly (2007) has found a strong positive relationship between depreciation of domestic exchange rate and investments in business acquisitions. As suggested by Reed and Babool (2003) cross-border business acquisition activity is quite sensitive to exchange rate changes as an appreciation of a country's currency creates a favorable condition for the acquiring country to purchase foreign firms through cross-border business acquisitions. A depreciation in acquirer's country's exchange rate tends to make the cost of business acquisition of foreign firms more expensive. However, a greater stock market value tends to reduce the capital constraints of the acquiring firm. The study by Vasconcellos and Kish (1996 and 1998) have found that the present and future exchange rates are important as the values over time are repatriated to the acquiring firm's home country. Most of these studies have analysed impact of the exchange rate on cross-border business acquisitions. However, the exchange rate is an important variable for domestic firms whose products or services are traded in the global market. A weaker Australian Dollar to United States Dollar exchange rate encourages domestic firms' exports and generates additional purchasing power for them and increases shareholders' wealth. For this reason, this study uses exchange rate as a macro-economic variable to assess its

impact on the business acquisitions of acquirers who are listed on the Australian Securities Exchange.

As suggested by (Reed and Babool, 2003), a firm's stock price is an important factor impacting investments in business acquisitions, as the business acquisition can be funded through a combination of borrowings and equity that comes from the acquiring firm's market capitalisation. Acquirers obviously use some of their increased market capitalisation to purchase foreign firms. As explained by (Reed and Babool, 2003), when an acquirer tries to purchase a firm with a higher stock market index, it obviously increases the purchase cost of business acquisition. Yet it also indicates a brighter economic prospect for the country and acquirer can become a more profitable firm once it is acquired. In addition, findings of Kaplan (2007) suggest that, when stock prices are at a historic low, it creates a buyer's market for business acquisitions. Firms with strong financial position with a solid balance sheets tend to target undervalued stocks for business acquisitions.

Vasconcellos and Kish (1996) in their empirical investigation on business acquisitions between the U.S.A. and Canadian firms, have used the difference in business acquisition values for two countries as a function of the exchange rate, interest rate differential, and the value of stock price indices for the countries in their regression models. Results of Vasconcellos and Kish (1996) suggest that the differences in interest rates and the price-earnings ratio in each stock market are important explanatory variables. Vasconcellos and Kish (1998) have extended their investigation

on business acquisitions between the U.S. firms and firms from four European countries, Germany, Italy, the United Kingdom, and France. They have found that the stock market prices, and the interest rate differential tend to be major determinants of cross-border business acquisitions between the U.S. firms and firms from four European countries, Germany, Italy, the United Kingdom, and France. However, their results suggest that impact of the exchange rate has not been consistent in its relationship to business acquisitions activity. Findings of Reed and Babool (2003) implies that acquirers tend to acquire targets in countries with a strong currency as the acquirers believe that a strong currency indicates positive future economic prospects for the country.

The regulatory environment and the monetary policy of a country have a key role in setting up investor and market confidence in promoting and attracting investments in business acquisitions. Moreover, macro-economic environment has a strong bearing on business acquisitions as the determinants of business acquisitions can behave differently in different time periods due to changes in the macro-economic, legal, regulatory and political environments, industry classifications and the effect of globalisation (Bondt and Thompson, 1992; Gort, 1969).

Worthington (2004) pioneered the studies in examining the determinants of business acquisitions in the Australian credit unions. Worthington (2004) in his study on the determinants of merger and acquistion activity in Australian cooperative deposit-taking institutions, has investigated validity of some firm specific determinants: capital structure (measured as the ratio of reserves to total

assets), asset quality (measured as the ratio of provision for doubtful debts expense to total loans), management ability or the technical efficiency, profitability (measured as the ratios of net interest income to total assets and total expense to total income), liquidity (measured as the ratio of prime liquid assets to total assets) and total assets, within Australian credit unions over three years from 1992/93 to 1994/95. The variables Worthington (2004) applied to represent various aspects of credit union performance are comparable to those used by Thompson (1997) in an analysis of mergers of the building socities in the U.K. Worthington (2004) has collected the data for his investigation from the Australian Prudential Regulation Authority and its immidiate predecessor the Australian Financial Institutions Commission. He has analysed the data using a pooled time-series, corss-sectional mutinomial logit regression model with an assumption of common effects.

Credit unions have operated within a well-defined institution specific, regulatory sub-sector of the Australian financial system. Following the financial deregulation and promotion of open capital markets between 1973 to 1985, Australian credit unions have faced a competitive environment for their survival. As a response to the competitive market environment followed by the financial deregulation, business acquisition activity has reported an intense increase. The main purpose of cooperative institutions is to maximise service to their members rather than maximising profits as opposed to other Australian commercial financial institutions whose objectives are to maximise profit and shareholders' wealth. After the financial deregulation, Australian credit unions have

been constrained by the need to function in a highly competitive financial market. Some of the motives of financial deregulation have been to improve operating efficiency and financial viability.

Worthington (2004) as part of his study, investigated the characeristics of credit unisons that are likely to impact on decisions concerning business acquistion activity. Credit unions in Australia operate on a cooperative basis predominatly borrowing from and providing finance to their members. As credit unions cannot acquire shares in another financial institution, merger of a credit union must be agreed by both parties as such a hostile take over is difficult and impossible to achieve for a credit union (Brown *et al*., 1999; Worthington, 2004). In addition, liqudation of credit unions in Australia is very rare as they exist to serve their members. When a credit union experiences a financial distress it is more likely to consider merging with another credit union for their survival in the competitive market with the best interest of its members. In a business acquistion decision, capital structure of a credit union is a critically important factor as they are highly levered and, as a consequence that creates a potential for failure in a situation where there is a sudden withdrawal of its deposits by its members. These credit unions have received the support from the regulators to find an acquirer.

The results of Worthington (2004) suggest that asset size and quality, management ability or the technical efficiency, profitability and liquidity are significant determinants of business acquisition activity in Australian cooperative deposit-taking institutions. Credit unions are owned and

operated by memebrs and their objectives are to maximise servcies to its members. The findings of Worthington (2004) cannot be generalised into the determinants of business acquisitions of Australian listed firms as cooperative deposit-taking institutions are not for profit oriented and they exist in business to service its members. Therefore, the findings Worthington (2004) are less relevant to firms that are listed on the Australian Securities Exchange as these firms operate for profit purpose and commecial oriented. There is no other study that investigated the factors influencing business acquisition decisions of firms in Australia other than the study by Worthington (2004).

2.4 Regulatory Framework in relation to Investments in Business Acquisitions in Australia

Business acquisitions are identified as primarily a random walk process (Shughart and Tollison, 1984). Disparities in the legal and regulatory environment across countries impact strongly on the development of capital markets, corporate ownership structure and cost of capital (Bhattcharya and Daouk, 2002; Porta *et al*., 1997; Porta *et al*., 1998; Rossi and Volpin, 2004). This section presents the regulatory environment in relation to business acquisitions in Australia.

Business acquisitions are identified as one of the leading growth strategies that involve a large amount of financial outlay. Business acquisitions allow firms to grow fast and become large. Business acquisitions lead to a rise in concentration among firms and industries. As a result increase in business acquisition activity tends to impact on misallocation of recourses, possible

abuse of market power, political and social impact of concentrated economic strength in larger firms (Levine and Aaronovith, 1981). In contrast, rising concentration as a result of growth of major firms in an industry tends to achieve efficient production, lower costs and lower prices to consumers (Tremblay and Tremblay, 1988).

Anti-trust legislation and takeover laws play an important role with respect to business acquisition activity. A larger volume of business acquisition activity has been identified in countries with stronger shareholder-investor protection and with better accounting standards as they reflect corporate governance and ensure transparency.

Stronger shareholder protection tends to promote attraction of external capital at reduced costs. Targets have been found to be more from countries with poor investor protection and acquirers have been found to be more from countries with stronger investor protection. Therefore, the markets with stronger investor protection tend to be identified as active markets for investments in business acquisitions (Alice *et al.*, 2018; Dicu *et al*., 2019). Efficient and competitive markets for business acquisitions are built with stronger protection of domestic investors (Rossi and Volpin, 2004).

The structure of the governance regime and the corporate control of each country is not the same. Due diligence process relating to business acquisitions varies across countries. Mostly countries

such as U.S.A., Canada and U.K. have a pre-merger notification process, compliance to lengthy legislatives, time periods and comprehensive information requests (Gaughan, 2017). Business acquisition notification process in Australia is a more informal compared to the other countries such as U.S.A., Canada and U.K. Due to the variation in legal and regulatory environment in each country, findings of studies on the determinants of business acquisitions done largely in countries such as U.S.A., U.K. and European Economic Region cannot be generalised and applied to Australian context.

Part 5.1 and the chapter 6 of the Corporations Act 2001 associated regulations and statutory instruments including the government policy as issued by the Australian Securities and Investment Commission, Takeovers Panel which is a specialist administrative tribunal with broad statutory powers, and the listing rules of the Australian Securities Exchange regulate the business acquisitions of listed firms in Australia. In addition to these regulatory requirements, business acquisition activity must adhere to the Australian competition anti-trust legislation administered by the Australian Competition and Consumer Commission, foreign investments related legislations administered by the Foreign Investment Review Board, and taxation related legislation administered by the Australian Taxation Office. Further, industry specific legislation is required to be adhered in undertaking business acquisition activity particularly in sensitive sectors such as banking, aviation, media, and gaming sectors.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

The financial deregulation and liberalisation have positively impacted on developing a stronger capital market in Australia. The financial deregulation in Australia commenced in early 1970s. Australia had a highly regulated and closed financial system at the beginning of the 1970s. Interest rates were controlled by the authorities. Strict limits were in placed on bank lending. Financial institutions were required to buy government securities at non-market prices. The capital inflow and particularly the capital outflow of the country were tightly controlled by regulators, aiming at managing the monetary policy and its impact on the economy, developing a captive market for government securities, allowing financial stability of the government , controlling risk exposure of banks, prioritising availability of credits to priority areas of the economy such as housing and farming, maintaining a stable exchange rate, and controlling the flow of domestic savings offshore (Battellino and McMillan, 1989; Edey and Gray, 1996; Gizycki and Lowe, 2000; Gordon, 1999; Gruen and Shrestha, 1990). The process of financial deregulation in Australia was mostly completed in 1986. From 1986, there have been continued changes to the laws related to the financial sector to ensure that the sector remains dynamic and competitive (Ballantyne *et al*., 2014).

There have been extensive controls put in place to realise the objectives set by the financial deregulation. Some of these key controls were: controls on the interest rates that banks could charge on loans and pay on deposits; reserve and liquidity ratios requirements for banks were introduced, the overall quantity of loans that banks are allowed to maintain was regulated; financial

institutions were classified to be specialised in areas of trading banks lent to businesses, savings banks lent to households - almost entirely for housing, and finance companies lent for more risky property loans and consumer credits; all foreign exchange transactions were closely controlled particularly in relation to capital transactions which were individually approved; Australians were not allowed to make portfolio investments offshore aiming at retaining domestic savings for domestic investment; and the exchange rate was tightly controlled. When many other developed economies moved to a floating exchange rate after the breakdown of the Bretton Woods arrangements in the early 1970s, Australia was not part of that process (Battellino and McMillan, 1989; Edey and Gray, 1996; Gizycki and Lowe, 2000; Gruen and Shrestha, 1990).

Australia moved away from the highly regulated financial system commencing 1970s for four main reasons. They are: First, as the regulatory framework before 1970s was heavily focused on the banks, the controls related to banks started weakening making it difficult for banks to respond to customer needs. As a result, banks experienced losing their market share rapidly, for example, by the early 1980s their market share were fallen to 40 per cent, compared with 70 per cent in the early 1950s. Second, the controls put on the financial system were ineffective as new unregulated intermediaries appeared in the market to provide finance. Third, the Australian dollar exchange rate was impacted by the increase in international capital flows following the breakdown of the Bretton Woods arrangements, making it difficult to manage domestic liquidity and domestic financial conditions. Fourth, the financial system at that time was not capable to serve creditworthy

borrowers by providing credits, there were wide interest rates spreads, and the system was quite inefficient with little innovation. The regulators revisited the then highly regulated environment in the financial system in 1970 aiming at introducing a regulative environment that supports business growth, economic growth, and competitive position of Australia at large. (Battellino and McMillan, 1989; Edey and Gray, 1996; Gizycki and Lowe, 2000; Gruen and Shrestha, 1990).

At the commencement of deregulating the financial system, the regulators revisited the financial regulatory environment and started introducing changes to the regulatory environment in Australia. The key changes introduced in the process of financial deregulation were: First, interest rate controls on banks were removed from 1973. This has resulted an increase in credit supply by banks. Second, additional reforms were introduced to free up interest rates on government securities allowing the market to set the interest rates. Third, the authorities decided to float the exchange rate on 9 December 1983 allowing the exchange rate to vary with the open market forces of supply and demand. This was successful in attracting foreign capital flows on domestic liquidity. Fourth, regulators allowed foreign banks to enter the Australian financial system aiming to attract foreign portfolio investments, and eased the processes for establishing new domestic banks, aiming at introducing an increased competition in the Australian financial sector (Gordon, 1999).

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

Financial deregulation, liberalisation and internationalisation in Australia had led to major improvements in the operation of the financial system, and to become more efficient and more responsive to the financial needs of Australia's economy, particularly in terms of financial market efficiency and macroeconomic stabilisation. This had led to the development of new markets and innovative financing techniques, with a more diversified and resilient financial sector. Since the financial deregulation, liberalisation and internationalisation in Australia, authorities have been continued to introduce changes to the laws under which the financial sector operates, to ensure that the sector remains dynamic and competitive (Battellino,2007).

In addition, the Australian Securities Exchange is one of the world's leading financial exchange markets. Australian Securities Exchange is a top ten global securities exchange by value and the largest interest rate derivative market in Asia. It is a world leader in raising capital, consistently ranking among top five exchanges at global level with a total market capitalisation of around $2 trillion. It operates in a world class regulatory environment, meeting the highest global standards. Corporations from Australia and around the world engage with the Australian Securities Exchange to manage corporate risk and to raise capital to grow. The certainty of its clearing and settlement activities underpins the systematic stability of the Australian economy to stand as a world leading and competitive economy.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

Antitrust policies make business acquisitions difficult in industries with high concentration (Gort, 1969). Access to new product and geographical markets makes easier, faster, and stronger with the global market compared to internal growth. Underdeveloped stock markets have more room to grow. Investors target to invest in firms by way of business acquisitions in underdeveloped stock markets as they have more room to grow (Kamaly, 2007). Business acquisitions in industries that are highly regulated generate lower value to shareholders than acquisitions in non-regulated industries (Campa, 2002).

It is extremely hard to identify the optimum business acquisitions policy for any market, industry, or country particularly with the globalisation and internationalisation of markets. Identification of right policy for business acquisitions contributes to a productive and competitive Australian economy to establish and maintain its competitive advantage in the global market.

2.5 Factors Influencing Business Acquisition Decision – Acquirer Related

Literature has found a dynamic relationship between investment in business acquisitions and acquirers' characteristics. This section reviews empirical studies and formulates the hypotheses for the three acquirer related determinants of the business acquisition decision: H_1 – H_3 related to RQ1: 1) profitability; 2) leverage; and 3) liquidity. H_4 related to RQ2: the impact of acquirer's industry classification on RO1. H_5 related to RQ3: the impact of the time when the business acquisition occurs, on RO1.

2.5.1 Profitability

Profitability is expected to influence the business acquisition decision of an acquirer. When an acquirer experiences an increased sales growth, its buying power strengthens with the increased earnings. Increased buying power encourages potential acquirers to invest in business acquisitions to expand production capacity to meet increased customer demand (Kamaly, 2007). In line with the Industry Life Cycle theory (Vernon, 1966 ; Wells, 1966), sales growth triggers firms to expand their production capacity and this creates an incentive for such firms to invest in business acquisitions. Firms operate in a mature industry with a strong financial and established market position, tend to invest in business acquisitions as a mean of achieving technological innovation. (Gort, 1969; Mandelker, 1974; Reid, 1968; Weston and Manisnhka, 1970). As explained by the theory of Corporate Diversification, larger firms tend to invest in business acquisitions as a growth strategy to utilise the excess capacity they have (Singh and Montgomery, 1987; Shelton, 1988). As suggested by Singh and Montgomery (1987) and Shelton (1988), larger firms tend to find easier to invest in business acquisitions due to their strong financial position and scale of operations. Audretsch (1989) suggests that growth in sales encourage firms to consider investing in business acquisitions as a growth strategy to expand its production. DeAngelo and Masulis (1980) suggest that profitable acquirers tend to target capital intensive firms for business acquisition transactions to generate increased returns to their shareholders.

Acquires who have faster growth rates provide better returns to shareholders by investing in business acquisitions (Holl and Pickering, 1988). From another view, acquirers with relatively low-price earnings ratios tend to be more successful in enhancing shareholder value than acquirers with high price earnings ratios in business acquisitions. This is due to the fact that their shares have not been overvalued by the market and they expect their share prices to increase after a business acquisition activity (Kaplan, 2007). As increase in earnings per share of a firm increases the return on equity, shareholders' wealth, and their purchasing power, findings of Vyas *et al*. (2012) support that more profitable firms are interested in investments in business acquisition. The greater the profitability of a firm, the greater the earnings per share of the firm. The greater the earnings per share of an acquirer, the greater the investments in business acquisitions. Increased purchasing power generated because of increased profitability, motivates firms to invest in business acquisitions as part of their growth strategy (Erel *et al*., 2010). Accordingly, this study formulates the first hypothesis (H1) related to RQ1:

H_1: Profitability of an acquirer is positively associated with the business acquisition decision of listed companies in Australia.

2.5.2 Leverage

Increased leverage encourages equity holders to pursue riskier investment strategies such as business acquisitions to generate a greater return to cover the increased debt obligations (Brander

and Lewis, 1986; Jensen and Meckling, 1976). Jason (1986) explains that the control effects of debt tend to be a potential determinant of business acquisition decision of an acquirer in relation to generating greater returns to debt holders. Myers (1977) and Jenson (1986) have supported that the debt holders have a significant influence over a firm's investment decision. As debt providers expect greater returns, firms holding increased debts tend to invest in business acquisitions to generate increased returns (Erel *et al*., 2010; Kamaly, 2007).

Free Cash Flow theory (Jenson, 1986) suggets that more profitable firms use more debt to discipline and bond effectively managers to encourage them to invest in business acquisitions. Findings of Vyas *et al.* (2012) and Dessyllas and Hughes (2005) have supported a negative association between investments in business acquisitions and leverage. Accordingly, this study formulates the second hypothesis (H_2) related to RQ1:

H_2: Leverage of an acquirer is positively associated with the business acquisition decision of listed companies in Australia.

2.5.3 Liquidity

Strong liquidity of an acquirer is more important than profitability to survive and gain success in business acquisitions (Holl and Pickering, 1988; Kaplan, 2007). Cash rich firms tend invest in business acquisitions due to their low cost of capital (Erel *et al*., 2010). Firms that employ low

debt level and have plentiful free cash flow, have a lower cost of capital due to the associated low cost of debt. These firms have the capacity to invest in business acquisitions to enhance their returns (Erel *et al*., 2010; Hyytinen and Pajarinen, 2005; Kamaly, 2007; Kaplan, 2007).

The Efficiency theory suggests that, when acquirers have high internal cash flows and poor investment opportunities, they tend to invest in business acquisitions of a target with low internal cash flows and high investment opportunities (Weston *et al.,* 2007). Findings of Boyan and Peter (2002) suggest that firms prefer spending their extra cash on business acquisitions to other direct investments. Acquirers with solid balance sheets target undervalued shares for investing in business acquisitions (Starta *et al*., 2010). Pecking Order theory explains that firms with high liquidity borrow less and use their excess cash to fund their investments that include business acquisitions (Myers and Majluf, 1984). Findings of Vyas *et al*. (2012) suggest that cash rich firms are more interested in investments in business acquisitions as growth strategy. Most of these studies have supported a positive relationship between liquidity and investment in business acquisitions by an acquirer. Free Cash Flow theory suggests that cash rich acquirers find investing in business acquisitions as attractive due to the associated low cost of capital to them (Jenson, 1986). Accordingly, this study formulates the third hypothesis (H3) related to RQ1:

H_3: Liquidity of an acquirer is positively associated with the business acquisition decision of listed companies in Australia.

2.5.4 Industry Classification

Andrade *et al*., (2001) suggest that business acquisition activities cluster over time, by industry or by country. Business acquisitions in one industry may encourage other firms to undertake business acquisitions too (Kleinert and Klodt, 2002). Accordingly, this study formulates the fourth hypothesis (H4) related to RQ2:

H_4: When an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision.

2.5.5 Time

Kleinert and Klodt, (2002) and Andrade *et al*., (2001) have found that the pattern of business acquisition activities changes over time when industries are experienced sector-specific shocks at different point in time and different intensity. Historical merger waves are a result of sector-specific shocks at different point in time and different intensity (Andrade et al., (2001). Accordingly, this study formulates the fifth hypothesis (H5) related to RQ3:

H_5: When an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the time when the business acquisition occurs also impacts on the decision.

Chapter 2: Literature Review and Hypotheses Development: Factors Influencing the Business Acquisition Decision (the Deal Value) of Listed Companies in Australia

2.6 Factors Influencing Business Acquisition Decision – Macro-economic Related

Literature has found a dynamic relationship between investment in business acquisitions and macro-economic variables. This section reviews empirical studies and develops the hypotheses for the three macro-economic environment related determinants of the acquirer's business acquisition decision: H_6 – H_8 related to RQ4: 1) interest rate; 2) exchange rate; and 3) stock market index. H_9 related to RQ5: the impact of acquirer's industry classification on RO4. H_{10} related RQ6: the impact of the time when the business acquisition occurs on RO4.

2.6.1 Interest Rate

Studies by Steiner (1975), Marsh (1982), Melicher *et.al*. (1983) and Becketti (1986) have found that the interest rate and investments in business acquisitions are negetively related. Higher interest rates discourage investments in business acquisitions for acquires who intend to finance business acquisition transactions using borrowings due to associated high cost of capital. A negative association has been identified between investments in business acquisitions and the interest rate, when an acquirer intends to settle the deal value using borrowings (Becketti, 1986; Melicher *et.al*., 1983; Steiner, 1975). The impact of interest rate on investments in business acquisitions varies according to the means by which the deal is settled (Visic and Skrabic, 2010). Reed and Babool (2003), and Vasconcellos and Kish (1996 and 1998) suggest that the interest rate has a significant impact on variations in cross-border business acquisition activity by country. They have found that the interest rate has a negative impact on inward and outward cross-border

business acquisition activity. Their results indicate that when interest rate increases, business acquisition models with outflows have been decreasing in line with the decrease in interest rates.

Increase in interest rate increases the cost of capital. Borrowings become more expensive at a higher interest rate (Benzing, 1991; Irina,2021). Interest rate affects investments in business acquisitions directly through the cost of the business acquisition. As borrowing is more expensive during a period of credit crunch, investments in business acquisitions become less attractive for acquirers. However, increase in interest rate creates a buyer's market for cash rich acquirers. When interest rate rises, cash rich firms find investments in business acquisitions as attractive due to the associated low cost of capital (Irina, 2021; Kamaly, 2007; Marsh, 1982; Taggart, 1977). Increase in interest rate is a positive signal of rising economic activity and encourages acquirers to invest in business acquisitions (Erel *et al*., 2010; Irina, 2021; Kamaly, 2007; Marsh, 1982; Taggart, 1977). When interest rate rises cash rich firms tend to target undervalued assets for business acquisitions by buying their stocks (Kamaly, 2007). Accordingly, this study formulates the sixth hypothesis (H6) related to RQ4:

H_6*: Interest rate of Australia is positively associated with the business acquisition decision of listed companies in Australia.*

2.6.2 Exchange Rate

Appreciation of a country's currency motivates acquirers to invest in business acquisitions due to the increased purchasing power (Erel *et al*., 2010; Reed and Babool, 2003). When exchange rate decreases, investments in business acquisitions become attractive for acquirers due to the reduced purchasing price derived from the increased purchasing power in cross boarder acquisitions (Becketti, 1986; Melicher *et.al*., 1983; Steiner, 1975). These studies found a negative association between exchange rate and investments in business acquisitions. Findings of Reed and Babool (2003) and, Vasconcellos and Kish (1996 and 1998) suggest cross-border business acquisition activity is highly sensitive to changes in exchange rate as an appreciation of a country's currency creates a favorable condition for the acquiring country to purchase foreign firms through cross-border business acquisitions. However, a depreciation in acquirer's country's exchange rate tends to make the cost of business acquisition of foreign firms more expensive.

Kamaly (2007) suggests that the depreciation of a country's domestic currency has a significant positive influence on investments in business acquisition activity. The findings of Kamaly (2007) has been further supported by previous studies of Benzing (1992), Clark *et. al*. (1988), Nelson (1959), Nelson (1966), Melicher *et.al.* (1983), Poloncheck and Sushka (1987), Shughart and Tollison (1984), and Weston (1961). Most of these studies have examined impact of the exchange rate on cross-border business acquisitions. However, exchange rate has a significant bearing on the domestic business acquisitions, in addition to cross-border business acquisitions. A country's

monetary policy has a direct bearing on currency values. Economics theory holds a positive relationship between a country's interest rate and their currency's exchange rate. Export oriented domestic industries have a significant exposure to the exchange rate. Exchange rate plays an important role for domestic firms whose products or services are traded in the global market, when assessing their profitability, purchasing power, and shareholders' wealth. A depreciation of the Australian dollar increases the international competitiveness of Australian exporters. When Australian dollar depreciates Australian goods and services become cheaper relative to overseas goods and services, and foreign consumers and firms tend to demand more Australian goods and services, leading to an increase in the volume of Australian exports. When Australian dollar depreciates imported goods and services become relatively more expensive for domestic consumers and firms. As a response to expensive imported goods and services, Australian (domestic) consumers and firms tend to demand more Australian (domestic) produced goods and services. In contrast, when Australian dollar appreciates Australian goods and services become expensive relative to overseas goods and services, leading to a decrease in exports. When Australian dollar appreciates imported goods and services become relatively cheaper for domestic consumers and firms. In such a situation, domestic firms tend to undertake business acquisitions aiming to be more competitive with cheaper imported goods and services, utilising the synergy gains realised from the business acquisitions as explained by the Efficiency theory to establish an increased market or industry concentration including monopolistic market position, better diversification, increased productivity, quality and cost savings (Bruner, 2002; Chatterjee, 1986;

Depamphilis, 2010; Hellgren *et al*., 2011; Kitching, 1967; Porter,1985; Rumelt, 1986; Trautwein, 1990; Vaara and Monin, 2010; Weston *et al.*, 2007). On these grounds, this study uses macro-economic variable, exchange rate to assess its impact on the business acquisitions of acquirers who are listed on the Australian Securities Exchange. Accordingly, this study formulates the seventh hypothesis (H7) related to RQ4:

H_7: Exchange rate of Australia is positively associated with the business acquisition decision of listed companies in Australia.

2.6.3 Stock Market Index

A firm's stock price impacts on investments in business acquisitions, as the business acquisition can be funded through a combination of borrowings and equity that come from the acquiring firm's market capitalisation. Acquirers use some of their increased market capitalisation to undertake business acquisitions (Kaplan, 2007; Mueller and Burkhard, 1998; Reed and Babool, 2003) suggest that, when stock prices are at a historic low, it creates a buyer's market for business acquisitions. Acquirers with strong financial positions and solid balance sheets tend to target undervalued stocks for business acquisitions.

Kamaly (2007) suggests a positive relationship between the stock market index and business acquisition activity. Erel *et al.* (2012), Liao *et al.* (2021) and Mueller and Burkhard (1998) suggest

that when stock market increases in value it promotes a market for business acquisitions for acquirers. Expectation theory suggest that a positive expectation about the future, in terms of strong economic growth and increased share prices, encourages acquires to invest in business acquisitions. When stock prices are rising, the cost of capital goes down, and acquirers have access to a greater value for potential targets (Kamaly, 2007). Economic Disturbance theory suggests that business acquisitions become more attractive for acquirers during an economic boom as the value of a target appreciates because of increased sales and production capacity due to the increased market demand. During an economic boom, the Expectation theory induces stock prices to rise. As a result, investment in business acquisitions becomes more attractive for acquirers. As there is a negative association between change in interest rate and stock prices, any change in the interest rate directly reflects on the stock market index. When stock prices are at historic low, it creates a buyer's market for business acquisitions (Becketti, 1986; Globe, 1993; Guerard, 1985; Nelson, 1959; Nieh 2004).

Previous studies by Benzing (1992), Clark *et. al*. (1988), Nelson (1959), Nelson (1966), Melicher *et.al.* (1983), Poloncheck and Sushka (1987), Shughart and Tollison (1984), Martynova and Renneborg (2008), Clarke and Ioannidis (1996), Sharma and Cernat-Gruci (1989) and Weston (1961), have found positive association between cost of capital and stock prices, and aggregate business acquisition activity.

However, findings of some studies have identified a negative relationship between investments in business acquisitions and the stock market index. When a country's stock market index increases, investment in business acquisitions becomes costly due to the increased purchasing prices and discourages acquirers (Beckenstein, 1979; Clark *et.al.*,1988; Geroski and Knight, 1984; Globe, 1993; Golbe and White, 1988; Melicher *et.al.*, 1983*;* Reed and Babool, 2003). Findings of Vasconcellos and Kish (1996 and 1998) indicate that the stock market index has a significant impact on investments in business acquisitions and it has been identified as an important explanatory variable. Accordingly, this study formulates the eighth hypothesis (H_8) related to RQ4:

H_8: Stock Market Index of Australia is negatively associated with the business acquisition decision of listed companies in Australia.

2.6.4 Industry Classification

Kleinert and Klodt (2002) have found that the increased competition from globalisation has been responsible for national merger activities as it has contributed to increased and altered intensity of competition in national markets. Changes to monetary and fiscal policies including financial deregulation, industrial revolution, antitrust law enforcement, technological changes, globalisation, and privatisation impact on domestic business acquisitions (McDonald, *et al*., 2005). Industry specific legislation affects business acquisition activity in sensitive sectors such as

banking, aviation, media, and gaming sectors. Accordingly, this study formulates the nineth hypothesis (H9) related to RQ5:

H_9: When macro-economic variables of interest rate, exchange rate and stock market index affect acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision.

2.6.5 Time

The macro-economic environment that includes the regulatory environment and the monetary policy of a country has a strong bearing on business acquisitions as the determinants of business acquisitions can behave differently in different time periods due to changes in the macro-economic, legal, regulatory and political environments, industry classifications and the effect of globalisation (Andrade *et al*., 2001; Bondt and Thompson, 1992; Gort, 1969; Kleinert and Klodt, 2002). Accordingly, this study formulates the tenth hypothesis (H10) related to RQ6:

H_{10}: When macro-economic variables of interest rate, exchange rate and stock market index affect acquirer's business acquisition decision, the time when the business acquisition occurs also impacts on the decision.

2.7 Chapter Summary

This chapter has examined and discussed the existing literature on the factors influencing business acquisition decisions. This discussion assisted the formulation of the ten hypotheses: three hypotheses relating to the first research question (RQ1), one hypothesis relating to the second research question (RQ2), one hypothesis relating to the third research question (RQ3), three hypotheses relating to the fourth research question (RQ4), one hypothesis relating to the fifth research question (RQ5), and one hypothesis relating to the sixth research question (RQ6) in Section 1.3. The table 2.1 summarises these research questions and their respective hypotheses.

Table 2.1 Summary of research questions and related hypotheses

RQ1:	**How do the acquirer's profitability, leverage, and liquidity affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange?**
H_1:	*Profitability of an acquirer is positively associated with the business acquisition decision of listed companies in Australia.*
H_2:	*Leverage of an acquirer is positively associated the business acquisition decision of listed companies in Australia.*
H_3:	*Liquidity of an acquirer is positively associated with the business acquisition decision of listed companies in Australia.*

Table 2.1 Summary of research questions and related hypotheses (continued)

RQ2:	**Does the industry classification of an acquirer impact on the business acquisition decision in RQ1?**
H_4	*When an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision.*
RQ3:	**Does the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ1?**
H_5	*When an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the time in terms of when the business acquisition occurs also impacts on the decision.*
RQ4:	**How do the macro-economic variables of interest rate, exchange rate and stock market index affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange?**
H_6:	*Interest rate of Australia is positively associated with the business acquisition decision of listed companies in Australia.*
H_7:	*Exchange rate of Australia is positively associated with the business acquisition decision of listed companies in Australia.*
H_8:	*Stock Market Index of Australia is negatively associated with the business acquisition decision of listed companies in Australia.*

Table 2.1 Summary of research questions and related hypotheses (continued)

RQ5:	**Does the industry classification of an acquirer impact on the business acquisition decision in RQ4?**
H_9	*When macro-economic variables of interest rate, exchange rate and stock market index affect acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision.*
RQ6:	**Does the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ4?**
H_{10}	*When macro-economic variables of interest rate, exchange rate and stock market index affect acquirer's business acquisition decision, the time in terms of when the business acquisition occurs also impacts on the decision.*

The next chapter, Chapter 3, presents the sample, data, and research methodology used in testing these ten hypotheses.

Chapter 3: Sample, Data, and Research Methodology

3.1 Introduction

Chapter 2 presented a literature review and developed hypotheses related to six research questions (RQ1 to RQ6) posed in this study. This chapter presents the sample, data, and research methodology to examine the hypotheses discussed in Chapter 2 and, is structured as follows. Section 3.2 provides details on the sample, sampling procedures employed to investigate the hypotheses, and the data sources. Section 3.3 presents the research methodology for testing the ten hypotheses:H_1 to H_3 related to RQ1: How do the acquirer's profitability (PROF), leverage (LEVE), and liquidity (LIQU) affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange? H_4 related to RQ2: Does the industry classification (IND) of an acquirer impact on the business acquisition decision in RQ1? H_5 related to RQ3: Does the time (TIME) in terms of when the business acquisition occurs impact on the business acquisition decision in RQ1? H_6 to H_8 related to RQ4: How do the macro-economic variables of interest rate (IR), exchange rate (ER) and stock market index (SMI) affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange? H_9 related to RQ5: Does the industry classification of an acquirer impact on the business acquisition decision in RQ4? and H_{10} related to RQ6: Does the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ4? Section 3.3.1 states the empirical models employed to examine the determinants of the business acquisition decision, Section 3.3.2 states the estimation

methods followed by variable measurements for dependent and test variables in the Section 3.3.3. Finally, Section 3.4 summarises the chapter.

3.2 Sample and Data

The following subsection discusses the sample, sampling procedure, data, and data sources used in this study.

3.2.1 Sample

The sample for this study consists of 160 completed business acquisitions by acquirers that are listed on the Australian Securities Exchange over a 16-year period from 1997 to 2012. 160 completed business acquisitions consist of the top 10 completed business acquisitions selected based on the highest deal value for each year from 1997 to 2012.

Completed business acquisitions are used for the sample for the following reasons. First, as the purpose of the study is to identify determinants of business acquisition decision (the deal value) of acquirers, this can be done by investigating the completed business acquisitions, and there is no acquirer for the unsuccessful business acquisitions. Second, all relevant data that are expected for this study are not available for the unsuccessful business acquisitions. Third, 72 per cent of the business acquisitions recorded from 1997 to 2012 have been successful business acquisition transactions. Therefore, sample of this study is a reasonable representation of the population. The use of completed business acquisitions in this study is consistent with the study of Kamaly (2007).

Chapter 3: Sample, Data, and Research Methodology

The top ten completed business acquisitions selected based on the highest deal value for each year from 1997 to 2012 for the sample are used for the following reasons. First, the deal value of top ten completed business acquisitions covers 79.13 per cent of the population deal value. Second, investigating the top ten deal values for each year can provide a stronger evidence on the determinants of the business acquisition decision of the acquirers. Therefore, sample of this study is a reasonable representation of the population characteristics. The selection of the top ten business acquisitions in this study is consistent with the study of Erdogan (2012).

The period from 1997 to 2012 for the sample is selected for the following reasons. First, the business acquisition data for companies that are listed on the Australian Securities Exchange are available from 1997 since the commencement of electronic trading, and that is when the option market moved from the floor to the screen. Second, Australian economy has recorded its longest period of uninterrupted economic growth over 20 years from the third quarter 1991 following the recession in the early 1990s. During this period many developed and developing countries have experienced negative economic growth due to the impact of dot.com bubble in 2001, the U.S. sub-prime housing bubble in 2008 and the Asian financial crises resulting the collapse of the currency exchange rate and the hot money bubble in July 1997 (Battellino, 2010). During the global financial crisis from mid-2007 to early-2009, Australian government with the combined effort of the Reserve Bank of Australia, the Australian Prudential Regulation Authority, the financial market and corporate regulator, and the Australian Securities and Investments Commission have introduced expansionary fiscal, monetary and economic policy measures that included implementing stronger global banking regulations and strengthening the lending standards to

secure the Australian banking system (McDonald and Morling, 2012). Application of prudent and disciplined financial policies such as floating the exchange rate, reforms to competition and industry policies in the business sector and labour markets have contributed Australian economy to be more resilient, to achieve a greater economic flexibility and sustained economic growth from late 1991, and to stabilise the domestic economy. Sharp fall in Australian dollar due to the deteriorating economic conditions abroad during this period has help safeguarding the domestic economy. Monetary policy adopted during this period has help maintaining inflation low. Increased productivity during this period has led to a large fall in the unemployment. Reforms introduced in the financial sector during this period have help attracting investors (Battellino, 2010). The Australian financial institutions did not have a significant exposure to the complex monetary instruments collateralised by the U.S. sub-prime mortgages (Laker,2009). During the global financial crises, the Australian banking system remained profitable continually providing lending support to Australian businesses (Edey, 2009). Whilst the world economy sharply experienced the deepest recession since World War II during the global financial crises, Australia has recorded a solid positive economic growth (Barrett, 2011). Third, because of the increased business and consumer confidence during 1997 to 2012 Australia has recorded the highest number of domestic business acquisitions as per Morningstar Data Analysis Premium business acquisitions data base maintained by Thomson Reuters . Fourth, the period from 1997 to 2012 for the sample has been selected in order to capture firm specific, industry specific, time specific and macro-economic environment specific factors to reflect different economic and business cycles as well as to observe behavior and relationship of the possible determinants of business acquisitions.

3.2.2 Sampling Procedure

The sample S1 in this study comprises completed business acquisitions of acquirers that are listed on the Australian Securities Exchange over a 16-year period from 1997 to 2012 to examine the hypotheses H_1 to H_{10} related to RQ1 to RQ6. The sample of this study is selected based on the following criteria:

1. Acquirers must be listed on the Australian Securities Exchange during the period January 1997 to December 2012 (C1).
2. Business acquisitions of C1 acquirers must be the completed business acquisitions during the period January 1997 to December 2012 (C2).
3. C1 acquirers audited annual financial statements and business acquisition related data: bidder and target company names, deal announced date, bid status, industry classification, and the deal value for C2 must be available (C3).
4. Top ten in each year, ordered based on the highest deal value of completed business acquisitions as per C3, must be selected (C4).
5. The interest rate of Australia must be available for the period January 1997 to December 2012 (C5).
6. The Australian dollar to the United States dollar exchange rate must be available for the period January 1997 to December 2012 (C6).
7. The main stock market index All Ordinaries ASX500 of Australian Securities Exchange must be available for the period January 1997 to December 2012 (C7).

To be included in the analysis, the population firms (acquirers) related to the sample S1 must, firstly, be listed on the Australian Securities Exchange during the period January 1997 to December 2012. Secondly, the business acquisitions performed by these acquirers must be the completed acquisitions. Thirdly, audited financial data and business acquisition related data must be available. This information is downloaded from the Thomson Reuters' Morningstar Data Analysis Premium business acquisitions data base. Fourthly, top ten completed business acquisitions in each year ranked based on the highest deal value are selected for the sample S1.

For macro-economic data to be included in the analysis, firstly, the interest rate of Australia must be available for the period January 1997 to December 2012. Secondly, the Australian dollar to the United States dollar exchange rate must be available for the period January 1997 to December 2012. The information related to the interest rate of Australia, and the Australian dollar to the United States dollar exchange rate is collected from the Statistics data base maintained by the Reserve Bank of Australia. Thirdly, the main stock market index of Australia must be available for the period January 1997 to December 2012. The information related to the stock market index is collected from the main stock market index of All Ordinaries ASX500, maintained by the Australian Securities Exchange.

A summary of total number and the total deal value of successful business acquisition recorded from 1997 to 2012 by acquirers that are listed on the Australian Securities Exchange is give in the table 3.1.

Table 3.1: A summary of total number and the total deal value of successful business acquisitions recorded from 1997 to 2012 by acquirers that are listed on the Australian Securities Exchange

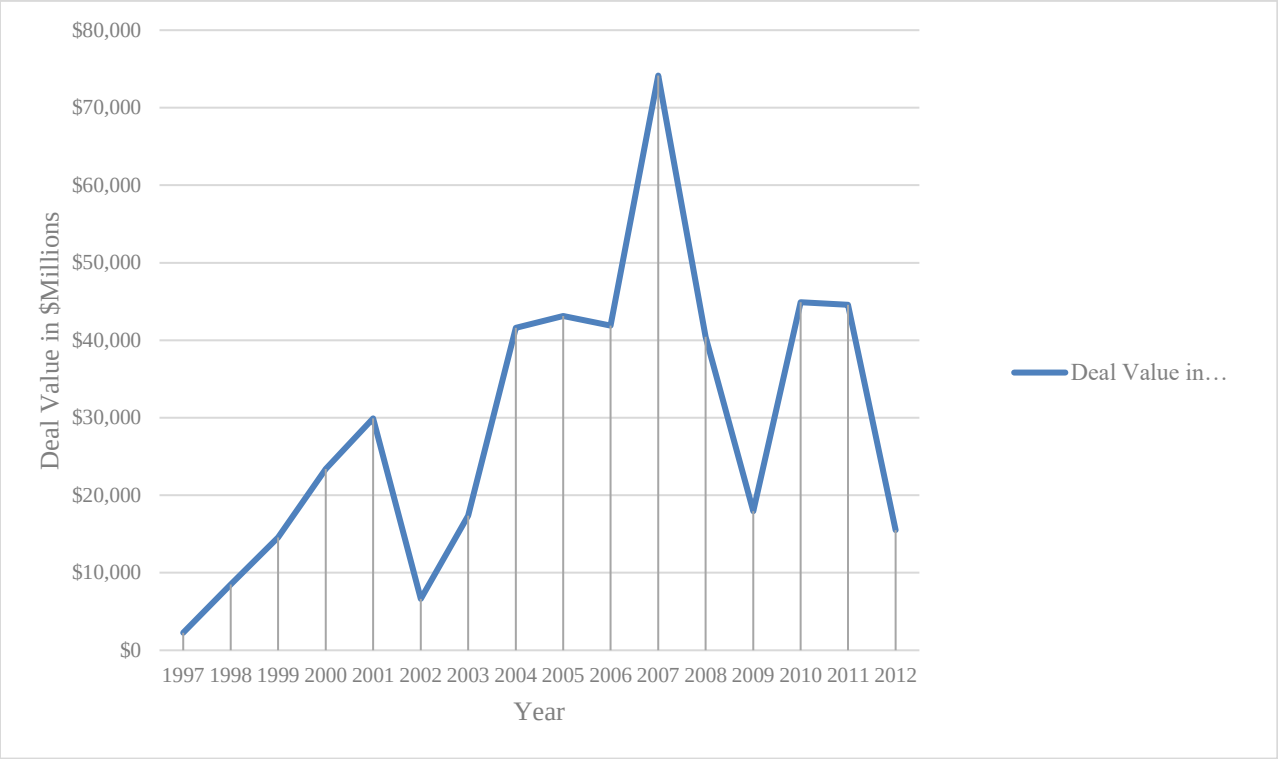
	Population	**Sample**	**Sample as a per centage to the Population**
Total Number of successful business acquisitions	873	160	18.33%
Total deal value of successful business acquisitions	$589,850,067,129	$466,753,598,395	79.13%

Source: Morningstar Data Analysis Premium https://dataanalysis.morningstar.com.au/

The total number of successful business acquisitions undertaken by acquirers that are listed on the Australian Securities Exchange during the sixteen years from 1997 to 2012 were eight hundred seventy-three. Total deal value of these eight hundred seventy-three successful business acquisitions were AUD 589.850 billion. The total deal value of the top 160 successful business acquisitions for each year from 1997 to 2012 by acquirers that are listed on the Australian Securities Exchange were AUD 466.753 billion. The sample of the study represents 18.33 per cent of the population in terms of number of successful business acquisitions and 79.13 per cent of the population in terms of the total deal value. The sample of the study reasonably represents the population characteristics, and therefore inferences about the population can be confidently derived based on the findings of the sample.

Chart 3.1 depicts the flow of the deal values of the top ten completed business acquistions for each year from 1997 to 2012 of the study's sample.

Chart 3.1: Deal values of top ten completed business acquisitions for each year from 1997 to 2012 of the sample of the study



Source: Morningstar Data Analysis Premium https://dataanalysis.morningstar.com.au/

As per chart 3.1, there was a lag of completed business acquisition activity by acquires those are listed on the Australian Stcok Exchange in the years 1997,2002, 2009 and 2012. The global financial crisies occured between mid 2007 and early 2009. The global financial crisies created an extreme stress in the global financial markets and the banking systems. The chart 3.1 shows that the Australian financial market was affected by the global financial crisies as there had been a sharp drop in the completed business acquistions activity from 2007 to 2009. Very intresteingly, Australia recorded the higheset completed business acquistions activity just before start of the

global financial crisis. More interisingly, the business acquisitions activity started rising again straight after 2009 and continued the momentum until 2011 before they start dropping again.

However, compared to rest of the major economies around the world, Australia did not experience a large economic downturn during the global financial crisis. Notwithstanding the fact that the Australian financial system was in a much better position before start of the global financial crisis, there were large policy responses in terms of significantly lowering the cash rate by the Reserve Bank of Australia, introduced expansionary fiscal policy measures by the Australian government providing guarantees on deposits at and bonds issued by the Australian banks, implemented stronger global banking regulations in Australia, and strengthened the lending standards to make the financial and private sectors more resilient by the combined efforts of the Australian Prudential Regulation Authority, the financial market and corporate regulator, the Australian Securities and Investments Commission, to ensure that the Australian economy did not suffer a major downturn given the magnitude of the shock experienced by the global economy aiming to build confidence. Results of these efforts are reflected on the chart 3.1 showing recovery of business acquisition activity straight after 2009. Therefore, the sample of this study reflects the fiscal and economic policy measures from 1997 to 2012 including the minor impact arose during the global financial crisis.

A summary of the sample following the sampling procedure is given in the table 3.2.

Table 3.2 Summary of the study sample

Year	Total Deal Value of completed business acquisitions of the Population	Deal Value of top ten completed business acquisitions - Sample	Sample as a per centage to the Population
1997	$3,455,652,227	$2,266,459,013	66%
1998	$10,311,642,777	$8,476,308,598	82%
1999	$17,558,047,557	$14,542,755,029	83%
2000	$29,608,096,821	$23,386,607,377	79%
2001	$35,993,490,138	$29,907,359,196	83%
2002	$7,516,202,939	$6,626,130,357	88%
2003	$22,410,075,605	$17,373,151,118	78%
2004	$56,265,586,239	$41,615,937,794	74%
2005	$49,966,530,629	$43,135,390,038	86%
2006	$57,234,785,421	$41,902,816,234	73%
2007	$95,962,921,866	$74,143,846,531	77%
2008	$45,146,721,011	$40,451,543,797	90%
2009	$21,283,881,651	$17,963,838,178	84%
2010	$62,724,627,939	$44,902,719,810	72%
2011	$55,003,942,873	$44,553,458,145	81%
2012	$19,407,861,436	$15,505,277,180	80%
Total	**$589,850,067,129**	**$466,753,598,395**	

Source: Morningstar Data Analysis Premium https://dataanalysis.morningstar.com.au/

The table 3.2 above shows the deal value of completed business acquisitions from 1997 to 2012 and the deal value of top ten completed business acquisitions for each year that represent the study sample. The study sample in terms of the deal value of top ten completed business acquisition in each year as a per centage to the population deal value that is the total deal value of completed business acquisition in each year consists of 66%, 82%, 83, 79%, 83%, 88%, 78%, 74%, 86%,

73%, 77%, 90%, 84%, 72%, 81%, and 80% for 1997 to 2012, respectively. Overall, the study sample is a fair representation of the population and its characteristics.

A summary of the study sample categorised into time dummy variables is given in the table 3.3.

Table 3.3 Summary of the study sample categorised into time dummy variables

Time Dummy Variable	Total Deal Value of completed business acquisitions of the Population	Deal Value of top ten completed business acquisitions - Sample	Sample as a per centage to the Population
TIME1997	$3,455,652,227	$2,266,459,013	66%
TIME1998	$10,311,642,777	$8,476,308,598	82%
TIME1999	$17,558,047,557	$14,542,755,029	83%
TIME2000	$29,608,096,821	$23,386,607,377	79%
TIME2001	$35,993,490,138	$29,907,359,196	83%
TIME2002	$7,516,202,939	$6,626,130,357	88%
TIME2003	$22,410,075,605	$17,373,151,118	78%
TIME2004	$56,265,586,239	$41,615,937,794	74%
TIME2005	$49,966,530,629	$43,135,390,038	86%
TIME2006	$57,234,785,421	$41,902,816,234	73%
TIME2007	$95,962,921,866	$74,143,846,531	77%
TIME2008	$45,146,721,011	$40,451,543,797	90%
TIME2009	$21,283,881,651	$17,963,838,178	84%
TIME2010	$62,724,627,939	$44,902,719,810	72%
TIME2011	$55,003,942,873	$44,553,458,145	81%
TIME2012	$19,407,861,436	$15,505,277,180	80%
Total	**$589,850,067,129**	**$466,753,598,395**	

Source: Morningstar Data Analysis Premium https://dataanalysis.morningstar.com.au/

The study uses a dummy variable TIME to examine the RQ3: whether the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ1 and, RQ6: whether the time in terms of when the business acquisition occurs impact on the business

acquisition decision in RQ4. When analysing the sample data to examine RQ3 and RQ6, the study codes time dummy variables, 1 if the relevant criterion is true, and 0 otherwise. The study sample has fifteen, time dummy variables representing years 1998 to 2012 as given in the table 3.3 above. The study labels these fifteen, time dummy variables from TIME1998 to TIME2012. The study uses the year 1997 (TIME1997) as the reference variable in the multiple regression analysis.

A summary of the study sample by industry as per the Australian Securities Exchange industry classification is given in the table 3.4.

Table 3.4 Summary of the study sample by industry as per the Australian Securities Exchange industry classification

Acquirers' industry classification as per the Australian Securities Exchange	Number of completed business acquisitions in the Sample	Deal Value
Metals and Mining	39	$98,783,697,211
Energy	14	$38,624,420,060
Food Beverage and Tobacco	16	$37,531,646,377
Real Estate	6	$36,948,636,746
Construction Materials	2	$36,268,156,083
Banks	4	$30,587,755,291
Insurance	5	$27,329,556,479
Food and Staples Retailing	3	$26,100,000,000
Real Estate Investment Trusts	13	$25,953,497,465
Telecommunication Services	6	$22,135,727,846
Transportation	7	$18,774,212,892
Utilities	5	$11,855,432,147
Consumer Services	5	$9,872,675,689
Health Care Equipment and Services	4	$8,904,787,954
Media	5	$8,727,142,234
Diversified Financials	5	$7,018,451,102
Chemicals	6	$4,880,250,183
Capital Goods	3	$3,931,485,781
Commercial Services and Supplies	3	$3,794,469,568
Paper and Forest Products	1	$3,300,000,000
Retailing	4	$1,724,332,924
Pharmaceuticals, Biotechnology and Life Sciences	1	$1,533,375,107
Entertainment	2	$1,246,868,249
Consumer Durables and Apparel	1	$927,021,007
Total deal value of study sample	**160**	**$466,753,598,395**

Source: Morningstar Data Analysis Premium https://dataanalysis.morningstar.com.au/

The study sample has business acquisitions of acquirers with twenty-four industries as per the Australian Securities Exchange industry classification. The highest number (39) and the deal value (AUD 98.8 billion) of business acquisitions undertaken by acquirers from 1997 to 2012 are from

the Metals and Mining industry whilst the lowest deal value (AUD 927 million) is from the Consumer Durables and Apparel industry. The study regroups these twenty-four industries in the sample into nine consolidated industries aiming to have a fair representation of different industries when analysing the sample data. The study names these nine consolidated industries IND1 to IND9. A summary of the study sample by consolidated industry classification is given in the table 3.5.

Table 3.5 Summary of the study sample by consolidated industry classification

Consolidated industry classification (Industry classification Dummy Variable)	Acquirers' industry classification in the Sample	Number of completed business acquisitions in the Sample	Deal Value	Industry representation
IND8	Metals and Mining	39	$98,783,697,211	21%
IND2	Energy, Telecommunication Services, and Utilities	25	$72,615,580,053	16%
IND4	Food Beverage and Tobacco, Paper and Forest Products, Retailing, and Food and Staples Retailing	24	$68,655,979,301	15%
IND1	Banks, Diversified Financials, and Insurance	14	$64,935,762,872	14%
IND6	Real Estate, and Real Estate Investment Trusts	19	$62,902,134,211	13%
IND3	Capital Goods, Chemicals, Commercial Services and Supplies, Construction Materials, Consumer Durables and Apparel, and Consumer Services	20	$59,674,058,311	13%
IND9	Transportation	7	$18,774,212,892	4%
IND7	Health Care Equipment and Services, and Pharmaceuticals, Biotechnology and Life Sciences	5	$10,438,163,061	2%
IND5	Entertainment and Media	7	$9,974,010,483	2%
	Total deal value of study sample	**160**	**$466,753,598,395**	**100%**

Source: Morningstar Data Analysis Premium https://dataanalysis.morningstar.com.au/

The acquirers in the sample ordered from the highest deal values are from the industries: Metals and Mining (AUD 98.8 billion), Energy, Telecommunication Services, and Utilities (AUD 72.6 billion), Food Beverage and Tobacco, Paper and Forest Products, Retailing, and Food and Staples Retailing (AUD 68.7 billion), Banks, Diversified Financials, and Insurance (AUD 65 billion), Real Estate, and Real Estate Investment Trusts (AUD 63 billion), Capital Goods, Chemicals, Commercial Services and Supplies, Construction Materials, Consumer Durables and Apparel, and Consumer Services (AUD 59.7 billion), Transportation (AUD 18.8 billion), Health Care Equipment and Services, and Pharmaceuticals, Biotechnology and Life Sciences (AUD 10.4 billion), and Entertainment and Media (AUD 10 billion). The study sample shows evidence that most of the business acquisitions during 1997 to 2012 were dominated by the acquirers operated in industries IND1 to IND9. The study sample also shows evidence that most of the business acquisition during 1997 to 2012 were aimed at industry concentration. Previous studies show evidence that the domestic firms tend to undertake business acquisitions to have synergy gains to establish a competitive market position including a monopolistic market position, better diversification, increased productivity, quality and cost savings to generate lower prices to consumers and higher returns to their shareholders (Bruner, 2002; Chatterjee, 1986; Depamphilis, 2010; Hellgren *et al*., 2011; Kitching, 1967; Porter,1985; Rumelt, 1986; Trautwein, 1990; Vaara and Monin, 2010; Weston *et al.*, 2007).

The study uses the consolidated industry classifications IND1, IND2, IND3, IND4, IND5, IND6, IND7 and IND9 as the dummy variables to examine impact of the industry classification of acquirers related to the RQ2: whether the industry classification of an acquirer impact on the

business acquisition decision in RQ1 and RQ5: whether the industry classification of an acquirer impact on the business acquisition decision in RQ4.When analysing the sample data to examine RQ2 and RQ5, the study codes industry dummy variables, 1 if the relevant criterion is true, and 0 otherwise. The study uses the Metals and Mining industry (IND8) as the reference variable in the multiple regression analysis.

3.2.3 Data and Data Sources

The main variables used in testing the hypotheses H_1 to H_3 related to RQ1 are from the audited financial statements data to calculate the variables of the profitability (the ratio of earnings per share), leverage (the ratio of long term debt to total assets), and the liquidity (the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure). As business acquisitions occur any time during a year, values for these variables are measured based on the year end value immediately before happening the business acquisition activity. The main variables used in the examination of the hypotheses H_4 to H_5 related to RQ4 are from the Statistics data base maintained by the Reserve Bank of Australia to calculate the variables of the interest rate (the ratio of annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia), and the exchange rate (the ratio of annual average of the Australian dollar to the United States dollar published by the Reserve Bank of Australia). The main variables used in the examination of the hypothesis H_6 related to RQ4 are from the main stock market index of All Ordinaries ASX500 maintained by the Australian Securities Exchange to calculate the variable of stock market index (the ratio of annual return of Close Price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange).

The study relies on several databases as data sources to verify reliability and accuracy of the data. The first database is the Thomson Reuters' Morningstar Data Analysis Premium business acquisitions data base which can be accessed online at *https://datanalysis.morningstar.com.au*. The database is used as the primary source to obtain business acquistion data and the annual report data. Hernando *et al*. (2008), Kastrinaki and Stoneman (2007), Kamaly (2007) and Lina *et al.* (2017) have used the Thomson Reuters' SDC Platinum Database for their studies. The third database is the Statistics data base maintained by the Reserve Bank of Australia. This database is used as the primary source to obtain Interbank Cash Rate and the Australian dollar to the United States dollar exchange rate. The fourth database is the main stock market index of All Ordinaries ASX500 of the Australian Securities Exchange. This database is used as the primary source to obtain the Close Price of the All Ordinaries Index ASX500.

3.3 Methodology for Analysing Factors Influencing the Business Acquisition Decision

This section presents the methodology to examine hypotheses H_1 to H_{10} related to RQ1 to RQ6. It aims to examine whether the acquirer and macro-economic related characteristics affect acquirer's business acquisition decision. The study uses OLS multiple regression methodology[21] to assess the hypotheses H_1 to H_{10} related to RQ1 to RQ6. The study uses the OLS multiple regression methodology to examine how well a set of independent variables predict the dependent variable. Erdogan (2012), Hernando *et al*. (2008), Irina, (2021), Kamaly (2007), Martynova and Renneborg

[21] The multiple regression methodology is a statistical method of investigating the association between the dependent variable (also referred as the outcome, targeted or criterion variable) and the independent variables (also referred as the predictor, explanatory or regressor variables). The multiple regression methodology explains the amount of variance in the dependent variable by set of independent variables and identify the strongest predictor variable within the model (Gujarati, D. M. (2015).

(2008) and Vyas *et al*. (2012) have used the multiple regression methodology in their studies. To test the robustness of the main results in evaluating the hypotheses H_1 to H_{10} related to RQ1 to RQ6 this study uses the generalised method of moments (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond,1998).

The variables related to RQ1 and RQ4 have been tested to identify any non-compliance to the assumptions of the multiple regression methodology[22]: Prior to the estimation both dependent and independent variables are checked for the stationary behavior. Ordinary squires (OLS) method is employed for estimation as all the variables behave stationary. Existence of a significantly minimum correlation and multicollinearity between the test variables indicates that the test variables do not have significant influence on altering the study results.

Three acquirer related explanatory variables- profitability (PROF), leverage (LEVE), and liquidity (LIQU) – are expected to be associated with the acquirer's business acquisition decision related to RQ1. Three macro-economic related explanatory variables - interest rate (IR), exchange rate (ER), and stock market index (SMI) - are expected to be associated with the acquirer's business acquisition decision related to RQ4. The following Section 3.3.1 presents the multiple regression models and measurement variables used in analysing the hypotheses H_1 to H_{10} related to RQ1 to

[22] There are several assumptions that are built into multiple regression methodology: 1) the relationship between the dependent variable and independent variables is linear using scatterplots; 2) there is no multicollinearity (that occurs when there are two or more independent variables that are highly correlated with each other) in the study data using collinearity statistics, variance inflation factor and tolerance scores; 3) the values of the residuals are independent; 4) the variance of the residuals is constant (homoscedasticity) using standardised residuals and standardised predicted values; 5) the values of residuals are normally distributed using P-P plot.; and 6) there are no unduly influential outliers, high leverage points or highly influential points biasing the models.

RQ6. Section 3.3.2 states the estimation methods, followed by variable measurement details in the Section 3.3.3.

3.3.1 Empirical Models

To investigate hypotheses H_1 to H_{10}, this study performs a multiple regression analysis. The study develops six multiple regression models, M1 to M6 (representing Equations 3.1 to 3.6) to examine RQ1 to RQ6. The dependent variable that represents the acquirer's business acquisition decision in these models M1 to M6, is measured by the deal value (DV). The models M1 to M3 (Equations 3.1 to 3.3) measure the association between the DV and the acquirer's characteristics. The models M4 to M6 (Equations 3.4 to 3.6) measure the association between the DV and the macro-economic characteristics. Acquirer related test variables in the models M1 to M3 include the profitability (PROF), leverage (LEVE), and the liquidity (LIQU). The model M2 (Equation 3.2) includes a categorical or dummy variable to measure impact of the industry classification (IND) on the DV in addition to the effect of acquirer related test variables. The model M3 (Equation 3.3) includes a categorical or dummy variable to measure impact of time (TIME) on the DV in addition to the effect of acquirer related test variables. The macro-economic characteristics related test variables in the models M4 to M6 include the interest rate (IR), the exchange rate (ER) and the stock market index (SMI). The model M5 (Equation 3.5) includes a categorical or dummy variable to measure impact of the industry classification (IND) on the DV in addition to the effect of the macro-economic characteristics related test variables. The model M6 (Equation 3.6) includes a categorical or dummy variable to measure impact of time (TIME) on the DV in addition to the effect of the macro-economic characteristics related test variables. To test the hypotheses H_1 – H_{10}, an OLS regression model is employed for pooled observations across firms during the period 1997 to 2012.

The models M2 and M5 include relevant industry specific variables to avoid potential problems of omitted variables. The industry dummy variables (IND) are designed to capture the specific effect of industry for each observation. The models M3 and M6 include relevant time specific variables to avoid potential problems of omitted variables. The time dummy variables (TIME) are designed to capture the specific effect over time for each observation.

The six multiple regression models M1 to M6 (Equations 3.1 to 3.6) are as follows:

Model M1:

$$DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + e \qquad \textit{(Equation 3.1)}$$

Model M2:

$$DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + \beta_7 D_{ind1} + \beta_8 D_{ind2} + \beta_9 D_{ind3} + \beta_{10} D_{ind4} + B_{11} D_{ind5} + \beta_{12} D_{ind6} + \beta_{13} D_{ind7} + \beta_{14} D_{ind9} + e \qquad \textit{(Equation 3.2)}$$

Model M3:

$$DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + \beta_{15} D_{t1} + \beta_{16} D_{t2} + \beta_{17} D_{t3} + \beta_{18} D_{t4} + \beta_{19} D_{t5} + \beta_{20} D_{t6} + \beta_{21} D_{t7} + \beta_{22} D_{t8} + \beta_{23} D_{t9} + \beta_{24} D_{t10} + \beta_{25} D_{t11} + \beta_{26} D_{t12} + \beta_{27} D_{t13} + \beta_{28} D_{t14} + \beta_{29} D_{t15} + e \qquad \textit{(Equation 3.3)}$$

Model M4:

$$DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + e \qquad \textit{(Equation 3.4)}$$

Model M5:

$$DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + \beta_7 D_{ind1} + \beta_8 D_{ind2} + \beta_9 D_{ind3} + \beta_{10} D_{ind4} + \beta_{11} D_{ind5} + \beta_{12} D_{ind6} + \beta_{13} D_{ind7} + \beta_{14} D_{ind9} + e \qquad \textit{(Equation 3.5)}$$

Model M6:

$$DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + \beta_{15} D_{t1} + \beta_{16} D_{t2} + \beta_{17} D_{t3} + \beta_{18} D_{t4} + \beta_{19} D_{t5} + \beta_{20} D_{t6} + \beta_{21} D_{t7} + \beta_{22} D_{t8} + \beta_{23} D_{t9} + \beta_{24} D_{t10} + \beta_{25} D_{t11} + \beta_{26} D_{t12} + \beta_{27} D_{t13} + \beta_{28} D_{t14} + \beta_{29} D_{t15} + e \qquad \textit{(Equation 3.6)}$$

where,

DV_{it} = Business acquisition decision, measured by the purchase consideration (also referred as the deal value) paid by the acquirer divided by the target's number of shares issued for firm i for time t;

β_0 = intercept of the regression line;

β_1 - β_3 = respective regression coefficients for PROF, LEVE, and LIQU;

β_4 – β_6 = respective regression coefficients for IR, ER, and SMI;

β_7 – β_{14}= respective regression coefficients for industry dummy variables;

$\beta_{15} - \beta_{29}$= respective regression coefficients for time dummy variables;

$PROF_{it}$ = profitability, measured by the acquirer's earnings per share and calculated as the ratio of net profit after interest and tax to number of issued shares for firm i for time t;

$LEVE_{it}$ = leverage, measured by the acquirer's long-term debt to total assets and calculated as the ratio of long-term debt to total assets for firm i for time t;

$LIQU_{it}$ = liquidity, measured by the acquirer's net profit after interest and tax to net cash flow from operations less capital expenditure;

IR_{it} = interest rate, measured by the ratio of the annual average of the Inter Bank Interest Rate for firm i for time t;

ER_{it} = exchange rate, measured by the ratio of annual average of the Australian dollar to the United States dollar for firm i for time t;

SMI_{it} = stock market index, measured by the ratio of the annual return of Close Price of the All Ordinaries Index ASX500 of Australia for firm i for time t;

D_{ind1} to D_{ind7} and D_{ind9} = industry dummy variable, where D_{ind1} equals one if the sample industry is IND1 and zero otherwise, where D_{ind2} equals one if the sample industry is IND2 and zero otherwise, where D_{in3} equals one if the sample industry is IND3 and zero otherwise, where D_{ind4} equals one if the sample industry is IND4 and zero otherwise, where D_{ind5} equals one if the sample industry is IND5 and zero otherwise, where D_{ind6} equals one if the sample industry is IND6 and zero otherwise, where D_{ind7} equals one if the sample industry is IND7 and zero otherwise, and where D_{ind9} equals one if the sample industry is IND9 and zero otherwise;

Dt_1 to D_{t15} = time dummy variable, where D_{t1} equals one if the sample year is 1998 and zero otherwise, where D_{t2} equals one if the sample year is 1999 and zero otherwise, where D_{t3} equals one if the sample year is 2000 and zero otherwise, where D_{t4} equals one if the sample year is 2001 and zero otherwise, where D_{t5} equals one if the sample year is 2002 and zero otherwise, where D_{t6} equals one if the sample year is 2003 and zero otherwise, where D_{t7} equals one if the sample year is 2004 and zero otherwise, where D_{t8} equals one if the sample year is 2005 and zero otherwise, where D_{t9} equals one if the sample year is 2006 and zero otherwise, where D_{t10} equals one if the sample year is 2007 and zero otherwise, where D_{t11} equals one if the sample year is 2008 and zero otherwise, where D_{t12} equals one if the sample year is 2009 and zero otherwise, where D_{t13} equals one if the sample year is 2010 and zero otherwise, where D_{t14}equals one if the sample year is 2011 and zero otherwise, and where D_{t15} equals one if the sample year is 2012 and zero otherwise; and

e = error term

3.3.2 Estimation Methods

Following prior studies including Vyas *et al*. (2012), Erdogan (2012), Hernando *et al*. (2008), Kamaly (2007), the primary estimation method of regression for empirical models M1 to M6 (Equations 3.1 to 3.6) are the Ordinary Least Squares (OLS) multiple regression model. This study uses Statistical Package for the Social Sciences (SPSS) software version 26 to conduct the analysis to test the hypotheses H_1 to H_{10} using the Ordinary Least Squares (OLS) multiple regression model. To examine robustness of the main results, this study uses the generalised method of moments tests for the empirical models M1 to M6 (Equations 3.1 to 3.6). This study uses the EViews version 11 statistical software to conduct the robustness analysis using the generalised method of moments for the hypotheses H_1 to H_{10}.

3.3.3 Variable Measurement

3.3.3.1 Dependent Variable

This study measures the business acquisition decision in terms of the deal value (DV), and the study calculates this as the ratio of purchase price paid by the acquirer divided by the target's number of shares issued. The calculated DV is the price paid by the acquirer to buy one share of the target. The measure of business acquisition decision used in this study effectively reflects the value placed by the acquirer to buy one share of the target. Prior studies including Beatty *et al*. (1987), Cheng *et al*. (1989), Fraser and Kolari (1987), Hannan and Rhoades (1987), Palia (1993), and Rogowski and Simonson (1989) have used the deal value as the dependent variable. The data for the purchase price (the deal value) and the number of shares issued are obtained from the Thomson Reuters' Morningstar Data Analysis Premium.

3.3.3.2 Test Variables

Profitability (PROF)

Increased sales growth generates more profits for an acquirer and, this triggers acquirers to expand production capacity and technology innovation. Increased profitability of a firm increases return to its shareholders and their purchasing power (Erel *et al.,* 2010; Gort, 1969; Kamaly, 2007; Mandelker, 1974; Reid, 1968; Vernon, 1966; Vyas *et al*., 2012; Wells, 1966; Weston and Manisnhka, 1970). Prior studies have supported more profitable firms are having increased purchasing power as discussed in Section 2.5.1. Therefore, it is reasonable to expect more profitable acquirers to invest in business acquisitions.

Following prior studies such as those of Erel *et al.* (2012), Kastrinaki and Stoneman (2007), and Vyas *et al*. (2012), this study measures the acquirer's profitability as the ratio of net profit after interest and tax, divided by the number of shares issued.

Leverage (LEVE)

Prior studies including Vyas *et al*. (2012), Dessyllas and Hughes (2005), and Hernando *et al*. (2008) have supported increased leverage encourages firms to invest in investment opportunities like business acquisitions to generate greater returns as discussed in Section 2.5.2.

Following studies by Dessyllas and Hughes (2005), Hernando *et al*. (2008), and Vyas *et al*. (2012), this study measures the acquirer's leverage as the ratio of long - term debt to total assets.

Liquidity (LIQU)

As explained by the Free Cash Flow theory cash rich firms find riskier investments like business acquisitions are attractive to them due to the low cost of capital they have (Erel *et al*., 2010; Holl and Pickering, 1988; Hyytinen and Pajarinen, 2005; Jenson, 1986; Kaplan, 2007; Kamaly, 2007). The Efficiency theory explains that, cash rich acquirers find investment in business acquisitions attractive (Boyan and Peter, 2002; Vyas *et al*., 2012; Weston *et al.,* 2007). Prior studies as discussed in Section 2.5.3 have supported that greater liquidity encourages firms to invest in business acquisitions. Following previous studies including Vyas *et al*. (2012), this study measures the acquirer's liquidity as the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure.

Interest Rate (IR)

Interest rate has been identified by previous studies as a strong measure of impact arising from macro-economic environment. Interest rate impacts on a firm's cost of capital and investment opportunities (Becketti, 1986; Irina, 2021; Marsh, 1982; Kamaly, 2007; Melicher *et.al.*, 1983; Steiner, 1975; Taggart, 1977; Vasconcellos and Kish, 1996).

Following prior studies as discussed in Section 2.6.1, this study measures interest rate as the annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia.

Exchange Rate (ER)

Prior studies including, Erel *et al*. (2010) and Reed and Babool (2003), as discussed in Section 2.6.2, suggest that exchange rate has a strong impact on macro-economic environment. Reed and Babool (2003) support that changes in exchange rate impact on invetsments in business acquistions.

Following prior studies, this study measures the exchange rate as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia.

Stock Market Index (SMI)

Prior studies as discussed in Section 2.6.3, including Benzing (1992), Clark *et. al*. (1988), Clarke and Ioannidis (1996), Irina, 2021, Martynova and Renneborg (2008), Melicher *et.al.* (1983), Nelson (1959), Nelson (1966), Poloncheck and Sushka (1987), Sharma and Cernat-Gruci (1989), Shughart and Tollison (1984), Vasconcellos and Kish (1996 and 1998) and Weston (1961) suggest

that the behavior of stock market index influences aggregate business acquisition activity. Stock market index influences a firm's share prices. When share prices are at historic low, it creates a buyer's market for undertaking business acquisitions (Kaplan, 2007; Reed and Babool, 2003).

Following previous studies including Reed and Babool (2003), this study measures the stock market index as the annual return of Close Price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange.

3.4 Chapter Summary

This chapter presents the sample, data, and research methodology used in investigating RQ1 to RQ6. Acquirer's business acquisition decision (DV) is measured by the ratio of purchase price paid by the acquirer divided by the target's number of shares issued. This chapter presents the methodology used in testing whether the acquirer related characteristics of profitability, leverage and liquidity, and macro-economic characteristics of interest rate, exchange rate and stock market index are determinants of acquirer's business acquisition decision. The Ordinary Least Squares (OLS) multiple regression analysis is used as the primary testing mechanism for the hypotheses H_1 to H_{10}. The robustness of the main tests results for the empirical models M1 to M6 (Equations 3.1 to 3.6) is examined using the generalised method of moments analysis.

The acquirer related independent variables include the test variables of profitability (H_1), leverage (H_2) and liquidity (H_3), as well as control variables, the industry dummies (H_4) and time dummies (H_5). The macro-economic related independent variables include the test variables of interest rate

(H_6), exchange rate (H_7) and stock market index (H_8), as well as control variables, the industry dummies (H_9) and time dummies (H_{10}). Statistical Package for the Social Sciences (SPSS) software version 26 is used in this study. The measurements for all variables are explained in this chapter. The next chapter, Chapter 4, presents and analyses the results from testing the hypotheses H_1 to H_5.

Chapter 4: An Empirical Analysis of the Factors Influencing the Business Acquisition Decision - Acquirer Related Characteristics

4.1 Introduction

The previous chapter discussed the research methodology employed to address the first to tenth hypothesis, (H_1 to H_{10}), related to this study's first to sixth research questions (RQ1 to RQ6). This chapter presents the empirical results of multiple regression analysis which tests the hypotheses 1 to 5 ($H_1 – H_5$), related to research questions 1 to 3 (RQ1 to RQ3), that is, RQ1: How the acquirer's profitability (PROF) , leverage (LEVE), and liquidity (LIQU) affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange; RQ2: whether the industry classification (IND) of acquirer impact on the business acquisition decision in RQ1; and RQ3: whether the time (TIME) in terms of when the business acquisition occurs impact on the business acquisition decision in RQ1. Specifically, this study examines whether an acquirer's profitability (H_1), leverage (H_2), liquidity (H_3), industry classification (H_4), and the time (H_5) are associated with the business acquisition decision of acquirers' that are listed on the Australian Securities Exchange. Ordinary Least Squares (OLS) multiple regression analysis is performed for the regression models: M1 (Equation 3.1) to test the hypotheses H_1 to H_3, related to RQ1, M2 (Equation 3.2) related to RQ2, and M3 (Equation 3.3) related to RQ3.

Chapter 4: An Empirical Analysis of the Factors Influencing the Business Acquisition Decision (the Deal Value) - Acquirer Related Characteristics

This chapter begins with a discussion of the descriptive statistics for the independent and dependent variables (Section 4.2). The correlation analysis of the independent variables appears in the Section 4.3.1. The results of the multiple regression analysis used in testing the hypotheses H_1 to H_5 related to RQ1 to RQ3 using statistical models M1 to M3 (Equations 3.1 to 3.3) are discussed in the Section 4.3.2. Section 4.4 provides the robustness tests results of the generalised method of moments analysis for testing the hypotheses H_1 to H_5 related to RQ1 to RQ3 for the statistical models M1 to M3 (Equations 3.1 to 3.3). Section 4.5 concludes this chapter by summarising the findings of testing the hypotheses H_1 to H_5.

4.2 Descriptive Statistics

Descriptive statistics are calculated for the independent and dependent variables employed to investigate H_1 to H_3 related to RQ1 to obtain an overview of the nature of the data to be analysed. The variables are:1) independent variables which are the profitability (PROF) proxied by the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares, the leverage (LEVE) proxied by the ratio of long term debt to total assets, and the liquidity (LIQU) proxied by the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure; 2) Deal Value (DV) which is the measure of the acquirer's business acquisition decision in this study, is calculated as the ratio of the purchase price paid by the acquirer divided by the target's number of shares issued. The table 4.1 provides the descriptive statistics for acquirer related independent variables and the dependent variable.

Chapter 4: An Empirical Analysis of the Factors Influencing the Business Acquisition Decision (the Deal Value) - Acquirer Related Characteristics

Table 4.1: Descriptive statistics of independent and dependent variables – Acquirer characteristics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Independent Variables					
PROF	160	-0.704	8.126	0.340	0.794
LEVE	160	0.000	0.985	0.217	0.181
LIQU	160	-354.945	53.166	-2.591	29.481
Dependent Variable					
DV	160	0.499	125.000	7.899	12.452

Note: DV = acquirer's business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; PROF = acquirer's profitability, where PROF is the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares; LEVE = acquirer's leverage, where LEVE is the ratio of long term debt to total assets; LIOU = acquirer's liquidity, where LIOU is the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure.

The study uses a sample that represents 160 business acquisitions of acquirers that are listed on the Australian Securities Exchange during the period 1997 to 2012. As per the descriptive statistics in the table 4.1, the study estimates that approximately 95 per cent of the acquirers' profitability data falls in the range of -1.248 to +1.929 given its mean value of 0.340 and the standard deviation of 0.794. The mean value of acquirer's leverage is 0.217 and the standard deviation is 0.181. The study estimates that approximately 95 per cent of the acquirers' leverage falls within the range of -0.146 to +0.579. At 95 per cent confidence level, the study estimates that the acquirer's liquidity falls within the range of -61.553 to +56.371 following its mean value of -2.591 and a standard deviation of 29.481.

Chapter 4: An Empirical Analysis of the Factors Influencing the Business Acquisition Decision (the Deal Value) - Acquirer Related Characteristics

As shown in the table 4.1, the mean value of the dependent variable DV 7.899 indicates that the average value of acquirer's business acquisition decision (which is the deal value an acquirer is willing to pay to buy one share of a target firm) is 7.899. Given the standard deviation of 12.452 and the mean of 7.899 of the DV, the study estimates that approximately 95 per cent of the DVs fall in the range of -17.005 to +32.803. The higher standard deviation of 12.452 for the DV as given in the table 4.1 suggests a wider variation in data points from its average value 7.899. This is due to few outliers in the sample that do not significantly affect the data distribution due to the larger size of the sample. The substituted mean value has been used for these outliers in performing statistical computation to ensure there are no unduly influential outliers, high leverage points or highly influential points biasing the models' outcome (Cousineau and Chartier, 2010). The table 4.2 below provides the outliers relating to the dependent variable DV.

Table 4.2: Outliers - dependent variable

Outliers (Casewise Diagnostics) [a,b]

Case Number	Std. Residual	DV	Predicted Value	Residual
1	5.066	52.094	12.157	39.937
21	4.348	38.496	4.221	34.275
71	5.632	44.223	-0.173	44.396
112	-3.081	12.453	36.743	-24.290
140	-3.438	5.420	32.524	-27.104

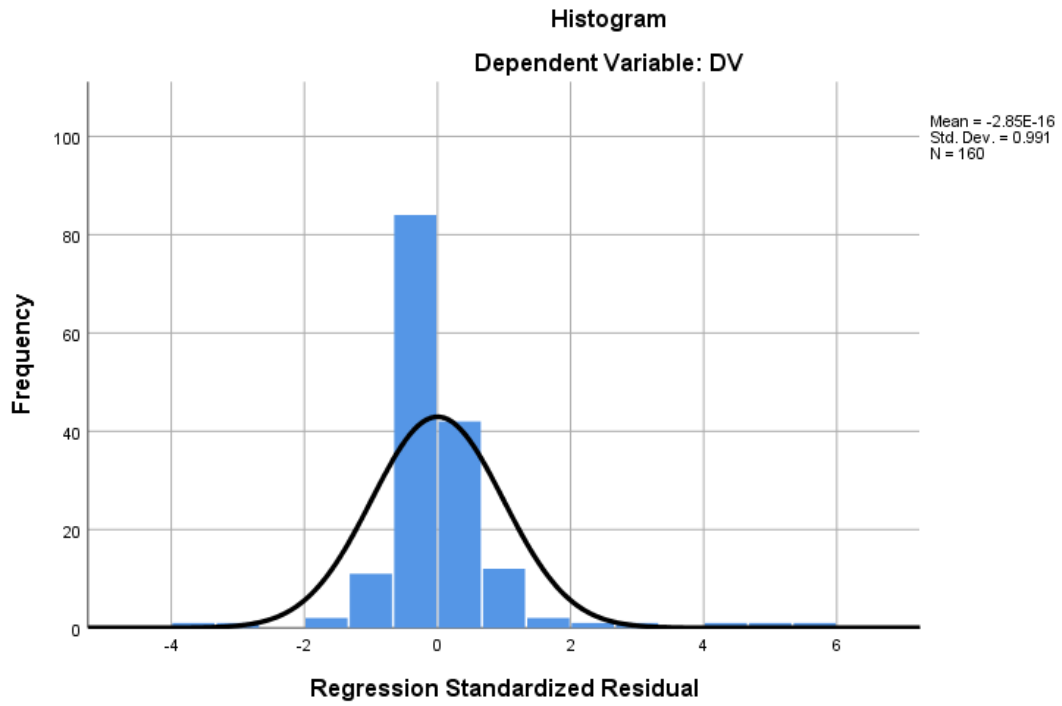
a. Dependent Variable: DV

b. For outliers, the substituted mean has been used in the statistical computation.

Note: DV = acquirer's business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued.

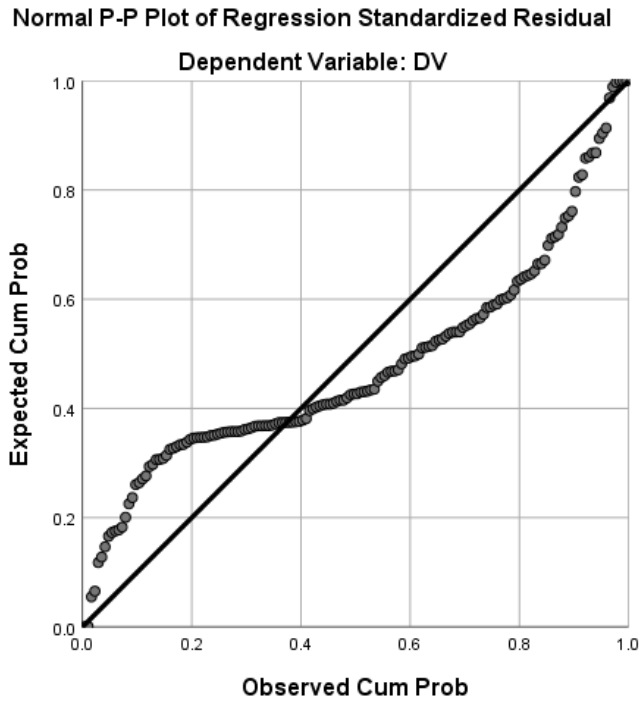
The Casewise Diagnostics shown in the table 4.2 above is a list of all cases where size of residual exceeds 3 units. The residual for each case is the difference between the actual outcome and the outcome predicted by the model. Given the size of the sample of 160 observations five outliers count to a 3 per cent. These outliers have a relatively small impact on the model output but keeping them means the study sample better represents the diversity of the population. Histogram of the residuals for the dependent variable in chart 4.1 below suggests that they are close to being normally distributed with more residuals are having values close to zero.

Chart 4.1: Histogram - dependent variable



P-P plot of regression of standardised residuals for the dependent variable in the chart 4.2 below further suggests that the values of residuals are normally distributed.

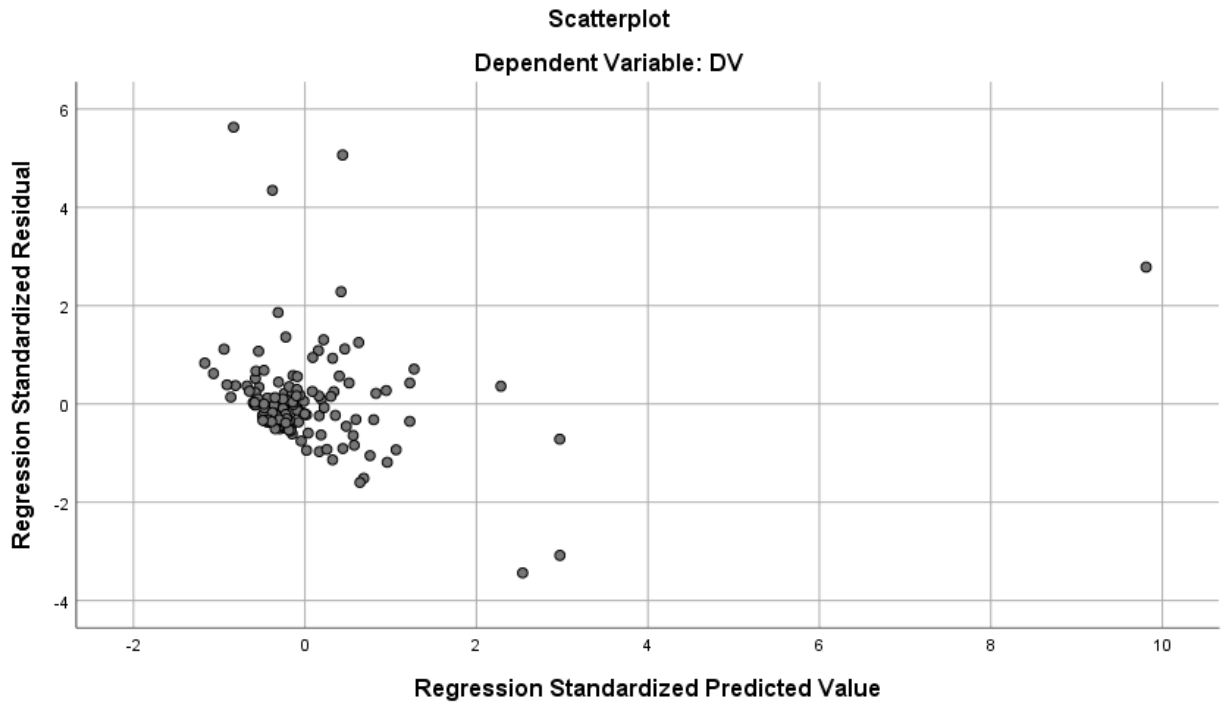
Chart 4.2: P-P Plot of regression of standardised residual - dependent variable



The P-P plot in the above chart 4.2 reassures normality of the data distribution. There does seem to be some deviation from normality between the observed cumulative probabilities, but it appears to be minor. Overall, there does not appear to be a severe problem with non-normality of residuals.

Scatterplot of standardised residuals against standardised predicted values for dependent variable is shown in the chart 4.3 below.

Chart 4.3: Scatterplot of standardised residuals against standardised predicted values - dependent variable



The above scatterplot in the chart 4.3 shows that the residuals are not distributed in any pattern with the predicted values. This suggests that the study's data model does not violate the assumption of homoscedasticity. The variance of errors is constant across observations (homoscedastic). The residuals are normally distributed with a mean centered around zero. It appears that the relationship of standardised predicted values to standardised residual values is roughly linear around zero. This

shows that the relationship between the response variable and predictors is zero as the residuals seem to be randomly scattered around zero, and this meets the assumption of linearity. The pattern shown here indicates that there are no problems with the assumption that the residuals are normally distributed at each level of dependent variable and constant in variance across levels of the dependent variable DV. Plotted residuals suggest no evidence of violating the assumption of heteroscedasticity. Statistically significant evidence indicates the null hypothesis of no heteroscedasticity. Overall, the descriptive statistics in the table 4.1 indicates that the sample data of the dependent variable are normally distributed.

4.3 Analysis of the Factors Influencing the Business Acquisition Decision – Acquirer Related Characteristics

4.3.1 Correlation Analysis

The Pearson correlation coefficients[23] between the independent variables are presented in the table 4.3 to validate that the regression models used do not experience a serious multicollinearity problem.

Table 4.3: Pearson correlation coefficients between independent variables

Variable	PROF	LEVE	LIQU
PROF	-	-0.181**	0.041
LEVE	-0.181**	-	-0.093
LIQU	0.041	-0.093	-

Note: PROF = acquirer's profitability, where PROF is the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares; LEVE = acquirer's leverage, where LEVE is the ratio of long term debt to total assets; and LIOU = acquirer's liquidity, where LIOU is the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure.
** Significant at the 5% (2-tailed).

Pearson correlation represents the unique predicted capacity of each independent variables PROF, LEVE and LIQU. The correlation coefficient of negative 0.181 between PROF and LEVE is significant at 5 per cent level. This suggests that 95 per cent of the sample related to PROF and LEVE provides accurate information about the population. The multicollinearity problem exists if the independent variables are highly correlated with each other. As suggested by Tabachnick and

[23] Correlation is where the multiple regression is based upon mainly as it measures the strength and direction of linear relationships between pairs of continuous variables (Gujarati, 2015).

Fidell (2007), correlation values exceeding 0.900 are regarded as highly correlated. The correlation of negative 0.181 between the two independent variables PROF and LEVE is below 0.900. This suggests that there is no serious multicollinearity between independent variables, PROF and LIVE that could jeopardise the regression results (Tabachnick and Fidell, 2007). Due to the size of the sample, this does not affect to alter the results of the model outputs and therefore, no serious multicollinearity problems have occurred.

The multicollinearity[24] statistics of the regression models M1 (Equation 3.1), M2 (Equation 3.2) and M3 (Equation 3.3) are given in the tables 4.4, 4.5 and 4.6 respectively in the Section 4.3.2. The tolerance and variance inflations factor values in the tables 4.4, 4.5 and 4.6 further show evidence that there is no serious multicollinearity among the independent variables of PROP, LEVE, and LIQU. None of the variance inflation factors (VIF) exceeds five, suggesting that the regressions have high validity and a high predicting power.

The table 4.3 above shows that there is a strong positive correlation between PROF and LIQU with a correlation value of +0.041, suggesting that when PROF increases LIQU also increases. In contrast there is a strong negative correlation between LEVE and LIQU with a correlation value

[24] The tolerance (T: 1 - R^2) and the variance inflation factor (VIF: 1 divided by T) are direct measures of multicollinearity. Closer the tolerance value to 1, lower the multicollinearity problem exists. As the degree of multicollinearity increases, the coefficient estimates become unstable and the standard errors for the coefficients can become wildly inflated (Williams, 2015).

of -0.093, suggesting that when LEVE increases LIQU decreases. The correlation statistics in the table 4.3 show evidence the high predicting power of the regression models of the study.

4.3.2 Multiple Regression Results and Analysis

This section discusses the multiple regression results for testing the hypotheses: H_1 to H_3 related to RQ1, H_4 related to RQ2 and H_5 related to RQ3.The statistical models M1, M2 and M3 mentioned in the Section 3.3.1 are estimated using the Ordinary Least Squares (OLS) method. The statistical model M1 (Equation 3.1) tests the RQ1, model M2 (Equation 3.2) tests the RQ2 and, model M3 (Equation 3.3) tests the RQ3 of this study. The tables 4.4, 4.5 and 4.6 present the results of the regression for the models M1, M2 and M3, respectively.

The dependent variable of this study is the DV which is the proxy for the business acquisition decision. The results of the regression for the dependent variable DV using the independent variables PROF, LEVE, and LIQU during 1997 to 2012 for the model M1, are reported in the table 4.4 below.

Chapter 4: An Empirical Analysis of the Factors Influencing the Business Acquisition Decision (the Deal Value) - Acquirer Related Characteristics

Table 4.4: Multiple regression results with dependent variable: DV, for the model M1 (Equation 3.1) during 1997-2012

		Model M1				
Dependent Variable		**DV**				
					Collinearity Statistics	
Variables		**Beta**	**Standardized Coefficients**	**t-statistics**	**Tolerance**	**VIF**
R	0.779					
R^2	0.607					
Error term	0.393					
Adjusted R^2	0.599					
F - statistic	80.237***					
Constant		2.880		2.727***		
Independent Variables						
PROF		12.327	0.786	15.400***	0.967	1.034
LEVE		3.507	0.051	0.995	0.960	1.042
LIQU		-0.025	-0.059	-1.178	0.991	1.009

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; PROF = acquirer's profitability, where PROF is the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares; LEVE = acquirer's leverage, where LEVE is the ratio of long term debt to total assets; LIQU = acquirer's liquidity, where LIQU is the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure.
Model M1: $DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + e$
*** Significant at the 1% level.

The table 4.4 above presents multiple correlation coefficient (*R*), the multiple determination (R^2), *Adjusted R-squared*, *F- statistics*, constant, beta values for the independent variables PROP, LEVE, and LIQU, *t-statistics* and collinearity statistics for the model M1. The value of the multiple correlation coefficient (*R*) 0.779 confirms linear correlation between the observed and model predicted values of the dependent variable DV. Larger *R* value 0.779 in the model M1

indicates its prediction power and statistically significant relationship between the dependent variable DV and the independent variables PROF, LEVE and LIQU.

The multiple determination (R^2) value 0.607 is the explained variance of the model. The R^2 value 0.607 indicates that 60.7 per cent of the total variability in the dependent variable DV is accounted for by all independent variables of PROF, LEVE, and LIQU. The unexplained variance or the error term of the model M1 is 0.393 which is 1 minus the explained variance 0.607. The unexplained variance or the error term of 0.393 indicates that 39.30 per cent of the total variability in the dependent variable DV is not accounted for by the independent variables of PROF, LEVE, and LIQU.

The *adjusted* R^2 of the model M1 is 0.599. The reason that the *adjusted* R^2 value 0.599 to be below the R^2 value 0.607 is that the *adjusted* R^2 only accommodates those variables that contribute to the value of the dependent variable DV.

The *F-statistics* 80.237 units of the model M1 (Equation 3.1) show overall significance of the model at the 1 per cent level. The *F-statistics* show whether the overall regression model is a good fit for the data. The *F-statistics* 80.237 units that is statistically significant at 1 per cent level indicate that the independent variables PROF, LEVE, and LIQU jointly statistically significantly predict the dependent variable DV. The statistically significant *F-statistics* of the model M1 suggest that most of the variation in the dependent variable DV is explained by the model. This

result suggests that the regression model M1 is a good fit for the data, that means the variation explained by the model is not due to chance.

The beta values[25] measure how much the dependent variable DV varies with an independent variable when all other independent variables are held constant. In other words, the beta values provide the expected change in the dependent variable for one-unit change in an independent variable. The beta value of the constant, that is the y intercept +2.880 of the model M1 is the predicted value of the dependent variable DV when all independent variables PROF, LEVE, and LIQU equal to zero. This means that the average value of the dependent variable DV (the business acquisition decision) tends to be +2.880 units when all independent variables PROF, LEVE, and LIQU take the value of zero. The regression coefficient +2.880 of the model M1 is statistically significant at 1 per cent level. This suggests at 99 per cent confidence level, an acquirer intends to pay 2.889 units to buy one share of a target without any influence from the acquirer's profitability, leverage, and liquidity.

The beta values of the model M1 for the independent variables, PROF, LEVE, and LIQU are +12.327, +3.507, and -0.025 respectively. The beta value of the independent variable PROF +12.327 is statistically significant at 1 per cent level. This result suggests that at 99 per cent confidence level, for every unit increase in the beta value for PROF, there is 12.327 units increase in the dependent variable DV. Similarly, for every unit increase in LEVE there is 3.507 units

[25] Beta values are also referred as unstandardised coefficients or regression coefficients (Gujarati, 2015).

increase in the DV and every unit increase in LIQU there is 0.025 units decrease in the DV. The results suggest that PROF is the highest contributor having the highest standardised coefficient of 0.786 for predicting the dependent variable DV in the model M1. More profitable firms are interested in undertaking business acquisitions to further their market share and competitive position in their industry (Vyas *et al*., 2012). More profitable acquirers tend to respond with higher bids for the purpose of acquiring target firms when these business acquisitions provide either efficiency gains or cost savings to the acquirer (Kastrinaki, and Stoneman, 2007). More profitable acquirers tend to target capital intensive firms for business acquisition transactions to generate increased returns to their shareholders (DeAngelo and Masulis, 1980). Firms that are more capital intensive have significant investments in plant and equipment. These firms can claim more capital allowances (depreciation allowance) and investment tax credits when calculating their taxable income. More profitable acquirers tend to respond with higher bids for more capital intensive targets in undertaking business acquisitions, aiming to retain more money in the business rather than paying it out as tax post undertaking the business acquisition (Bondt and Thompson, 1992). The results of the study evidence that more profitable firms are interested in investing in business acquisitions as a mean to enhance their market share and profitability. Mining boom in 2011 has supported to increase domestic business acquisitions for more profitable acquirers particularly aiming to acquire more capital-intensive targets. Further, more profitable firms have experienced a competitive advantage during the study period to target business acquisitions as a strategic investment to enhance their production or service capacity, market share and profitability rather than investing their profits internally to expand capacity and compete to grab market share from

their competitors. Increased competition from globalisation has encouraged more profitable domestic Australian firms to invest in domestic business acquisitions to enhance their market share in the global market.

The results of the study supported the study predicted positive association between the acquirer's leverage and the business acquisition decision (the deal value). More profitable firms use more debt as a controlling mechanism to discipline managers of these firms to encourage them to continually generate greater returns (Jenson, 1986). Highly levered firms also benefit the incentives coming from the federal tax structure. Debt-equity ratio directly affects the cost of capital, return on investments and the growth strategy of a firm when deciding on investing in organic growth or business acquisitions. Increased use of debt induces equity holders to pursue business acquisitions to generate greater returns to cover increased debt obligations (Brander and Lewis, 1986; Jensen and Meckling, 1976). As debt providers expect greater returns, firms holding increased debts tend to invest in riskier investments like business acquisitions to generate increased returns (Erel *et al*., 2010; Kamaly, 2007). Highly levered firms bid higher prices for less levered targets in undertaking business acquisitions (Erdogan, 2012). A target that is more costly to be taken over has less debt (Israel, 1991).When targets are less levered their low leverage reduces the risk of default and increases the debt capacity of the acquirer (Erdogan,2012; Palepu, 1986; Stulz, 1988). The results of the study evidence that during the study period highly levered acquires have interested in investing in business acquisitions of targets that are less levered due to their low cost of capital. The results evidence that highly levered firms are motivated to pay a higher price

for a share of a target that is less levered in business acquisitions aiming to maximise returns to their shareholders. The competitive market environment followed by the financial deregulation, liberalisation, industrial revolution, anti-trust law enforcement, technological changes, privatisation and internationalisation have encouraged highly levered firms to invest business acquisitions of less levered targets to maintain their competitive advantage in the domestic and international markets.

The results of the study generated a negative association between the acquirer's liquidity and the business acquisition decision (the deal value) even though the study predicted a positive association. This study measures the acquirer's liquidity as the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure. Internally generated cash has a low cost of capital. Acquirers with high growth opportunities and high liquidity tend to respond with lower bids exercising their bargaining power for targets that have high growth prospects but has low liquidity.

Collinearity statistics, tolerance and VIF (variance inflation factors) values are measures to evidence any multicollinearity in the regression analysis. Tolerance and VIF values measure the collinearity among the independent variables PROP, LEVE, and LIQU. None of the variance inflation factors (VIF) exceeds five, suggesting that the regression results have high validity. In summary, the regression results of the model M1 indicate that there is a statistically significant positive association between the acquirer's profitability (PROF) and the business acquisition

decision (DV), supporting H_1. The regression results of the model M1 also support H_2 reporting a positive association between the acquirer's leverage (LEVE) and the business acquisition decision (DV). The regression results do not support H_3 reporting a negative association between the acquirer's liquidity (LIQU) and the business acquisition decision (DV), however this association is not statistically significant.

The results of the regression for the dependent variable DV using the independent variables PROF, LEVE, LIQU, and the dummy variable for the industry classification (IND1 to IND7 and IND9) during 1997 to 2012 for the model M2, are reported in the table 4.5 below.

Chapter 4: An Empirical Analysis of the Factors Influencing the Business Acquisition Decision (the Deal Value) - Acquirer Related Characteristics

Table 4.5: Multiple regression results with dependent variable: DV, for the model M2 (Equation 3.2) during 1997-2012

		Model M2				
Dependent Variable		**DV**				
					Collinearity Statistics	
Variables		**Beta**	**Standardized Coefficients**	**t-statistics**	**Tolerance**	**VIF**
R	0.794					
R^2	0.630					
Error term	0.370					
Adjusted R^2	0.603					
F - statistic	22.956***					
Constant		2.530		1.765*		
Independent Variables						
PROF		12.488	0.797	15.476***	0.942	1.061
LEVE		7.021	0.102	1.805*	0.781	1.281
LIQU		-0.037	-0.088	-1.634	0.864	1.158
Dummy Variables -Industry Classification						
IND1		-0.565		-0.231	0.804	1.243
IND2		1.063		0.524	0.710	1.408
IND3		-0.692		-0.317	0.739	1.352
IND4		-1.185		-0.578	0.718	1.393
IND5		-6.843		-1.983**	0.772	1.296
IND6		1.937		0.865	0.733	1.364
IND7		-0.855		-0.229	0.909	1.100
IND9		-5.777		-1.604	0.709	1.410

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; PROF = acquirer's profitability, where PROF is the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares; LEVE = acquirer's leverage, where LEVE is the ratio of long term debt to total assets; LIOU = acquirer's liquidity, where LIOU is the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure; and IND1 to IND7 and IND9 = industry classification, where IND1 to IND7 and IND9 are dummy variables to capture industry classifications, coded as one if the industry classification equals IND1, IND2, IND3, IND4, IND5, IND6, IND7 or IND9 and zero otherwise, IND8 is used as the reference variable.

Model M2: $DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + \beta_7 D_{ind1} + \beta_8 D_{ind2} + \beta_9 D_{ind3} + \beta_{10} D_{ind4} + \beta_{11} D_{ind5} + \beta_{12} D_{ind6} + \beta_{13} D_{ind7} + \beta_{14} D_{ind9} + e$

*** Significant at the 1% level.

** Significant at the 5% level.

* Significant at the 10% level.

The table 4.5 above presents multiple correlation coefficient (*R*), the multiple determination (R^2), a*djusted R-squared*, *F- statistics*, constant, beta values for the independent variables PROP, LEVE, and LIQU, and for the dummy variables IND1 to IND7 and IND9 that represent industry classification, *t-statistics* and collinearity statistics for the model M2. The value of the multiple correlation coefficient (*R*) 0.794 confirms linear correlation between the observed and model predicted values of the dependent variable DV. Larger *R* value 0.794 in the model M2 indicates its prediction power and statistically significant relationship between the dependent variable DV and the independent variables PROF, LEVE and LIQU, and the industry dummy variables IND1 to IND7 and IND9.

The multiple determination (R^2) value 0.630 is the explained variance of the model. The R^2 value 0.630 indicates that 63.0 per cent of the total variability in the dependent variable DV is accounted for by all independent variables of PROF, LEVE, and LIQU, and the industry dummy variables IND1 to IND7 and IND9. The unexplained variance or the error term of the model M2 is 0.370 which is 1 minus the explained variance 0.630. The unexplained variance or the error term 0.370 indicates that 37.00 per cent of the total variability in the dependent variable DV is not accounted for by the independent variables of PROF, LEVE, and LIQU, and the industry dummy variables IND1 to IND7 and IND9.

The *adjusted* R^2 of the model M2 is 0.603. The reason that the *adjusted* R^2 value 0.603 to be below the R^2 value 0.630 is that the *adjusted* R^2 only accommodates those variables that contribute to the value of the dependent variable DV.

The *F-statistics* 22.956 units of the model M2 (Equation 3.2) show overall significance of the model at the 1 per cent level. The *F-statistics* 22.956 units that is statistically significant at 1 per cent level indicate, that the independent variables PROF, LEVE, and LIQU, and the industry dummy variables IND1 to IND7 and IND9 jointly statistically significantly predict the dependent variable DV. The statistically significant *F-statistics* of the model M2 suggest that most of the variation in the dependent variable DV is explained by the model. This result suggests that the regression model M2 is a good fit for the data, that means the variation explained by the model is not due to chance.

The beta value of the constant, that is the y intercept +2.530 of the model M2 is the predicted value of the dependent variable DV when all independent variables PROF, LEVE, and LIQU, and the industry dummy variables IND1 to IND7 and IND9 equal to zero. This means that the average value of the dependent variable DV (the business acquisition decision) tends to be +2.530 units when all independent variables PROF, LEVE, and LIQU, and the industry dummy variables IND1 to IND7 and IND9 take the value of zero. The regression coefficient +2.530 is statistically significant at 10 per cent level. This suggests at 90 per cent confidence level, an acquirer intends

to pay 2.530 units to buy one share of a target without any influence from the acquirer's profitability, leverage, and liquidity, and the industry classification.

The beta values of the model M2 for the independent variables, PROF, LEVE, and LIQU are +12.488, +7.021, and -0.037 respectively. The beta value of the independent variable PROF +12.488 is statistically significant at 1 per cent level. This result suggests that at 99 per cent confidence level, for every unit increase in the beta value for PROF, there is 12.488 units increase in the dependent variable DV. The beta value of LEVE +7.021 is statistically significant at 10 per cent level suggesting that at 90 per cent confidence level, for every unit increase in the beta value for LEVE, there is 7.021 units increase in the dependent variable DV. Similarly, for every unit increase in LIQU there is 0.037 units decrease in the DV, however this is not statistically significant. The results of the model M2 suggest that PROF and LEVE are the highest contributors having standardised coefficient of 0.797 and 0.102 ranking respectively for predicting the dependent variable DV. These findings suggest that more profitable acquirers who operates in growth industries tend to place higher bids for targets who operates in growth industries when they undertake busines acquisitions to enhance their competitive position in the industry and to realise efficiency gains to be more competitive in terms of low cost of production, more enhanced product quality, and to deliver affordable prices to consumers. The findings also suggest that highly levered acquirers who operate in growth industries tend to place higher bids for less levered targets who operates in growth industries when they undertake busines acquisitions aiming to generate monopolistic returns by establishing an industry concentration. The study results relating to the

acquirer's liquidity and the impact of acquirer's industry classification suggest that cash rich acquirers who operate in growth industries due to their healthy cash position, the associated low cost of capital and the bargaining power, tend to bid low prices for targets who experience cash flow difficulties and operate in growth industries.

The beta values of the model M2 for the industry dummy variables IND1 to IND7, and IND9 are -0.565, +1.063, -0.692, -1.185, -6.843, +1.937, -0.855, and -5.777 respectively. The study uses Metals and Mining industry (IND8) as the reference variable in analysing the regression. The beta value -6.843 for the industry dummy variable IND5 is statistically significant at 5 per cent level. The dummy variable IND5 represents the Entertainment and Media industry. This suggests that at 95 per cent confidence level, for every unit increase in the beta value for Entertainment and Media industry, there is 6.843 units decrease in the dependent variable DV.

Tolerance and VIF values measure the collinearity among the independent variables PROP, LEVE, and LIQU, and the industry dummy variables IND1 to IND7 and IND9. None of the variance inflation factors (VIF) exceeds five, suggesting that the regression results have high validity. In summary, the regression results for the model M2 show evidence that there is a statistically significant positive association between acquirer's profitability (PROF), leverage (LEVE) and the business acquisition decision (the deal value), supporting H_1 and H_2. The regression results do not support H_3 reporting a negative association between the acquirer's liquidity (LIQU) and the business acquisition decision (the deal value), however this association is not statistically

significant. The results of the model M2 confirms that the industry classification of an acquirer impacts on their business acquisition decision when they consider impact of the acquirer's profitability (PROF), leverage (LEVE) and liquidity (LIQU), supporting H_4.

The results of the regression for the dependent variable DV using the independent variables PROF, LEVE, LIQU, and the time dummy variable (TIME1998 to TIME2012) during 1997 to 2012 for the model M3, are reported in the table 4.6 below.

Table 4.6: Multiple regression results with dependent variable: DV, for the model M3 (Equation 3.3) during 1997-2012

		Model M3				
Dependent Variable		**DV**				
					Collinearity Statistics	
Variables		**Beta**	**Standardized Coefficients**	**t-statistics**	**Tolerance**	**VIF**
R	0.794					
R^2	0.630					
Error term	0.370					
Adjusted R^2	0.583					
F - statistic	13.334***					
Constant		5.161		1.976**		
Independent Variables						
PROF		12.288	0.784	13.788***	0.812	1.231
LEVE		3.515	0.051	0.928	0.865	1.156
LIQU		-0.024	-0.058	-1.069	0.895	1.117
Dummy Variables -Time						
TIME1998		-2.803		-0.777	0.531	1.885
TIME1999		-1.412		-0.391	0.529	1.890
TIME2000		-3.200		-0.885	0.528	1.893
TIME2001		-2.927		-0.806	0.523	1.911
TIME2002		-5.073		-1.395	0.522	1.917
TIME2003		-4.687		-1.293	0.525	1.905
TIME2004		2.218		0.614	0.529	1.891
TIME2005		-2.600		-0.705	0.507	1.973
TIME2006		-1.026		-0.283	0.526	1.902
TIME2007		-2.173		-0.588	0.505	1.979
TIME2008		-3.752		-1.033	0.524	1.910
TIME2009		-0.682		-0.187	0.522	1.917
TIME2010		-4.749		-1.315	0.529	1.890
TIME2011		-0.552		-0.147	0.487	2.054
TIME2012		-2.868		-0.792	0.527	1.899

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; PROF = acquirer's profitability, where PROF is the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares; LEVE = acquirer's leverage, where LEVE is the ratio of long term debt to total assets; LIOU = acquirer's liquidity, where LIOU is the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure; and TIME1998 – TIME2012 = time, where TIME1998 – TIME2012 are time dummy variables, coded as one if the year equals 1998 - 2012 and zero otherwise,TIME1997 is used as the reference variable.

Model M3: $DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + \beta_{15} D_{t1} + \beta_{16} D_{t2} + \beta_{17} D_{t3} + \beta_{18} D_{t4} + \beta_{19} D_{t5} + \beta_{20} D_{t6} + \beta_{21} D_{t7} + \beta_{22} D_{t8} + \beta_{23} D_{t9} + \beta_{24} D_{t10} + \beta_{25} D_{t11} + \beta_{26} D_{t12} + \beta_{27} D_{t13} + \beta_{28} D_{t14} + \beta_{29} D_{t15} + e$

*** Significant at the 1% level.

** Significant at the 5% level.

The table 4.6 above presents multiple correlation coefficient (*R*), the multiple determination (R^2), *Adjusted R-squared*, *F- statistics*, constant, beta values for the independent variables PROP, LEVE, and LIQU, and for the time dummy variables TIME1998 to TIME2012, *t-statistics* and collinearity statistics for the model M3. The value of the multiple correlation coefficient (*R*) 0.794 confirms linear correlation between the observed and model predicted values of the dependent variable DV. Larger *R* value 0.794 in the model M3 indicates its prediction power and statistically significant relationship between the dependent variable DV and the independent variables PROF, LEVE and LIQU, and the time dummy variables TIME1998 to TIME2012.

The multiple determination (R^2) value 0.630 is the explained variance of the model. The R^2 value 0.630 indicates that 63.0 per cent of the total variability in the dependent variable DV is accounted for by all independent variables of PROF, LEVE, and LIQU, and the time dummy variables TIME1998 to TIME2012. The unexplained variance or the error term of the model M3 is 0.370 which is 1 minus the explained variance 0.630. The unexplained variance or the error term 0.370 indicates that 37.00 per cent of the total variability in the dependent variable DV is not accounted for by the independent variables of PROF, LEVE, and LIQU, and the time dummy variables TIME1998 to TIME2012.

The *adjusted* R^2 of the model M3 is 0.583. The reason that the *adjusted* R^2 value 0.583 to be below the R^2 value 0.630 is that the *adjusted* R^2 only accommodates those variables that contribute to the value of the dependent variable DV.

The *F-statistics* 13.334 units of the model M3 (Equation 3.3) show overall significance of the model at the 1 per cent level. The *F-statistics* 13.334 units that is statistically significant at 1 per cent level indicate, that the independent variables PROF, LEVE, and LIQU, and the time dummy variables TIME1998 to TIME2012 jointly statistically significantly predict the dependent variable DV. The statistically significant *F-statistics* of the model M3 suggest that most of the variation in the dependent variable DV is explained by the model. This result suggests that the regression model M3 is a good fit for the data, that means the variation explained by the model is not due to chance.

The beta value of the constant, that is the y intercept +5.161 of the model M3 is the predicted value of the dependent variable DV when all independent variables PROF, LEVE, and LIQU, and the time dummy variables TIME1998 to TIME2012 equal to zero. This means that the average value of the dependent variable DV (the business acquisition decision) tends to be +5.161 units when all independent variables PROF, LEVE, and LIQU, and the time dummy variables TIME1998 to TIME2012 take the value of zero. The regression coefficient +5.161 is statistically significant at 5 per cent level. This suggests at 95 per cent confidence level, an acquirer intends to pay 5.161 units to buy one share of a target without any influence from the acquirer's profitability, leverage, and liquidity, and the time.

The beta values of the model M3 for the independent variables, PROF, LEVE, and LIQU are +12.288, +3.515, and -0.024 respectively. The beta value of the independent variable PROF

+12.288 is statistically significant at 1 per cent level. This result suggests that at 99 per cent confidence level, for every unit increase in the beta value for PROF, there is 12.288 units increase in the dependent variable DV. Similarly, for every unit increase in LEVE there is 3.515 units increase in the DV and every unit increase in LIQU there is 0.025 units decrease in the DV, however these are not statistically significant. The results of the model M3 suggest that PROF is the highest contributor having standardised coefficient of 0.784 for predicting the dependent variable DV.

The beta values of the model M3 for the time dummy variables TIME1998 to TIME2012 are –2.803, -1.412, -3.200, -2.927, -5.073, -4.687, +2.218 (TIME2004), -2.600, -1.026, -2.173, -3.752, -0.682, -4.749, -0.552, and -2.868 respectively. The study uses year 1997 (TIME1997) as the reference variable in analysing the regression. None of the beta values of the time dummy variables TIME1998 to TIME2012 is statistically significant. The beta values of the time dummy variables evidence a negative association except for TIME2004 with the business acquisition decision. The beta values of the time dummy variable TIME2004 +2.218 reports a positive association with the business acquisition decision. During 2004 the Australian economy grew by 2.3 per cent following a strong growth in 2003. The employment increased by a strong 3 per cent during 2004 reducing the unemployment rate to a 28-year low of 5 per cent. The domestic business acquisition activity has been increased tremendously in 2004 from 2003 recording a total deal value of $56 million for completed business acquisitions compared to $22 million in 2003 (table 3.3). The study results suggest that during a period of economic growth and increased employment

highly profitable acquirers tend to bid higher prices as an effective investment strategy to establish a competitive position in the market, highly levered acquires tend to bid higher prices for less levered targets to enhance their debt capacity and market share, and cash rich acquirers tend to bid lower prices for targets with cash flow difficulties utilising their associated low cost of capital for business acquisitions as an effective investment strategy to establish a competitive position in the market.

Tolerance and VIF values measure the collinearity among the independent variables PROP, LEVE, and LIQU, and the time dummy variables TIME1998 to TIME2012. None of the variance inflation factors (VIF) exceeds five, suggesting that the regression results have high validity. In summary, the regression results for the model M3 show evidence that there is a statistically significant positive association between the acquirer's profitability (PROF) and the business acquisition decision (the deal value), supporting H_1. The regression results of the model M3 also support H_2 reporting a positive association between the acquirer's leverage (LEVE) and the business acquisition decision (the deal value). The regression results do not support H_3 reporting a negative association between the acquirer's liquidity (LIQU) and the business acquisition decision (the deal value), however this association is not statistically significant. The regression results show evidence that time impacts on the acquirer's business acquisition decision (the deal value) though it is not statistically significant, when they consider impact of the acquirer's profitability (PROF), leverage (LEVE) and liquidity (LIQU), supporting H_5.

4.4 Robustness Tests

To test the robustness of the test results relating to H1 to H5, the generalised method of moments (GMM) analyses are conducted. Section 4.4.1 presents the robustness analysis for the statistical models M1 (Equations 3.1) for testing the hypotheses H1 to H3 related to RQ1. Section 4.4.2 presents the robustness analysis for the statistical models M2 (Equations 3.2) for testing the hypotheses H4 related to RQ2. The robustness tests result of the generalised method of moments analysis for testing the hypotheses H5 related to RQ3 for the statistical models M3 (Equations 3.3) are presented in Section 4.4.3.

4.4.1 The Generalised Method of Moments (GMM) analyses for the model M1 (Equation 3.1)

The results of the generalised method of moments analyses for the dependent variable DV using the independent variables PROF, LEVE, and LIQU during 1997 to 2012 for the model M1 (Equation 3.1), are reported in the table 4.7 below.

Chapter 4: An Empirical Analysis of the Factors Influencing the Business Acquisition Decision (the Deal Value) - Acquirer Related Characteristics

Table 4.7: Generalised Method of Moments test results with dependent variable: DV for the model M1 (Equation 3.1) during 1997-2012

	Model M1		Model M1		Model M1	
Dependent Variable	**DV**		**DV**		**DV**	
	GMM: Two-Stage Least Squares		**GMM: White**		**GMM: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)**	
Variables	**Beta**	**t-statistics**	**Beta**	**t-statistics**	**Beta**	**t-statistics**
R^2	0.607		0.607		0.607	
Adjusted R^2	0.599		0.599		0.599	
Constant	2.880	2.727***	2.880	3.296***	2.880	3.217***
Independent Variables						
PROF	12.327	15.400***	12.327	6.255***	12.327	8.151***
LEVE	3.507	0.995	3.507	1.171	3.507	1.134
LIQU	-0.025	-1.178	-0.025	-2.404**	-0.025	-2.348**

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; PROF = acquirer's profitability, where PROF is the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares; LEVE = acquirer's leverage, where LEVE is the ratio of long term debt to total assets; LIQU = acquirer's liquidity, where LIQU is the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure.
Model M1: $DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + e$
The GMM models White and HAC incorporate the lagged value of the dependent variable DV that is previous year's DV, linear estimation with 1 weight update and number of iterations included 1.
Standard errors and covariance are computed using estimation weighting matrix.
Instrument specification: PROF, LEVE, LIQU.
Constant added to instrument list.
*** Significant at the 1% level.
** Significant at the 5% level.

The table 4.7 above presents the multiple determination (R^2), *Adjusted R-squared*, constant, beta values for the independent variables PROP, LEVE, and LIQU and *t-statistics* for the model M1 for the generalised method moments estimations for the Equation 3.1 using estimation weighting

matrices of Two-Stage Least Squares (TSLS)[26], White[27] and HAC[28] . The generalised method of moments test results generated a statistically significant positive association between the acquirer's profitability (PROF) and the business acquisition decision (the deal value). This result is consistent with the main findings (refer to Section 4.3.2 and Table 4.4) and supports H_1, in that the profitability of an acquirer is positively associated with the acquirer's business acquisition decision (the deal value). This result reinforces the previous studies such as those of Erel *et al.* (2012), Kastrinaki and Stoneman (2007), and Vyas *et al*. (2012).

The generalised method of moments test results generated a positive association between the acquirer's leverage (LEVE) and the acquirer's business acquisition decision (the deal value). This result is consistent with the main findings (refer to Section 4.3.2 and Table 4.4) and supports H_2, in that the leverage of an acquirer is positively associated with the acquirer's business acquisition decision (the deal value). This result reinforces the previous studies such as those of Dessyllas and Hughes (2005), Hernando *et al*. (2008), and Vyas *et al*. (2012).

[26] The Two-Stage Least Squares weighting matrix is given by $w_T = (\hat{\sigma}^2 z'z \,/\, T)$ where $\hat{\sigma}^2$ is an estimator of the residual variance based on an initial estimate of β. The estimator for the variance will be s^2 or the no d.f. corrected equivalent, depending on your settings for the coefficient covariance calculation.

[27] The White weighting matrix is a heteroskedasticity consistent estimator of the long-run covariance matrix of $\{Z_t u_t(\beta)\}$ based on an initial estimate of β.

[28] The HAC weighting matrix is a heteroskedasticity and autocorrelation consistent estimator of the long-run covariance matrix of $\{Z_t u_t(\beta)\}$ based on an initial estimate of β.

The main findings (refer to Section 4.3.2 and Table 4.4) generated a negative association between the acquirer's liquidity (LIQU) and the acquirer's business acquisition decision (the deal value). However, the generalised method of moments test results generated a statistically significant negative association between the acquirer's liquidity (LIQU) and the acquirer's business acquisition decision (the deal value). This result of negative association between the acquirer's liquidity (LIQU) and the acquirer's business acquisition decision is consistent with the main findings (refer to Section 4.3.2 and Table 4.4) and this reaffirms that the study results do not support the H_3 in that the liquidity of an acquirer is positively associated with the acquirer's business acquisition decision (the deal value). This result is not consistent with the previous studies of Boyan and Peter (2002), Hyytinen and Pajarinen (2005), Vyas *et al*. (2012) and Weston *et al.* (2007).

4.4.2 The Generalised Method of Moments (GMM) analyses for the model M2 (Equation 3.2)

The results of the generalised method of moments analyses for the dependent variable DV using the independent variables PROF, LEVE, LIQU, and the dummy variable for the industry classification (IND1 to IND7 and IND9) during 1997 to 2012 for the model M2 (Equation 3.2), are reported in the table 4.8 below.

Chapter 4: An Empirical Analysis of the Factors Influencing the Business Acquisition Decision (the Deal Value) - Acquirer Related Characteristics

Table 4.8: Generalised Method of Moments test results with dependent variable: DV for the model M2 (Equation 3.2) during 1997-2012

	Model M2		Model M2		Model M2	
Dependent Variable	**DV**		**DV**		**DV**	
	GMM: Two-Stage Least Squares		**GMM: White**		**GMM: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)**	
Variables	**Beta**	**t-statistics**	**Beta**	**t-statistics**	**Beta**	**t-statistics**
R^2	0.630		0.630		0.630	
Adjusted R^2	0.603		0.603		0.603	
Constant	2.530	1.765*	2.530	1.777*	2.530	1.926*
Independent Variables						
PROF	12.488	15.476***	12.488	6.807***	12.488	8.188***
LEVE	7.021	1.805*	7.021	2.291**	7.021	2.300**
LIQU	-0.037	-1.634	-0.037	-3.207***	-0.037	-2.871***
Dummy Variables -Industry Classification						
IND1	-0.565	-0.231	-0.565	-0.294	-0.565	-0.326
IND2	1.063	0.524	1.063	0.548	1.063	0.637
IND3	-0.692	-0.317	-0.692	-0.369	-0.692	-0.383
IND4	-1.185	-0.578	-1.185	-0.695	-1.185	-0.782
IND5	-6.843	-1.983**	-6.843	-1.566	-6.843	-1.537
IND6	1.937	0.865	1.937	0.568	1.937	0.534
IND7	-0.855	-0.229	-0.855	-0.465	-0.855	-0.524
IND9	-5.777	-1.604	-5.777	-2.176**	-5.777	-2.105**

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; PROF = acquirer's profitability, where PROF is the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares; LEVE = acquirer's leverage, where LEVE is the ratio of long term debt to total assets; LIOU = acquirer's liquidity, where LIOU is the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure; and IND1 to IND7 and IND9 = industry classification, where IND1 to IND7 and IND9 are dummy variables to capture industry classifications, coded as one if the industry classification equals IND1, IND2, IND3, IND4, IND5, IND6, IND7 or IND9 and zero otherwise, IND8 is used as the reference variable.

Model M2: $DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + \beta_7 D_{ind1} + \beta_8 D_{ind2} + \beta_9 D_{ind3} + \beta_{10} D_{ind4} + \beta_{11} D_{ind5} + \beta_{12} D_{ind6} + \beta_{13} D_{ind7} + \beta_{14} D_{ind9} + e$

The GMM models White and HAC incorporate the lagged-value of the dependent variable DV that is previous year's DV, linear estimation with 1 weight update and number of iterations included 1.

Standard errors and covariance are computed using estimation weighting matrix.

Instrument specification: PROF, LEVE, LIQU, IND_D1, IND_D2, IND_D3, IND_D4, IND_D5, IND_D6, IND_D7, IND_D9.

Constant added to instrument list.

*** Significant at the 1% level.

** Significant at the 5% level.

* Significant at the 10% level.

The table 4.8 above presents the multiple determination (R^2), *Adjusted R-squared*, constant, beta values for the independent variables PROP, LEVE, and LIQU, and the dummy variables IND1 to IND7 and IND9 that represent industry classification, and *t-statistics* for the model M2 for the generalised method moments estimations for the Equation 3.2 using estimation weighting matrices of Two-Stage Least Squares (TSLS), White and HAC. The results of the generalised method of moments evidence that the industry classification statistically significantly influences the business acquisition decision (the deal value). This result is consistent with the main findings (refer to Section 4.3.2 and Table 4.5) and supports H_4, in that when an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision.

4.4.3 The Generalised Method of Moments (GMM) analyses for the model M3 (Equation 3.3)

The results of the generalised method of moments analyses for the dependent variable DV using the independent variables PROF, LEVE, LIQU, and the time dummy variable (TIME1998 to TIME2012) during 1997 to 2012 for the model M3 (Equation 3.3), are reported in the table 4.9 below.

Table 4.9: Generalised Method of Moments test results with dependent variable: DV for the model M3 (Equation 3.3) during 1997-2012

	Model M3		Model M3		Model M3	
Dependent Variable	**DV**		**DV**		**DV**	
	GMM: Two-Stage Least Squares		**GMM: White**		**GMM: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)**	
Variables	**Beta**	**t-statistics**	**Beta**	**t-statistics**	**Beta**	**t-statistics**
R^2	0.630		0.630		0.630	
Adjusted R^2	0.583		0.583		0.583	
Constant	5.161	1.976**	5.161	1.262	5.161	1.3286
Independent Variables						
PROF	12.288	13.788***	12.288	5.964***	12.288	7.754***
LEVE	3.515	0.928	3.515	0.954	3.515	0.913
LIQU	-0.024	-1.069	-0.024	-1.889**	-0.024	-2.029**
Dummy Variables -Time						
TIME1998	-2.803	-0.777	-2.803	-0.659	-2.803	-0.698
TIME1999	-1.412	-0.391	-1.412	-0.242	-1.412	-0.238
TIME2000	-3.200	-0.885	-3.200	-0.717	-3.200	-0.765
TIME2001	-2.927	-0.806	-2.927	-0.643	-2.927	-0.676
TIME2002	-5.073	-1.395	-5.073	-1.124	-5.073	-1.199
TIME2003	-4.687	-1.293	-4.687	-1.030	-4.687	-1.094
TIME2004	2.218	0.614	2.218	0.351	2.218	0.322
TIME2005	-2.600	-0.705	-2.600	-0.524	-2.600	-0.594
TIME2006	-1.026	-0.283	-1.026	-0.204	-1.026	-0.206
TIME2007	-2.173	-0.588	-2.173	-0.417	-2.173	-0.443
TIME2008	-3.752	-1.033	-3.752	-0.710	-3.752	-0.811
TIME2009	-0.682	-0.187	-0.682	-0.142	-0.682	-0.153
TIME2010	-4.749	-1.315	-4.749	-0.849	-4.749	-0.829
TIME2011	-0.552	-0.147	-0.552	-0.108	-0.552	-0.110
TIME2012	-2.868	-0.792	-2.868	-0.639	-2.868	-0.666

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; PROF = acquirer's profitability, where PROF is the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares; LEVE = acquirer's leverage, where LEVE is the ratio of long term debt to total assets; LIOU = acquirer's liquidity, where LIOU is the ratio of net profit after interest and tax to net cash flow from operations less capital expenditure; and TIME1998 – TIME2012 = time, where TIME1998 – TIME2012 are time dummy variables, coded as one if the year equals 1998 - 2012 and zero otherwise,TIME1997 is used as the reference variable.

Model M3: $DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + \beta_{15} D_{t1} + \beta_{16} D_{t2} + \beta_{17} D_{t3} + \beta_{18} D_{t4} + \beta_{19} D_{t5} + \beta_{20} D_{t6} + \beta_{21} D_{t7} + \beta_{22} D_{t8} + \beta_{23} D_{t9} + \beta_{24} D_{t10} + \beta_{25} D_{t11} + \beta_{26} D_{t12} + \beta_{27} D_{t13} + \beta_{28} D_{t14} + \beta_{29} D_{t15} + e$

The GMM models White and HAC incorporate the lagged-value of the dependent variable DV that is previous year's DV, linear estimation with 1 weight update and number of iterations included 1.

Standard errors and covariance are computed using estimation weighting matrix.

Instrument specification: PROF, LEVE, LIQU, T_1998, T_1999, T_2000, T_2001, T_2002, T_2003, T_2004, T_2005, T_2006, T_2007, T_2008, T_2009, T_2010, T_2011, T_2012.

Constant added to instrument list.

*** Significant at the 1% level.

** Significant at the 5% level.

The table 4.9 above presents the multiple determination (R^2), *Adjusted R-squared*, constant, beta values for the independent variables PROP, LEVE, and LIQU, and the time dummy variables TIME1998 to TIME2012, and *t-statistics* for the model M3 for the generalised method moments estimations for the Equation 3.3 using estimation weighting matrices of Two-Stage Least Squares (TSLS), White and HAC. The results of the generalised method of moments evidence that the the time when the business acquisition occurs, statistically significantly influences the business acquisition decision (the deal value). This result is consistent with the main findings (refer to Section 4.3.2 and Table 4.6) and supports H_5, in that when an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the time when the business acquisition occurs also impacts on the decision.

4.5 Chapter Summary

This chapter discusses the results of investigating the hypotheses H_1: profitability of an acquirer is positively associated with the business acquisition decision of listed companies in Australia; H_2: leverage of an acquirer is positively associated with the business acquisition decision of listed companies in Australia; and H_3: liquidity of an acquirer is positively associated with the business acquisition decision of listed companies in Australia, related to RQ1: how the acquirer related determinants (profitability, leverage and liquidity) affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange; H_4: when an acquirer's profitability, leverage, and liquidity affects the acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision, related to RQ2: whether the industry

classification (IND) of acquirer impacts on the business acquisition decision in RQ1; and H_5: when an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the time also impacts on the decision, related to RQ3: whether the time in terms of when the business acquisition occurs impacts on the business acquisition decision in RQ1. The analysis is performed using the Ordinary Least Squares (OLS) multiple regression for the statistical models M1, M2 and M3 (Equations 3.1 to 3.3) related to RQ1, RQ2 and RQ3, respectively.

From the analysis of 160 completed business acquisitions representing 79.13 per cent of population in terms of total deal value of completed business acquisitions during 1997 to 2012 (table 3.1), this study finds that an acquirer's profitability (PROF) is statistically significantly positively associated with the acquirer's business acquisition decision. Overall, the results of the multiple regression analysis support H_1, in that the profitability of an acquirer is positively associated with the acquirer's business acquisition decision. This finding is consistent with studies such as those of Erel *et al.* (2012), Kastrinaki and Stoneman (2007), and Vyas *et al*. (2012).

The study finds that the acquirer's leverage (LEVE) is positively associated with the acquirer's business acquisition decision, supporting H_2. This finding is consistent with studies such as those of Dessyllas and Hughes (2005), Hernando *et al*. (2008), and Vyas *et al*. (2012).

The study finds that an acquirer's liquidity (LIQU) is statistically significantly negatively associated with the acquirer's business acquisition decision. As the results of the study show

evidence that the acquirer's liquidity is not positively influencing the business acquisition decision, the study results do not support H_3. This finding supports that acquirers with high growth opportunities and high liquidity tend to respond with lower bids exercising their bargaining power for targets that have high growth prospects but has low liquidity.

The studies such as those of Boyan and Peter (2002), Hyytinen and Pajarinen (2005), Vyas *et al*. (2012), and Weston *et al.* (2007) have found a positive association between acquirer's liquidity and investments in business acquisitions. Therefore, the findings of this study related to acquirer's liquidity are not consistent with previous studies of Boyan and Peter (2002), Hyytinen and Pajarinen (2005), Vyas *et al*. (2012) and Weston *et al.* (2007).

The results of this study support that the industry classification related to RQ2, statistically significantly influences the business acquisition decision of acquirers that are listed on the Australian Securities Exchange, supporting H_4. The study results show evidence that the time related to RQ3 statistically significantly influences the business acquisition decision of acquirers that are listed on the Australian Securities Exchange, supporting H_5.

A summary of the study results for the regression models M1 to M3 related to RQ1 to RQ3 is given in table 4.10 below.

Table 4.10: Multiple regression results with dependent variable: DV, for the models M1-M3 (Equation 3.1 to 3.3) during 1997-2012

	RQ1: Model M1		RQ2: Model M2		RQ3: Model M3	
Dependent Variable	**DV**		**DV**		**DV**	
Variables	**Beta**	**t-statistics**	**Beta**	**t-statistics**	**Beta**	**t-statistics**
R	0.779		0.794		0.794	
R^2	0.607		0.630		0.630	
Adjusted R^2	0.599		0.603		0.583	
F - statistic	80.237***		22.956***		13.334***	
Constant	2.880	2.727***	2.530	1.765*	5.161	1.976**
Independent Variables						
PROF	12.327	15.400***	12.488	15.476***	12.288	13.788***
LEVE	3.507	0.995	7.021	1.805*	3.515	0.928
LIQU	-0.025	-1.178	-0.037	-1.634	-0.024	-1.069
Dummy Variables -Industry Classification						
IND1			-0.565	-0.231		
IND2			1.063	0.524		
IND3			-0.692	-0.317		
IND4			-1.185	-0.578		
IND5			-6.843	-1.983**		
IND6			1.937	0.865		
IND7			-0.855	-0.229		
IND9			-5.777	-1.604		
Dummy Variables -Time						
TIME1998					-2.803	-0.777
TIME1999					-1.412	-0.391
TIME2000					-3.200	-0.885
TIME2001					-2.927	-0.806
TIME2002					-5.073	-1.395
TIME2003					-4.687	-1.293
TIME2004					2.218	0.614
TIME2005					-2.600	-0.705
TIME2006					-1.026	-0.283
TIME2007					-2.173	-0.588
TIME2008					-3.752	-1.033
TIME2009					-0.682	-0.187
TIME2010					-4.749	-1.315
TIME2011					-0.552	-0.147
TIME2012					-2.868	-0.792

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; PROF = acquirer's profitability, where PROF is the acquirer's earnings per share, calculated as the ratio of net profit after interest and tax to number of issued shares; LEVE = acquirer's leverage, where LEVE is the ratio of long term debt to total assets; LIQU = acquirer's liquidity, where LIQU is the ratio of net

Table 4.10: Multiple regression results with dependent variable: DV, for the models M1-M3 (Equation 3.1 to 3.3) during 1997-2012 (continued)

profit after interest and tax to net cash flow from operations less capital expenditure; IND1 to IND7 and IND9 = industry classification, where IND1 to IND7 and IND9 are dummy variables to capture industry classifications, coded as one if the industry classification equals IND1, IND2, IND3, IND4, IND5, IND6, IND7 or IND9 and zero otherwise, IND8 is used as the reference variable; and TIME1998 – TIME2012 = time factor, where TIME1998 – TIME2012 are time dummy variables, coded as one if the year equals 1998 - 2012 and zero otherwise, TIME1997 is used as the reference variable.

Model M1: $DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + e$

Model M2: $DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + \beta_7 D_{ind1} + \beta_8 D_{ind2} + \beta_9 D_{ind3} + \beta_{10} D_{ind4} + \beta_{11} D_{ind5} + \beta_{12} D_{ind6} + \beta_{13} D_{ind7} + \beta_{14} D_{ind9} + e$

Model M3: $DV_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEVE_{it} + \beta_3 LIQU_{it} + \beta_{15} D_{t1} + \beta_{16} D_{t2} + \beta_{17} D_{t3} + \beta_{18} D_{t4} + \beta_{19} D_{t5} + \beta_{20} D_{t6} + \beta_{21} D_{t7} + \beta_{22} D_{t8} + \beta_{23} D_{t9} + \beta_{24} D_{t10} + \beta_{25} D_{t11} + \beta_{26} D_{t12} + \beta_{27} D_{t13} + \beta_{28} D_{t14} + \beta_{29} D_{t15} + e$

*** Significant at the 1% level.

** Significant at the 5% level.

* Significant at the 10% level.

The next chapter, Chapter 5 presents and analyses the results from testing the hypotheses H_6 to H_8 related to RQ4: how do the macro-economic variables of interest rate, exchange rate and stock market index affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange? H_9 related to RQ5: does the industry classification of an acquirer impact on the business acquisition decision in RQ4? and H_{10} related to RQ6: does the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ4?

Chapter 5: An Empirical Analysis of the Factors Influencing Business Acquisition Decision - Macro-economic Related Characteristics

5.1 Introduction

The previous chapter presented the empirical results for examining the influence of acquirer's profitability (H_1), leverage (H_2), liquidity (H_3), industry classification (H_4) and time (H_5) on the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange. The multiple regression analysis for examining the impact of acquirer's profitability, leverage, and liquidity on the business acquisition decision of acquirers that are listed on the Australian Securities Exchange, supports the hypothesis one (H_1) and two (H_2) related to Research Question 1 (RQ1). However, the study results do not support the hypothesis three ($H_{3)}$ related to Research Question 1 (RQ1). The results of multiple regression analysis presented in the previous chapter support the hypothesis four (H_4) related to Research Question 2 (RQ2) and the hypothesis five ($H_{5)}$ related to Research Question 3 (RQ3).

This chapter presents the empirical results of multiple regression analysis which tests the hypotheses 6 to 10 (H_6 – H_{10}), related to Research Questions 4 to 6 (RQ4 to RQ6), that is, RQ4: how the macro-economic variables of interest rate (IR), exchange rate (ER) and stock market index (SMI) affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange; RQ5: whether the industry classification (IND) of acquirer impact on the

business acquisition decision in RQ4; and RQ6: whether the time (TIME) in terms of when the business acquisition occurs impact on the business acquisition decision in RQ4. Specifically, this study examines whether the interest rate (H_6), exchange rate (H_7), stock market index (H_8), industry classification (H_9), and the time (H_{10}) are associated with the business acquisition decision of acquirer's that are listed on the Australian Securities Exchange. The Ordinary Least Squares (OLS) multiple regression analysis is performed for the regression models: M4 (Equation 3.4) to test the hypotheses H_6 to H_8, related to RQ4, M5 (Equation 3.5) related to RQ5, and M6 (Equation 3.6) related to RQ6.

This chapter begins with a discussion of the descriptive statistics for the independent and dependent variables (Section 5.2). The correlation analysis for the independent variables appears in the Section 5.3.1. The results of the multiple regression analysis used in testing the hypotheses H_6 – H_{10} related to RQ4 to RQ6 using statistical models M4 to M6 (Equations 3.4 to 3.6) are discussed in the Section 5.3.2. Section 5.4 provides the robustness tests results of the generalised method of moments (GMM) analysis for testing the hypotheses H_6 to H_{10} related to RQ4 to RQ6 for the statistical models M4 to M6 (Equations 3.4 to 3.6). Section 5.5 concludes this chapter by summarising the findings of hypotheses (H_6 to H_{10}) tests.

5.2 Descriptive Statistics

Descriptive statistics are calculated for the independent and dependent variables employed to investigate H_6 to H_8 related to RQ4 to obtain an overview of the nature of the data to be analysed. The variables are:1) independent variables which are the interest rate (IR) proxied by the annual

average of the Inter Bank Interest Rate published by the Reserve Bank of Australia, the exchange rate (ER) proxied by the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia, and the stock market index (SMI) proxied by the annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange; 2) Deal Value (DV) which is the measure of the acquirer's business acquisition decision in this study, is calculated as the ratio of the purchase price paid by the acquirer divided by the target's number of shares issued. The table 5.1 provides the descriptive statistics for macro-economic related independent variables and the dependent variable.

Table 5.1: Descriptive statistics of independent and dependent variables – Macro-economic related characteristics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Independent Variables					
IR	160	3.278	6.672	5.072	0.872
ER	160	0.513	1.041	0.753	0.155
SMI	160	-0.044	30.280	9.615	8.879
Dependent Variable					
DV	160	0.499	125.000	7.899	12.452

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; IR = interest rate, where interest rate is calculated as the ratio of annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia; ER = exchange rate, where exchange rate is calculated as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia; SMI = stock market index, where stock market index is calculated as the ratio of annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange.

The study uses a sample that represents 160 business acquisitions of acquirers that are listed on the Australian Securities Exchange during the period 1997 to 2012. As per the descriptive statistics

in the table 5.1, the study estimates that approximately 95 per cent of the interest rate data falls in the range of -3.328 to +6.816 given its mean value of 5.072 and the standard deviation of 0.872. The mean value of exchange rate is 0.753 and the standard deviation is 0.155. The study estimates that approximately 95 per cent of the exchange rate falls within the range of -0.443 to +1.063. At 95 per cent confidence level, the study estimates that the stock market index falls within the range of -8.143 to +27.373 following its mean value of 9.615 and a standard deviation of 8.879.

Sample data of the dependent variable are normally distributed as verified under Section 4.2.

5.3 Analysis of the Factors Influencing the Business Acquisition Decision – Macro-economic Related Characteristics

5.3.1 Correlation Analysis

The Pearson correlation coefficients between the independent variables are presented in the table 5.2 to validate that the regression models used do not experience a serious multicollinearity problem.

Table 5.2: Pearson correlation coefficients between independent variables

Variable	IR	ER	SMI
IR	-	-0.188**	-0.006
ER	-0.188**	-	-0.424***
SMI	-0.006	-0.424***	-

Note: IR = interest rate, where interest rate is calculated as the ratio of annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia; ER = exchange rate, where exchange rate is calculated as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia; SMI = stock market index, where stock market index is calculated as the ratio of annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange.
*** Significant at the 1% (2-tailed).
** Significant at the 5% (2-tailed).

Pearson correlation represents the unique predicted capacity of each independent variable IR, ER and SMI. The correlation of negative 0.188 between IR and ER is significant at 5 per cent level. This suggests that 95 per cent of the sample related to IR and ER provides accurate information about the population. There is a strong negative correlation of 0.006 between IR and SMI. The correlation of negative 0.424 between ER and SMI is significant at 1 per cent level. This suggests that 99 per cent of the sample related to ER and SMI provides accurate information about the population.

The multicollinearity problem exists if the independent variables are highly correlated with each other. The multicollinearity statistics of the regression models M4 (Equation 3.4), M5 (Equation 3.5) and M6 (Equation 3.6) are given in the tables 5.3, 5.4 and 5.5 respectively in the Section 5.3.2. The tolerance and the variance inflations factor values in the tables 5.3, 5.4 and 5.5 further show evidence that there is no serious multicollinearity among the independent variables of IR, ER, and SMI. None of the variance inflation factors (VIF) exceeds five, suggesting that the regressions

have high validity and a high predicting power. As suggested by Tabachnick and Fidell (2007), correlation values exceeding 0.90 are regarded as highly correlated. None of the correlation coefficients of the independent variables IR, ER and SMI exceed the value 0.90. This suggests that there is no serious multicollinearity between the independent variables, IR, ER, and SMI that could jeopardise the regression results (Tabachnick and Fidell, 2007). Due to the size of the sample, this does not affect to alter the results of the models output and therefore, no serious multicollinearity problems have occurred. The correlation statistics in the table 5.2 show evidence the high predicting power of the regression models of the study.

5.3.2 Multiple Regression Results and Analysis

This section discusses the multiple regression results for testing the hypotheses: H_6 to H_8 related to RQ4, H_9 related to RQ5 and H_{10} related to RQ6.The statistical models M4, M5 and M6 mentioned in the Section 3.3.1 are estimated using the Ordinary Least Squares (OLS) method. The statistical model M4 (Equation 3.4) tests the RQ4, model M5 (Equation 3.5) tests the RQ5 and, model M6 (Equation 3.6) tests the RQ6 of this study. The tables 5.3, 5.4 and 5.5 present the results of the regression for the models M4, M5 and M6, respectively.

The dependent variable of this study is the DV which is the proxy for the business acquisition decision. The results of the regression for the dependent variable DV using the independent variables IR, ER, and SMI during 1997 to 2012 for the model M4, are reported in the table 5.3 below.

Table 5.3: Multiple regression results with dependent variable: DV, for the model M4 (Equation 3.4) during 1997-2012

		Model M4				
Dependent Variable		**DV**				
					Collinearity Statistics	
Variables		**Beta**	**Standardized Coefficients**	**t-statistics**	**Tolerance**	**VIF**
R	0.244					
R^2	0.060					
Error term	0.940					
Adjusted R^2	0.042					
F - statistic	3.306**					
Constant		-14.311		-1.568*		
Independent Variables						
IR		2.022	0.142	1.783*	0.956	1.046
ER		16.565	0.205	2.342**	0.784	1.276
SMI		-0.055	-0.039	-0.458	0.813	1.231

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; IR = interest rate, where interest rate is calculated as the ratio of annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia; ER = exchange rate, where exchange rate is calculated as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia; and SMI = stock market index, where stock market index is calculated as the ratio of annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange.
Model M4: $DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + e$
** Significant at the 5% level.
* Significant at the 10% level.

The table 5.3 above presents the multiple correlation coefficient (*R*), the multiple determination (R^2), *Adjusted R-squared*, *F- statistics*, constant, beta values for the independent variables IR, ER, and SMI, *t-statistics* and collinearity statistics for the model M4. The value of the multiple correlation coefficient (*R*) 0.244 evidences a linear correlation between the observed and model predicted values of the dependent variable DV. *R* value 0.244 in the model M4 indicates its

prediction power and statistically significant relationship between the dependent variable DV and the independent variables IR, ER and SMI.

The multiple determination (R^2) value 0.060 is the explained variance of the model. The R^2 value 0.060 indicates that 6.0 per cent of the total variability in the dependent variable DV is accounted for by all independent variables of IR, ER, and SMI. The unexplained variance or the error term of the model M4 is 0.940 which is 1 minus the explained variance 0.060. The unexplained variance or the error term of 0.940 indicates that 94.0 per cent of the total variability in the dependent variable DV is not accounted for by the independent variables of IR, ER, and SMI.

The *adjusted* R^2 of the model M4 is 0.042. The reason that the *adjusted* R^2 value 0.042 to be below the R^2 value 0.060 is that the *adjusted* R^2 only accommodates those variables that contribute to the value of the dependent variable DV.

The *F-statistics* 3.306 units of the model M4 (Equation 3.4) show overall significance of the model at the 5 per cent level. The *F-statistics* show evidence whether the overall regression model is a good fit for the data. The *F-statistics* 3.306 units that is statistically significant at 5 per cent level indicate that the independent variables IR, ER, and SMI jointly statistically significantly predict the dependent variable DV. The statistically significant *F-statistics* of the model M4 suggest that most of the variation in the dependent variable DV is explained by the model. This result suggests that the regression model M4 is a good fit for the data, that means the variation explained by the model is not due to chance.

The beta values[29] measure how much the dependent variable DV varies with an independent variable when all other independent variables are held constant. In other words, the beta values provide the expected change in the dependent variable for one-unit change in an independent variable. The beta value of the constant, that is the y intercept -14.311 of the model M4 is the predicted value of the dependent variable DV when all independent variables IR, ER, and SMI equal to zero. This means that the average value of the dependent variable DV (the business acquisition decision) tends to be negative 14.311 units when all independent variables IR, ER, and SMI take the value of zero. The regression coefficient -14.311 of the model M4 is statistically significant at 10 per cent level. This suggests that at 90 per cent confidence level, an acquirer intends to reduce the deal value by -14.311 units per share of a target when there is no influence from the macro-economic variables of interest rate, exchange rate, and the stock market index.

The beta values of the model M4 for the independent variables, IR, ER, and SMI are +2.022, +16.565, and -0.055 respectively. The beta value of the independent variable IR +2.022 is statistically significant at 10 per cent level. This result suggests that at 90 per cent confidence level, for every unit increase in the beta value for IR, there is 2.022 units increase in the dependent variable DV. The beta value of the independent variable ER +16.565 is statistically significant at 5 per cent level. This result suggests that at 95 per cent confidence level, for every unit increase in the beta value for ER, there is 16.565 units increase in the dependent variable DV. The beta value -0.055 of SMI suggests that for every unit increase in SMI there is 0.055 units decrease in the DV. The results suggest that ER is the highest contributor having the highest standardised

[29] Beta values are also referred as unstandardised coefficients or regression coefficients.

coefficient of 0.205, followed by IR with the standardised coefficient of 0.142 for predicting the dependent variable DV in the model M4.

The study results suggest a positive association between the interest rate and the acquirer's business acquisition decision. Higher interest rate increases the cost of borrowing and investments become costly. However, higher interest rate creates a buyer's market for cash rich acquirers for undertaking business acquisitions due to the associated low cost of capital to them (Erel *et al*., 2010; Irina, 2021; Kamaly, 2007; Marsh, 1982; Taggart, 1977). Increase in interest rate is a positive signal of rising economic activity and encourages acquirers to invest in business acquisitions. When interest rate rises cash rich firms tend to target undervalued assets for business acquisitions by buying their stocks (Kamaly, 2007).

The study results suggest a positive association between the exchange rate (Australian dollar to United States dollar) and the deal value. The results suggest that acquirers tend to bid higher prices for business acquisitions when Australian Dollar appreciates to United States dollar. When Australian dollar appreciates, Australian exports become expensive in overseas. When Australian dollar appreciates imported goods and services in Australia become cheaper. When exports become expensive in overseas, Australian firms experience a decrease in demand for their exports. When imported goods and services in Australia become cheaper, domestic firms must compete with imported goods and services for their survival in the domestic market to establish their market share. When Australian dollar appreciates acquirers tend to pay high prices for business acquisitions to establish a competitive market power, industry concentration, better diversification,

increased productivity, quality, and cost savings to generate higher returns to their shareholders and competitive prices to consumers.

The study results suggest a negative association between the stock market index and the deal value. Higher stock market index makes cost of a business acquisition expensive. The study results suggest that when stock market index decrease, acquirers tend to bid slightly higher prices for business acquisitions for undervalued stocks (Kaplan, 2007; Reed and Babool, 2003).

Collinearity statistics, tolerance and VIF (variance inflation factors) values are measures to evidence any multicollinearity in the regression analysis. Tolerance and VIF values measure the collinearity among the independent variables IR, ER, and SMI. None of the variance inflation factors (VIF) exceeds five, suggesting that the regression results have high validity. In summary, the regression results of the model M4 show evidence that there is a statistically significant positive association between macro-economic variables exchange rate (ER), interest rate (IR), and the business acquisition decision (the deal value), supporting H_6 and H_7. The regression results of the model M4 also support H_8 reporting a negative association between the stock market index (SMI) and the business acquisition decision (the deal value), however this association is not statistically significant.

The results of the regression for the dependent variable DV using the independent variables IR, ER, SMI, and the dummy variable for the industry classification (IND1 to IND7 and IND9) during 1997 to 2012 for the model M2, are reported in the table 5.4 below.

Table 5.4: Multiple regression results with dependent variable: DV, for the model M5 (Equation 3.5) during 1997-2012

		Model M5				
Dependent Variable		**DV**				
					Collinearity Statistics	
Variables		**Beta**	**Standardized Coefficients**	**t-statistics**	**Tolerance**	**VIF**
R	0.308					
R^2	0.095					
Error term	0.905					
Adjusted R^2	0.027					
F - statistic	1.408					
Constant		-18.610		-1.864*		
Independent Variables						
IR		2.423	0.170	2.037**	0.881	1.135
ER		18.732	0.232	2.512**	0.716	1.397
SMI		-0.032	-0.023	-0.253	0.760	1.315
Dummy Variables -Industry Classification						
IND1		0.970		0.251	0.790	1.265
IND2		4.346		1.362	0.702	1.425
IND3		0.167		0.049	0.750	1.333
IND4		-0.010		-0.003	0.716	1.397
IND5		-3.408		-0.664	0.855	1.169
IND6		1.270		0.362	0.730	1.369
IND7		-4.062		-0.692	0.903	1.107
IND9		-5.799		-1.135	0.863	1.159

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; IR = interest rate, where interest rate is calculated as the ratio of annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia; ER = exchange rate, where exchange rate is calculated as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia; SMI = stock market index, where stock market index is calculated as the ratio of annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange.; and IND1 to IND7 and IND9 = industry classification, where IND1 to IND7 and IND9 are dummy variables to capture industry classifications, coded as one if the industry classification equals IND1, IND2, IND3, IND4, IND5, IND6, IND7 or IND9 and zero otherwise, IND8 is used as the reference variable.

Model M5: $DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + \beta_7 D_{ind1} + \beta_8 D_{ind2} + \beta_9 D_{ind3} + \beta_{10} D_{ind4} + \beta_{11} D_{ind5} + \beta_{12} D_{ind6} + \beta_{13} D_{ind7} + \beta_{14} D_{ind9} + e$

** Significant at the 5% level.

* Significant at the 10% level.

The table 5.4 above presents the multiple correlation coefficient (*R*), the multiple determination (R^2), *Adjusted R-squared*, *F- statistics*, constant, beta values for the independent variables IR, ER, and SMI, and the dummy variables IND1 to IND7 and IND9 that represent industry classification, *t-statistics* and collinearity statistics for the model M5. The value of the multiple correlation coefficient (*R*) 0.308 shows the linear correlation between the observed and model predicted values of the dependent variable DV. The *R* value 0.308 in the model M5 indicates its prediction power and statistically significant relationship between the dependent variable DV and the independent variables IR, ER and SMI, and the industry dummy variables IND1 to IND7 and IND9.

The multiple determination (R^2) value 0.095 is the explained variance of the model. The R^2 value 0.095 indicates that 9.50 per cent of the total variability in the dependent variable DV is accounted for by all independent variables of IR. ER and SMI, and the industry dummy variables IND1 to IND7 and IND9. The unexplained variance or the error term of the model M5 is 0.905 which is 1 minus the explained variance 0.095. The unexplained variance or the error term 0.905 indicates that 90.50 per cent of the total variability in the dependent variable DV is not accounted for by the independent variables of IR, ER, and SMI, and the industry dummy variables IND1 to IND7 and IND9.

The *adjusted* R^2 of the model M5 is 0.027. The reason that the *adjusted* R^2 value 0.027 to be below the R^2 value 0.095 is that the *adjusted* R^2 only accommodates those variables that contribute to the value of the dependent variable DV.

The *F-statistics* 1.408 units of the model M5 (Equation 3.5) show that the overall results of the model are not significant. The *F-statistics* 1.408 units indicate that the independent variables IR, ER, and SMI, and the industry dummy variables IND1 to IND7 and IND9 jointly statistically predict the dependent variable DV, however the model results are not statistically significant. The *F-statistics* of the model M5 suggest that most of the variation in the dependent variable DV is not explained by the independent variables IR, ER, and SMI, and the industry dummy variables IND1 to IND7 and IND9.

The beta value of the constant, that is the y intercept -18.610 of the model M5 is the predicted value of the dependent variable DV, when all independent variables IR, ER, and SMI, and the industry dummy variables IND1 to IND7 and IND9 equal to zero. This means that the average value of the dependent variable DV (the business acquisition decision) tends to be -18.610 units when all independent variables IR, ER, and SMI, and the industry dummy variables IND1 to IND7 and IND9 take the value of zero. The regression coefficient -18.610 is statistically significant at 10 per cent level. This suggests that at 90 per cent confidence level, an acquirer intends to reduce the deal value by 18.610 units to buy one share of a target when there is no influence from the macro-economic variables of the interest rate, exchange rate, and the stock market index, and the industry classification.

The beta values of the model M5 for the independent variables, IR, ER, and SMI are +2.423, +18.732, and -0.032 respectively. The beta value of the independent variable IR +2.423 is statistically significant at 5 per cent level. This result suggests that at 95 per cent confidence level,

for every unit increase in the beta value for IR, there are 2.423 units increase in the dependent variable DV. The beta value of ER +18.732 is statistically significant at 5 per cent level suggesting that at 95 per cent confidence level, for every unit increase in the beta value for ER, there are 18.732 units increase in the dependent variable DV. The beta value of SMI -0.032 indicates that for every unit increase in SMI there are 0.032 units decrease in the DV however this is not statistically significant. The results of the model M5 suggest that ER and IR are the highest contributors having standardised coefficient of 0.232 and 0.170 ranking respectively for predicting the dependent variable DV.

The results of the study suggest that higher interest rates create a buyers' market for cash rich acquirers for undertaking business acquisitions due to their associated low cost of capital aiming at establishing a competitive market share through industry concentration (Erel *et al*., 2010; Irina, 2021; Kamaly, 2007; Marsh, 1982; Taggart, 1977). The results of the study suggest that an appreciation of Australian dollar encourages acquirers to bid higher prices for business acquisitions particularly aiming at industry concentration to establish a bigger market share to compete effectively with cheaper imported goods and services. The study results suggest that during a rise in the stock market index acquirers who operates in growth industries tend to bid lower prices for targets whose stocks are overvalued by the market for business acquisitions.

The beta values of the model M5 for the industry dummy variables IND1 to IND7, and IND9 are +0.970, +4.346, +0.167, -0.010, -3.408, +1.270, -4.062, and -5.799 respectively. The study uses Metals and Mining industry (IND8) as the reference variable in analysing the regression. The beta

value of industry 2 (IND2) +4.346 indicates that the acquirers who are in the industry 2 (Energy, Telecommunication Services and Utilities industry) contribute 4.346 more units to the dependent variable DV, than the acquirers in the Metals and Mining industry. The beta value of -3.408 for industry 5 (IND5) suggests that the acquirers who operate in the Entertainment and Media industry intend to pay 3.408 fewer units for a share of a target firm than the acquirers who operate in the Metals and Mining industry. The beta value of +1.270 for industry 6 (IND6) suggests that the acquirers who operate in the Real Estate and Real Estate Investments Trusts industry intend to pay 1.270 more units for a share of a target firm than the acquirers who operates in the Metals and Mining industry. The beta value of -4.062 for industry 7 (IND7) suggests that the acquirers who operate in the Healthcare Equipment and Services, and Pharmaceuticals and Biotechnology, and Life Sciences industry intend to pay 4.062 fewer units for a share of a target firm than the acquirers who operates in the Metals and Mining industry. The beta value of industry 9 (IND9) suggests that the acquirers who operate in the Transportation industry intend to pay 5.799 fewer units for a share of a target firm than the acquirers who operates in the Metals and Mining industry. Even though none of the beta values for the industry dummy variables are statistically significant, the results show evidence that the industry classification of an acquirer impacts on the acquirer's business acquisition decision when they consider impact of the macro-economic variables interest rate, exchange rate and stock market index.

Tolerance and VIF values measure the collinearity among the independent variables IR, ER, and SMI, and the industry dummy variables IND1 to IND7 and IND9. None of the variance inflation factors (VIF) exceeds five, suggesting that the regression results have high validity. In summary,

the regression results of the model M5 show evidence that there is a statistically significant positive association between macro-economic variables exchange rate (ER), interest rate (IR), and the business acquisition decision (the deal value). The regression results of the model M4 report a negative association between the stock market index (SMI) and the business acquisition decision (the deal value), however this association is not statistically significant. The results of the model M5 confirm that the industry classification of an acquirer impacts on their business acquisition decision when they consider impact of the macro-economic variables exchange rate (ER), interest rate (IR) and stock market index (SMI), supporting H_9.

The results of the regression for the dependent variable DV using the independent variables IR, ER, SMI, and the time dummy variables (TIME1998 to TIME2012) during 1997 to 2012 for the model M6, are reported in the table 5.5 below.

Table 5.5: Multiple regression results with dependent variable: DV, for the model M6 (Equation 3.6) during 1997-2012

		Model M6				
Dependent Variable		**DV**				
					Collinearity Statistics	
Variables		**Beta**	**Standardized Coefficients**	**t-statistics**	**Tolerance**	**VIF**
R	0.338					
R^2	0.114					
Error term	0.886					
Adjusted R^2	0.022					
F - statistic	1.240					
Constant		7.550		1.421		
Independent Variables						
IR		-	-	-	-	-
ER		-	-	-	-	-
SMI		0.062	0.24	0.255	0.208	4.802
Dummy Variables -Time Factor						
TIME1998		-4.556		-0.691	0.373	2.684
TIME1999		-1.079		-0.210	0.616	1.624
TIME2000		-4.567		-0.954	0.705	1.418
TIME2001		-3.146		-0.651	0.692	1.446
TIME2002		-6.073		-1.273	0.711	1.406
TIME2003		-3.640		-0.735	0.660	1.516
TIME2004		1.869		0.283	0.372	2.689
TIME2005		-		-	-	-
TIME2006		3.134		0.479	0.377	2.651
TIME2007		7.045		1.069	0.372	2.685
TIME2008		1.188		0.240	0.658	1.519
TIME2009		-0.733		-0.150	0.679	1.473
TIME2010		-1.046		-0.164	0.397	2.521
TIME2011		11.499		1.755*	0.377	2.655
TIME2012		-3.781		-0.687	0.534	1.872

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; IR = interest rate, where interest rate is calculated as the ratio of annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia; ER = exchange rate, where exchange rate is

Table 5.5: Multiple regression results with dependent variable: DV, for the model M6 (Equation 3.6) during 1997-2012 (continued)

calculated as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia; SMI = stock market index, where stock market index is calculated as the ratio of annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange.; and TIME1998 – TIME2012 = time factor, where TIME1998 – TIME2012 are time dummy variables, coded as one if the year equals 1998 - 2012 and zero otherwise, TIME1997 is used as the reference variable..
Model M6: $DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + \beta_{15} D_{t1} + \beta_{16} D_{t2} + \beta_{17} D_{t3} + \beta_{18} D_{t4} + \beta_{19} D_{t5} + \beta_{20} D_{t6} + \beta_{21} D_{t7} + \beta_{22} D_{t8} + \beta_{23} D_{t9} + \beta_{24} D_{t10} + \beta_{25} D_{t11} + \beta_{26} D_{t12} + \beta_{27} D_{t13} + \beta_{28} D_{t14} + \beta_{29} D_{t15} + e$
* Significant at the 10% level.

The table 5.5 above presents the multiple correlation coefficient (*R*), the multiple determination (R^2), a*djusted R-squared*, *F- statistics*, constant, beta values for the independent variables IR, ER, and SMI, and for the time dummy variables TIME1998 to TIME2012, *t-statistics* and collinearity statistics for the model M6. The value of the multiple correlation coefficient (*R*) 0.338 confirms linear correlation between the observed and model predicted values of the dependent variable DV. The *R* value 0.338 in the model M6 indicates its prediction power and statistical relationship between the dependent variable DV and the independent variables IR, ER, and SMI, and the time dummy variables TIME1998 to TIME2012.

The multiple determination (R^2) value 0.114 is the explained variance of the model. The R^2 value 0.114 indicates that 11.4 per cent of the total variability in the dependent variable DV is accounted for by all independent variables of IR, ER, and SMI, and the time dummy variables TIME1998 to TIME2012. The unexplained variance or the error term of the model M6 is 0.886 which is 1 minus the explained variance 0.114. The unexplained variance or the error term 0.886 indicates that 88.60 per cent of the total variability in the dependent variable DV is not accounted for by the

independent variables of IR, ER, and SMI, and the time dummy variables TIME1998 to TIME2012.

The *adjusted* R^2 of the model M6 is 0.022. The reason that the *adjusted* R^2 value 0.022 to be below the R^2 value 0.114 is that the *adjusted* R^2 only accommodates those variables that contribute to the value of the dependent variable DV.

The *F-statistics* 1.220 units of the model M6 (Equation 3.6) show that the overall results of the model are not significant. The *F-statistics* 1.220 units indicate that the independent variables IR, ER, and SMI, and the time dummy variables TIME1998 to TIME2012 jointly statistically predict the dependent variable DV, however the model results are not statistically significant. The *F-statistics* of the model M6 suggest that the contribution from the independent variables IR, ER, and SMI, and the time dummy variables TIME1998 to TIME2012 to predict the value of the dependent variable DV is weak and not significant.

The beta value of the constant, that is the y intercept +7.550 of the model M6 is the predicted value of the dependent variable DV when all independent variables IR, ER, and SMI, and the time dummy variables TIME1998 to TIME2012 equal to zero. This means that the average value of the dependent variable DV (the business acquisition decision) tends to be +7.550 units when all independent variables IR, ER, and SMI, and the time dummy variables TIME1998 to TIME2012 take the value of zero. The regression coefficient +7.550 is not statistically significant and suggests that an acquirer intends to pay 7.550 units to buy one share of a target when there is no influence

from the macro-economic variables of the interest rate, exchange rate, and the stock market index, and the time.

The beta values of the model M6 for the independent variables, IR, and ER, are nil. The beta value for SMI is +0.062 and this is not statistically significant. The nil beta values of IR and ER show evidence that they have no impact on the dependent variable DV over time. The beta value of SMI +0.062 suggests that for every unit increase in SMI there is 0.062 units increase in the DV over time. The results of the model M6 suggest that SMI is the highest contributor having standardised coefficient of 0.044 over time for predicting the dependent variable DV.

The results of the study suggest that when acquirers consider a bid price for a target over time, they tend to consider impact of the stock market index over time, ignoring impact of the interest rate and the exchange rate. This behavior indicates that acquirers consider undervalued stocks for business acquisitions over time.

The beta values of the model M6 for the time dummy variables TIME1998 to TIME2012 are –4.556, -1.079, -4.567, -3.146, -6.073, -3.640, +1.869, 0.000 (TIME2005), +3.134, +7.045, +1.188, -0.733, -1.046, +11.499 (TIME2011), and -3.781 respectively. The study uses year 1997 (TIME1997) as the reference variable in analysing the regression. The highest annual return of close price of the All Ordinaries Index ASX500 was reported in 2005, which is 30.28 per cent, over the course of 1997 to 2012. However, the results indicate that the macro-economic variables of interest rate, exchange rate, and stock market index over time have zero impact on acquirer's

business acquisition decision in year 2005 compared to the impact in year 1997. The beta value of the time dummy variable TIME2011 is statistically significant at 10 per cent level, suggesting that at 90 per cent confidence level, year 2011 has contributed and influenced acquirers to increase the deal value by 11.499 units. The domestic business acquisition activity has been increased tremendously in 2011 recording a total deal value of $55 million for completed business acquisitions, and the mining boom in 2011 has predominantly contributed to the increased domestic business acquisitions (table 3.3).

Tolerance and VIF values measure the collinearity among the independent variables IR, ER, and SMI, and the time dummy variables TIME1998 to TIME2012. None of the variance inflation factors (VIF) exceeds five, suggesting that the regression results have high validity. In summary, the results of the model M6 confirms that the time impacts on acquirer's business acquisition decision (the deal value) when they consider impact of the macro-economic variables exchange rate (ER), interest rate (IR) and stock market index (SMI) over time, supporting H_{10}.

5.4 Robustness Tests

To test the robustness of the test results relating to H_6 to $H_{10,}$ the generalised method of moments analyses are conducted. Section 5.4.1 presents the robustness analysis for the statistical models M4 (Equations 3.4) for testing the hypotheses H_6 to H_8 related to RQ4. Section 5.4.2 presents the robustness analysis for the statistical models M5 (Equations 3.5) for testing the hypotheses H_9 related to RQ5. The robustness tests result of the generalised method of moments analysis for

testing the hypotheses H_{10} related to RQ6 for the statistical models M6 (Equations 3.6) are presented in Section 5.4.3.

5.4.1 The Generalised Method of Moments (GMM) analyses for the model M4 (Equation 3.4)

The results of the generalised method of moments analyses for the dependent variable DV using the independent variables IR, ER, SMI during 1997 to 2012 for the model M4 (Equation 3.4), are reported in the table 5.6 below.

Table 5.6: Generalised Method of Moments test results with dependent variable: DV for the model M4 (Equation 3.4) during 1997-2012

	Model M4		**Model M4**		**Model M4**	
Dependent Variable	**DV**		**DV**		**DV**	
	GMM: Two-Stage Least Squares		**GMM: White**		**GMM: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)**	
Variables	**Beta**	**t-statistics**	**Beta**	**t-statistics**	**Beta**	**t-statistics**
R^2	0.060		0.060		0.060	
Adjusted R^2	0.042		0.042		0.042	
Constant	-14.311	-1.568*	-14.311	-1.977**	-14.311	-1.701*
Independent Variables						
IR	2.022	1.783*	2.022	2.615***	2.022	2.011**
ER	16.565	2.342**	16.565	1.890*	16.565	1.844
SMI	-0.055	-0.458	-0.055	-0.658	-0.055	-0.608

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; IR = interest rate, where interest rate is calculated as the ratio of annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia; ER = exchange rate, where exchange rate is calculated as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia; and SMI = stock market index, where stock market index is calculated as the ratio of annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange.
Model M4: $DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + e$

Table 5.6: Generalised Method of Moments test results with dependent variable: DV for the model M4 (Equation 3.4) during 1997-2012 (continued)

The GMM models White and HAC incorporate the lagged-value of the dependent variable DV that is previous year's DV, linear estimation with 1 weight update and number of iterations included 1.
Standard errors and covariance are computed using estimation weighting matrix.
Instrument specification: IR, ER, SMI.
Constant added to instrument list.
*** Significant at the 1% level.
** Significant at the 5% level.
* Significant at the 10% level.

The table 5.6 above presents the multiple determination (R^2), *Adjusted R-squared*, constant, beta values for the independent variables IR, ER, and SMI and *t-statistics* for the model M4 for the generalised method moments estimations for the Equation 3.4 using estimation weighting matrices of Two-Stage Least Squares (TSLS), White and HAC. The generalised method of moments test results generated a statistically significant positive association between the macro-economic variable, interest rate (IR) and the business acquisition decision (the deal value). This result is consistent with the main findings (refer to Section 5.3.2 and Table 5.3) and supports H_6, in that interest rate is positively associated with the business acquisition decision. This result reinforces the previous studies such as those of Irina (2021), Kamaly (2007), Marsh (1982), Reed and Babool (2003) and Taggart (1977).

The generalised method of moments test results generated a statistically significant positive association between the macro-economic variable, exchange rate (ER) and the acquirer's business acquisition decision (the deal value). This result is consistent with the main findings (refer to Section 5.3.2 and Table 5.3) and supports H_7, in that the exchange rate is positively associated

with the business acquisition decision. This result reinforces the previous studies such as those of Erel *et al*. (2010), Kamaly (2007), Reed and Babool (2003).

The generalised method of moments test results generated a statistically negative association between the macro-economic variable, stock market index (SMI) and the acquirer's business acquisition decision (the deal value). This result is consistent with the main findings (refer to Section 5.3.2 and Table 5.3) and supports H_8, in that the stock market index is negatively associated with the business acquisition decision. This result reinforces the previous studies such as those of Reed and Babool (2003) and Vasconcellos and Kish (1996 and 1998).

5.4.2 The Generalised Method of Moments (GMM) analyses for the model M5 (Equation 3.5)

The results of the generalised method of moments analyses for the dependent variable DV using the independent variables IR, ER, SMI, and the dummy variable for the industry classification (IND1 to IND7 and IND9) during 1997 to 2012 for the model M5 (Equation 3.5), are reported in the table 5.7 below.

Table 5.7: Generalised Method of Moments test results with dependent variable: DV for the model M5 (Equation 3.5) during 1997-2012

	Model M5		Model M5		Model M5	
Dependent Variable	**DV**		**DV**		**DV**	
	GMM: Two-Stage Least Squares		**GMM: White**		**GMM: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)**	
Variables	**Beta**	**t-statistics**	**Beta**	**t-statistics**	**Beta**	**t-statistics**
R^2	0.095		0.095		0.095	
Adjusted R^2	0.028		0.028		0.028	
Constant	-18.610	-1.864*	-18.610	-2.016**	-18.610	-1.716*
Independent Variables						
IR	2.423	2.037**	2.423	2.826***	2.423	1.989**
ER	18.732	2.512**	18.732	2.169**	18.732	2.067**
SMI	-0.032	-0.253	-0.032	-0.354	-0.032	-0.309
Dummy Variables -Industry Classification						
IND1	0.970	0.251	0.970	0.377	0.970	0.409
IND2	4.346	1.362	4.346	0.897	4.346	0.898
IND3	0.167	0.049	0.167	0.076	0.167	0.077
IND4	-0.010	-0.003	-0.010	0.000	-0.010	0.000
IND5	-3.408	-0.664	-3.408	-1.468	-3.408	-1.529
IND6	1.270	0.362	1.270	0.385	1.270	0.342
IND7	-4.062	-0.692	-4.062	-1.570	-4.062	-1.544
IND9	-5.799	-1.135	-5.799	-2.146**	-5.799	-2.178**

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; IR = interest rate, where interest rate is calculated as the ratio of annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia; ER = exchange rate, where exchange rate is calculated as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia; SMI = stock market index, where stock market index is calculated as the ratio of annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange.; and IND1 to IND7 and IND9 = industry classification, where IND1 to IND7 and IND9 are dummy variables to capture industry classifications, coded as one if the industry classification equals IND1, IND2, IND3, IND4, IND5, IND6, IND7 or IND9 and zero otherwise, IND8 is used as the reference variable.

Model M5: $DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + \beta_7 D_{ind1} + \beta_8 D_{ind2} + \beta_9 D_{ind3} + \beta_{10} D_{ind4} + \beta_{11} D_{ind5} + \beta_{12} D_{ind6} + \beta_{13} D_{ind7} + \beta_{14} D_{ind9} + e$

The GMM models White and HAC incorporate the lagged-value of the dependent variable DV that is previous year's DV, linear estimation with 1 weight update and number of iterations included 1.

Standard errors and covariance are computed using estimation weighting matrix.

Instrument specification: IR, ER, SMI, IND_D1, IND_D2, IND_D3, IND_D4, IND_D5, IND_D6, IND_D7, IND_D9. Constant added to instrument list.

*** Significant at the 1% level.

** Significant at the 5% level.

* Significant at the 10% level.

The table 5.7 above presents the multiple determination (R^2), *Adjusted R-squared*, constant, beta values for the independent variables IR, ER, and SMI, and the dummy variables IND1 to IND7 and IND9 that represent industry classification, and *t-statistics* for the model M5 for the generalised method moments estimations for the Equation 3.5 using estimation weighting matrices of Two-Stage Least Squares (TSLS), White and HAC. The results of the generalised method of moments evidence that the industry classification of an acquirer statistically significantly impacts on their business acquisition decision (the deal value) when they consider impact of the macro-economic variables exchange rate (ER), interest rate (IR) and stock market index (SMI). This result is consistent with the main findings (refer to Section 5.3.2 and Table 5.4) and supports H_9 in that the industry classification of an acquirer impacts on their business acquisition decision when they consider impact of the macro-economic variables exchange rate (ER), interest rate (IR) and stock market index (SMI).

5.4.3 The Generalised Method of Moments (GMM) analyses for the model M6 (Equation 3.6)

The results of the generalised method of moments analyses for the dependent variable DV using the independent variables IR, ER, SMI, and the time dummy variables (TIME1998 to TIME2012) during 1997 to 2012 for the model M6 (Equation 3.6), are reported in the table 5.8 below.

Table 5.8: Generalised Method of Moments test results with dependent variable: DV for the model M6 (Equation 3.6) during 1997-2012

	Model M6		Model M6		Model M6	
Dependent Variable	**DV**		**DV**		**DV**	
	GMM: Two-Stage Least Squares		**GMM: White**		**GMM: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)**	
Variables	**Beta**	**t-statistics**	**Beta**	**t-statistics**	**Beta**	**t-statistics**
R^2	0.114		0.114		0.114	
Adjusted R^2	0.022		0.022		0.022	
Constant	7.550	1.421	7.550	1.406	7.550	1.465
Independent Variables						
IR	0.000	0.000	0.000	0.000	0.000	0.000
ER	0.000	0.000	0.000	0.000	0.000	0.000
SMI	0.062	0.255	0.062	0.214	0.062	0.275
Dummy Variables -Time Factor						
TIME1998	-4.556	-0.691	-4.556	-0.682	-4.556	-0.687
TIME1999	-1.079	-0.210	-1.079	-0.218	-1.079	-0.198
TIME2000	-4.567	-0.954	-4.567	-0.908	-4.567	-0.980
TIME2001	-3.146	-0.651	-3.146	-0.701	-3.146	-0.694
TIME2002	-6.073	-1.273	-6.073	-1.295	-6.073	-1.278
TIME2003	-3.640	-0.735	-3.640	-0.717	-3.640	-0.660
TIME2004	1.869	0.283	1.869	0.239	1.869	0.250
TIME2005	0.000	0.000	0.000	0.000	0.000	0.000
TIME2006	3.134	0.479	3.134	0.460	3.134	0.465
TIME2007	7.045	1.069	7.045	1.020	7.045	1.022
TIME2008	1.188	0.240	1.188	0.254	1.188	0.292
TIME2009	-0.733	-0.150	-0.733	-0.185	-0.733	-0.117
TIME2010	-1.046	-0.164	-1.046	-0.128	-1.046	-0.145
TIME2011	11.499	1.755*	11.499	1.787	11.499	1.773
TIME2012	-3.781	-0.687	-3.781	-0.622	-3.781	-0.634

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; IR = interest rate, where interest rate is calculated as the ratio of annual average of the Inter Bank Interest Rate published by the Reserve Bank of Australia; ER = exchange rate, where exchange rate is calculated as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia; SMI = stock market index, where stock market index is calculated as the ratio of annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange.; and TIME1998 – TIME2012 = time factor, where TIME1998 – TIME2012 are time dummy variables, coded as one if the year equals 1998 - 2012 and zero otherwise, TIME1997 is used as the reference variable..

Model M6: $DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + \beta_{15} D_{t1} + \beta_{16} D_{t2} + \beta_{17} D_{t3} + \beta_{18} D_{t4} + \beta_{19} D_{t5} + \beta_{20} D_{t6} + \beta_{21} D_{t7} + \beta_{22} D_{t8} + \beta_{23} D_{t9} + \beta_{24} D_{t10} + \beta_{25} D_{t11} + \beta_{26} D_{t12} + \beta_{27} D_{t13} + \beta_{28} D_{t14} + \beta_{29} D_{t15} + e$

The GMM models White and HAC incorporate the lagged-value of the dependent variable DV that is previous year's DV, linear estimation with 1 weight update and number of iterations included 1.

Standard errors and covariance are computed using estimation weighting matrix.

Instrument specification: IR, ER, SMI, T_1998, T_1999, T_2000, T_2001, T_2002, T_2003, T_2004, T_2005, T_2006, T_2007, T_2008, T_2009, T_2010, T_2011, T_2012.

Constant added to instrument list.

Table 5.8: Generalised Method of Moments test results with dependent variable: DV for the model M6 (Equation 3.6) during 1997-2012 (continued)

The GMM models White and HAC incorporate the lagged-value of the dependent variable DV that is previous year's DV, linear estimation with 1 weight update and number of iterations included 1.
Standard errors and covariance are computed using estimation weighting matrix.
Instrument specification: PROF, LEVE, LIQU, T_1998, T_1999, T_2000, T_2001, T_2002, T_2003, T_2004, T_2005, T_2006, T_2007, T_2008, T_2009, T_2010, T_2011, T_2012.
Constant added to instrument list.
* Significant at the 10% level.

The table 5.8 above presents the multiple determination (R^2), *Adjusted R-squared*, constant, beta values for the independent variables IR, ER, and SMI, and the time dummy variables TIME1998 to TIME2012, and *t-statistics* for the model M6 for the generalised method moments estimations for the Equation 3.6 using estimation weighting matrices of Two-Stage Least Squares (TSLS), White and HAC. The results of the generalised method of moments evidence that the time when the business acquisition occurs impacts on their business acquisition decision (the deal value) when they consider impact of the macro-economic variables exchange rate (ER), interest rate (IR) and stock market index (SMI). This result is consistent with the main findings (refer to Section 5.3.2 and Table 5.5) and supports H_{10}.

5.5 Chapter Summary

This chapter discusses the results of investigating hypotheses H_6: macro-economic variable, interest rate is positively associated with the acquirer's business acquisition decision of listed companies in Australia; H_7: macro-economic variable, exchange rate is positively associated with the acquirer's business acquisition decision of listed companies in Australia; and H_8: macro-

economic variable, stock market index is negatively associated with the acquirer's business acquisition decision of listed companies in Australia, related to RQ4: how the macro-economic variables of interest rate, exchange rate and stock market index affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange; hypothesis H_9: when acquirer's profitability, leverage, and liquidity affects the acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision, related to RQ5: whether the industry classification of an acquirer impact on the business acquisition decision in RQ4; and hypothesis H_{10}: when acquirer's profitability, leverage, and liquidity affects the acquirer's business acquisition decision, the time also impacts on the decision, related to RQ6: whether the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ4. The analysis is performed using the Ordinary Least Squares (OLS) multiple regression for the statistical models M4 to M6 (Equations 3.4 to 3.6) related to RQ4 to RQ6.

From the analysis of 160 completed business acquisitions representing 79.13 per cent of population in terms of total deal value of completed business acquisitions during 1997 to 2012 (table 3.1), this study finds that the macro-economic variable, interest rate (IR) is statistically significantly positively associated with the acquirer's business acquisition decision. Overall, the results of the multiple regression analysis support H_6, in that the macro-economic variable, interest rate is positively associated with the acquirer's business acquisition decision. This finding is consistent with studies such as those of Irina (2021), Kamaly (2007), Marsh (1982), Reed and Babool (2003) and Taggart (1977).

The study finds that macro-economic variable, exchange rate (ER) is statistically significantly positively associated with acquirer's business acquisition decision, supporting H_7. This finding is consistent with studies such as those of Erel *et al*. (2010), Kamaly (2007), Reed and Babool (2003).

The study finds that macro-economic variable, stock market index is negatively associated with acquirer's business acquisition decision. The study results support H_8 though, this negative association is not statistically significant. This finding of negative association is consistent with studies such as those of Reed and Babool (2003) and Vasconcellos and Kish (1996 and 1998).

The results of this study support that the industry classification related to RQ5, statistically significantly influences the business acquisition decision of acquirers that are listed on the Australian Securities Exchange, supporting H_9. The study results provide evidence that the time related to RQ6 impacts on the business acquisition decision of acquirers that are listed on the Australian Securities Exchange, supporting H_{10}.

A summary of the study results for the regression models M4 to M6 related to RQ4 to RQ6 is given in the table 5.9 below.

Table 5.9: Multiple regression results with dependent variable: DV, for the models M4-M6 (Equation 3.4 to 3.6) during 1997-2012

	RQ4: Model M4		RQ5: Model M5		RQ6: Model M6	
Dependent Variable	**DV**		**DV**		**DV**	
Variables	**Beta**	**t-statistics**	**Beta**	**t-statistics**	**Beta**	**t-statistics**
R	0.244		0.308		0.338	
R^2	0.060		0.095		0.114	
Adjusted R^2	0.042		0.027		0.022	
F - statistic	3.306**		1.408		1.240	
Constant	-14.311	-1.568*	-18.610	-1.864*	7.550	1.421
Independent Variables						
IR	2.022	1.783*	2.423	2.037**	-	-
ER	16.565	2.342**	18.732	2.512**	-	-
SMI	-0.055	-0.458	-0.032	-0.253	0.062	0.255
Dummy Variables -Industry Classification						
IND1			0.970	0.251		
IND2			4.346	1.362		
IND3			0.167	0.049		
IND4			-0.010	-0.003		
IND5			-3.408	-0.664		
IND6			1.270	0.362		
IND7			-4.062	-0.692		
IND9			-5.799	-1.135		
Dummy Variables -Time Factor						
TIME1998					-4.556	-0.691
TIME1999					-1.079	-0.210
TIME2000					-4.567	-0.954
TIME2001					-3.146	-0.651
TIME2002					-6.073	-1.273
TIME2003					-3.640	-0.735
TIME2004					1.869	0.283
TIME2005					-	-
TIME2006					3.134	0.479
TIME2007					7.045	1.069
TIME2008					1.188	0.240
TIME2009					-0.733	-0.150
TIME2010					-1.046	-0.164
TIME2011					11.499	1.755*
TIME2012					-3.781	-0.687

Note: DV =business acquisition decision, where DV is the ratio of purchase price paid by the acquirer divided by the target's number of shares issued; IR = interest rate, where interest rate is calculated as the ratio of annual average of

Table 5.9: Multiple regression results with dependent variable: DV, for the models M4-M6 (Equation 3.4 to 3.6) during 1997-2012 (continued)

the Inter Bank Interest Rate published by the Reserve Bank of Australia; ER = exchange rate, where exchange rate is calculated as the ratio of annual average of the Australian dollar to United States dollar published by the Reserve Bank of Australia; SMI = stock market index, where stock market index is calculated as the ratio of annual return of close price of the All Ordinaries Index ASX500 of Australia published by the Australian Securities Exchange; IND1 to IND7 and IND9 = industry classification, where IND1 to IND7 and IND9 are dummy variables to capture industry classifications, coded as one if the industry classification equals IND1, IND2, IND3, IND4, IND5, IND6, IND7 or IND9 and zero otherwise, IND8 is used as the reference variable; and TIME1998 – TIME2012 = time factor, where TIME1998 – TIME2012 are time dummy variables, coded as one if the year equals 1998 - 2012 and zero otherwise, TIME1997 is used as the reference variable.

Model M4: $DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + e$

Model M5: $DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + \beta_7 D_{ind1} + \beta_8 D_{ind2} + \beta_9 D_{ind3} + \beta_{10} D_{ind4} + \beta_{11} D_{ind5} + \beta_{12} D_{ind6} + \beta_{13} D_{ind7} + \beta_{14} D_{ind9} + e$

Model M6: $DV_{it} = \beta_0 + \beta_4 IR_{it} + \beta_5 ER_{it} + \beta_6 SMI_{it} + \beta_{15} D_{t1} + \beta_{16} D_{t2} + \beta_{17} D_{t3} + \beta_{18} D_{t4} + \beta_{19} D_{t5} + \beta_{20} D_{t6} + \beta_{21} D_{t7} + \beta_{22} D_{t8} + \beta_{23} D_{t9} + \beta_{24} D_{t10} + \beta_{25} D_{t11} + \beta_{26} D_{t12} + \beta_{27} D_{t13} + \beta_{28} D_{t14} + \beta_{29} D_{t15} + e$

*** Significant at the 1% level.

** Significant at the 5% level.

* Significant at the 10% level.

The next chapter, Chapter 6 summarises and concludes this study.

Chapter 6: Summary and Conclusion

6.1 Introduction

This chapter summarises and concludes this study. Section 6.2 reviews the six research questions and their associated hypotheses, and their test results. Section 6.3 delineates this study's major contributions, followed by a discussion of the implications of the study's findings in Section 6.4. Section 6.5 discusses the study's limitations, followed by suggestions for future research in Section 6.6. Section 6.7 concludes this study.

6.2 Review of the Research Questions, Hypotheses, and Main Findings

This study has six objectives. The first (RO1) is to examine validity of some of the possible acquirer related determinants, profitability, leverage, and liquidity, of the business acquisition decision of acquirers that are listed on the Australian Securities Exchange. The second (RO2) is to examine whether the industry classification of an acquirer impacts on the business acquisition decision in RO1. The third (RO3) is to examine whether the time in terms of when the business acquisition occurs impacts on the business acquisition decision in RO1. The fourth (RO4) is to examine validity of some of the possible macro-economic related determinants, interest rate, exchange rate and stock market index, of the business acquisition decision of acquirers that are listed on the Australian Securities Exchange. The fifth (RO5) is to examine whether the industry classification of an acquirer impacts on the business acquisition decision in RO4. The sixth (RO6)

is to examine whether the time in terms of when the business acquisition occurs impacts on the business acquisition decision in RO4. The business acquisition decision refers to the purchase price paid by an acquirer to buy a share of a target.

To achieve the above six objectives, this study formulates six research questions motivated by existing research gaps uncovered in the literature survey in the Chapter 2. The first research question (RQ1) of this study asks how the acquirer's profitability, leverage, and liquidity affect the business acquisition decision of acquirers that are listed on the Australian Securities Exchange. The second research question (RQ2) of this study asks whether the industry classification of an acquirer affects the business acquisition decision in RQ1. The third research question (RQ3) of this study asks whether the time in terms of when the business acquisition occurs, impacts on the business acquisition decision in RQ1. The fourth research question (RQ4) of this study asks how the macro-economic variables of interest rate, exchange rate and stock market index affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange. The fifth research question (RQ5) of this study asks whether the industry classification of an acquirer impacts on the business acquisition decision in RQ4. The sixth research question (RQ6) of this study asks whether the time in terms of when the business acquisition occurs impacts on the business acquisition decision in RQ4.

Sections 6.2.1 to 6.2.6, summarise the hypotheses, methodology, and major findings related to each of the six research questions.

6.2.1 Research Question 1

The first research question of this study investigates how the acquirer's profitability, leverage, and liquidity affect the business acquisition decision of acquirers that are listed on the Australian Securities Exchange. The business acquisition decision (DV) is measured by the deal value that is the purchase price paid by an acquirer to buy a share of a target (Beatty *et al*., 1987; Cheng *et al*.,1989; Fraser and Kolari, 1987; Hannan and Rhoades, 1987; Palia,1993; Rogowski and Simonson, 1989). The first research question was addressed by testing the first three hypotheses, H_1 to H_3. First hypothesis H_1 predicts that the profitability of an acquirer is positively associated with the business acquisition decision of acquirers that are listed on the Australian Securities Exchange. Second hypothesis H_2 predicts that the leverage of an acquirer is positively associated with the business acquisition decision of acquirers that are listed on the Australian Securities Exchange. Third hypothesis H_3 predicts that the liquidity of an acquirer is positively associated with the business acquisition decision of acquirers that are listed on the Australian Securities Exchange. Using the data of 160 completed business acquisitions representing 79.13 per cent of the population in terms of the total deal value of the completed business acquisitions during 1997 to 2012, this study employs multiple regression analysis to test the hypotheses H_1 to H_3 (Erdogan, 2012; Hernando *et al*., 2008; Irina, 2021; Kamaly, 2007; Martynova and Renneborg, 2008; Vyas *et al*., 2012).

From the analysis of 160 completed business acquisitions representing 79.13 per cent of the population in terms of the total deal value of the completed business acquisitions during 1997 to 2012, this study finds that an acquirer's profitability is statistically significantly positively

associated with the business acquisition decision. Overall, the results of the multiple regression analysis support H_1, in that the profitability of an acquirer positively influences on the acquirer's business acquisition decision. This finding is consistent with studies of Erel *et al.* (2012), Kastrinaki and Stoneman (2007), and Vyas *et al*. (2012).

The study finds that an acquirer's leverage is positively associated with the business acquisition decision. Even though the results provide evidence to support H_2, this positive association is not statistically significant. This finding of positive association is consistent with studies of Dessyllas and Hughes (2005), Hernando *et al*. (2008), and Vyas *et al*. (2012).

The study finds that an acquirer's liquidity is statistically significantly negatively associated with the business acquisition decision. As the study results do not find that an acquirer's liquidity is positively associated with the business acquisition decision, the results do not support H_3. This finding is not consistent with studies of Boyan and Peter, (2002), Vyas *et al*. (2012), and Weston *et al.* (2007).

Overall, this study concludes that the results of the multiple regression analysis provide evidence to support H_1 that the profitability of an acquirer is positively associated with the business acquisition decision of listed companies in Australia during 1997-2012 and, H_2 that the leverage of an acquirer is positively associated the business acquisition decision of listed companies in Australia during 1997-2012. This study concludes that the results of the multiple regression analysis do not provide evidence to support H_3 that the liquidity of an acquirer is positively

associated with the business acquisition decision of listed companies in Australia during 1997-2012. The table 6.1 summarises RQ1 and associated hypotheses (H_1, H_2 and H_3), the testing procedure to test these hypotheses and the findings.

Table 6.1: Summary of Research Questions 1

RQ1: How do the acquirer's profitability, leverage, and liquidity affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange?		
Hypotheses	**Testing Procedure**	**Findings**
H_1: Profitability of an acquirer is positively associated with the business acquisition decision of listed companies in Australia.	H_1 is tested using OLS multiple regression analysis as the main test using statistical regression model M1 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test provide significant evidence to support H_1. The findings indicate that the profitability of an acquirer is positively associated with the business acquisition decision of listed companies in Australia.
H_2: Leverage of an acquirer is positively associated with the business acquisition decision of listed companies in Australia.	H_2 is tested using OLS multiple regression analysis as the main test using statistical regression model M1 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test provide some evidence to support H_2. The findings indicate that the leverage of an acquirer is positively associated with the business acquisition decision.
H_3: Liquidity of an acquirer is positively associated with the business acquisition decision of listed companies in Australia.	H_3 is tested using OLS multiple regression analysis as the main test using statistical regression model M1 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test do not provide evidence to support H_3. The findings indicate that the liquidity of an acquirer is negatively associated with the acquirer's business acquisition decision.

6.2.2 Research Question 2

The second research question of this study investigates whether the industry classification of an acquirer impacts on the business acquisition decision in RQ1. The second research question was addressed by testing the fourth hypothesis, H_4. Fourth hypothesis H_4 predicts that when an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision. Using the data of 160 completed business acquisitions representing 79.13 per cent of the population in terms of the total deal value of the completed business acquisitions during 1997 to 2012, this study employs multiple regression analysis to test the hypothesis H_4.

This study finds that the industry classification and the acquirer's profitability are statistically significantly positively associated with the business acquisition decision. This study finds that the industry classification and the acquirer's leverage are statistically significantly positively associated with the business acquisition decision. The study finds that the industry classification and the acquirer's liquidity are negatively associated with business acquisition decision.

Overall, this study concludes that the results of the multiple regression analysis provide evidence to support H_4 that when an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision of listed companies in Australia during 1997-2012, the acquirer's industry classification also impacts on the decision. The table 6.2 summarises RQ2 and associated hypothesis (H_4), the testing procedure to test this hypothesis and the findings.

Table 6.2: Summary of Research Questions 2

RQ2: Does the industry classification of an acquirer impact on the business acquisition decision in RQ1?		
Hypothesis	**Testing Procedure**	**Findings**
H_4: When an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision.	H_4 is tested using OLS multiple regression analysis as the main test using statistical regression model M2 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test provide significant evidence to support H_4. The findings indicate that when an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision of listed companies in Australia, the acquirer's industry classification also impacts on the decision.

6.2.3 Research Question 3

The third research question of this study investigates whether the time in terms of when the business acquisition occurs impacts on the business acquisition decision in RQ1. The third research question was addressed by testing the fifth hypothesis, H_5. Fifth hypothesis H_5 predicts that when an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the time also impacts on the decision. Using the data of 160 completed business acquisitions representing 79.13 per cent of the population in terms of the total deal value of the completed business acquisitions during 1997 to 2012, this study employs multiple regression analysis to test the hypothesis H_5.

This study finds that the time and the acquirer's profitability are statistically significantly positively associated with the business acquisition decision. This study finds that the time and the acquirer's leverage are statistically positively associated with the business acquisition decision.

The study finds that the time and the acquirer's liquidity are negatively associated with business acquisition decision.

Overall, this study concludes that the results of the multiple regression analysis provide evidence to support H_5 that when an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision of listed companies in Australia during 1997-2012, the time also impacts on the decision. The table 6.3 summarises RQ3 and associated hypothesis (H_5), the testing procedure to test this hypothesis and the findings.

Table 6.3: Summary of Research Questions 3

RQ3: Does the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ1?		
Hypothesis	**Testing Procedure**	**Findings**
H_5: When an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision, the time when the business acquisition occurs also impacts on the decision.	H_5 is tested using OLS multiple regression analysis as the main test using statistical regression model M3 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test provide significant evidence to support H_5. The findings indicate that when an acquirer's profitability, leverage, and liquidity affect the acquirer's business acquisition decision of listed companies in Australia, the time also impacts on the decision.

6.2.4 Research Question 4

The fourth research question of this study investigates how the macro-economic variables of interest rate, exchange rate and stock market index affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange. The business acquisition decision

(DV) is measured by the deal value which is the purchase price paid by an acquirer to buy a share of a target (Beatty *et al*., 1987; Cheng *et al*.,1989; Fraser and Kolari, 1987; Hannan and Rhoades, 1987; Palia,1993; Rogowski and Simonson, 1989). The fourth research question was addressed by testing the sixth to eighth hypotheses, H_6 to H_8. Sixth hypothesis H_6 predicts that the interest rate of Australia is positively associated with the business acquisition decision of listed companies in Australia. Seventh hypothesis H_7 predicts that the exchange rate of Australia is positively associated with the business acquisition decision of listed companies in Australia. Eighth hypothesis H_8 predicts that the stock market index of Australia is negatively associated with the business acquisition decision of listed companies in Australia. Using the data of 160 completed business acquisitions representing 79.13 per cent of the population in terms of the total deal value of the completed business acquisitions during 1997 to 2012, this study employs multiple regression analysis to test the hypotheses H_6 to H_8 (Erdogan, 2012; Hernando *et al*., 2008; Irina, 2021; Kamaly, 2007; Martynova and Renneborg, 2008; Vyas *et al*., 2012).

From the analysis of 160 completed business acquisitions representing 79.13 per cent of the population in terms of the total deal value of the completed business acquisitions during 1997 to 2012, this study finds that the macro-economic variable interest rate is statistically significantly positively associated with the acquirer's business acquisition decision. Overall, the results of the multiple regression analysis support H_6, in that the interest rate positively influences on the acquirer's business acquisition decision. This finding is consistent with studies of Erel *et al.* (2012), Irina (2021), Kamaly (2007), Marsh (1982), Reed and Babool (2003) and Taggart (1977).

The study finds that the macro-economic variable exchange rate is statistically significantly positively associated with the acquirer's business acquisition decision. Overall, the results of the multiple regression analysis support H_7, in that the exchange rate positively influences on the acquirer's business acquisition decision. This finding is consistent with studies of Benzing (1992), Clark *et. al*. (1988), Kamaly (2007), Melicher *et.al.* (1983), Nelson (1959), Nelson (1966), Poloncheck and Sushka (1987), Shughart and Tollison (1984), and Weston (1961).

The study finds that the macro-economic variable of stock market index is negatively associated with the acquirer's business acquisition decision. Even though the results provide evidence to support H_8, this positive association is not statistically significant. This finding of negative association is consistent with studies of Reed and Babool (2003) and Vasconcellos and Kish (1996 and 1998).

Overall, this study concludes that the results of the multiple regression analysis provide evidence to support H_6 that the interest rate of Australia is positively associated with the business acquisition decision of listed companies in Australia during 1997-2012, H_7 that the exchange rate of Australia is positively associated with the business acquisition decision of listed companies in Australia during 1997-2012, and H_8 that the stock market index of Australia is negatively associated with the business acquisition decision of listed companies in Australia during 1997-2012 . The table 6.4 summarises RQ4 and associated hypotheses (H_6, H_7 and H_8), the testing procedure to test these hypotheses and the findings.

Table 6.4: Summary of Research Questions 4

RQ4: How do the macro-economic variables of interest rate, exchange rate and stock market index affect the business acquisition decision of the acquirers that are listed on the Australian Securities Exchange?		
Hypotheses	**Testing Procedure**	**Findings**
H_6: Interest rate of Australia is positively associated with the business acquisition decision of listed companies in Australia.	H_6 is tested using OLS multiple regression analysis as the main test using statistical regression model M4 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test provide significant evidence to support H_6. The findings indicate that the interest rate is positively associated with the business acquisition decision of listed companies in Australia.
H_7: Exchange rate of Australia is positively associated with the business acquisition decision of listed companies in Australia.	H_7 is tested using OLS multiple regression analysis as the main test using statistical regression model M4 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test provide significant evidence to support H_7. The findings indicate that the exchange rate is positively associated with the business acquisition decision of listed companies in Australia.
H_8: Stock market index of Australia is negatively associated with the business acquisition decision of listed companies in Australia.	H_8 is tested using OLS multiple regression analysis as the main test using statistical regression model M4 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test provide some evidence to support H_8. The findings indicate that the stock market index is negatively associated with the business acquisition decision of listed companies in Australia.

6.2.5 Research Question 5

The fifth research question of this study investigates whether the industry classification of an acquirer impacts on the business acquisition decision in RQ4. The fifth research question was addressed by testing the nineth hypothesis, H_9. Nineth hypothesis predicts that when macro-economic variables of interest rate, exchange rate and stock market index affect the acquirer's

business acquisition decision, the acquirer's industry classification also impacts on the decision. Using the data of 160 completed business acquisitions representing 79.13 per cent of the population in terms of the total deal value of the completed business acquisitions during 1997 to 2012, this study employs multiple regression analysis to test the hypothesis H_9.

This study finds that the industry classification and the macro-economic variable interest rate are statistically significantly positively associated with the business acquisition decision. This study finds that the industry classification and the macro-economic variable exchange rate are statistically significantly positively associated with the business acquisition decision. The study finds that the industry classification and the macro-economic variable stock market index are negatively associated with business acquisition decision.

Overall, this study concludes that the results of the multiple regression analysis provide evidence to support H_9 that when macro-economic variables of interest rate, exchange rate and stock market index affect the acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision of listed companies in Australia during 1997-2012. The table 6.5 summarises RQ5 and associated hypothesis (H_9), the testing procedure to test this hypothesis and the findings.

Table 6.5: Summary of Research Questions 5

RQ5: Does the industry classification of an acquirer impact on the business acquisition decision in RQ4?		
Hypothesis	**Testing Procedure**	**Findings**
H_9: When macro-economic variables of interest rate, exchange rate and stock market index affect the acquirer's business acquisition decision, the acquirer's industry classification also impacts on the decision.	H_9 is tested using OLS multiple regression analysis as the main test using statistical regression model M5 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test provide significant evidence to support H_9. The findings indicate that when macro-economic variables of interest rate, exchange rate and stock market index affect the acquirer's business acquisition decision of listed companies in Australia, the acquirer's industry classification also impacts on the decision.

6.2.6 Research Question 6

The sixth research question of this study investigates whether the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ4. The sixth research question was addressed by testing the tenth hypothesis, H_{10}. Tenth hypothesis predicts that when macro-economic variables of interest rate, exchange rate and stock market index affect the acquirer's business acquisition decision, the time also impacts on the decision. Using the data of 160 completed business acquisitions representing 79.13 per cent of the population in terms of the total deal value of the completed business acquisitions during 1997 to 2012, this study employs multiple regression analysis to test the hypothesis $H_{10.}$

This study finds that the time and the macro-economic variables interest rate, exchange rate and stock market index statistically influence the business acquisition decision, even though this influence is not statistically significant.

Overall, this study concludes that the results of the multiple regression analysis provide evidence to support H_{10} that when macro-economic variables of interest rate, exchange rate and stock market index affect the acquirer's business acquisition decision, the time also impacts on the business acquisition decision of listed companies in Australia during 1997-2012. The table 6.6 summarises RQ6 and associated hypothesis (H_{10}), the testing procedure to test this hypothesis and the findings.

Table 6.6: Summary of Research Questions 6

RQ6: Does the time in terms of when the business acquisition occurs impact on the business acquisition decision in RQ4?		
Hypothesis	**Testing Procedure**	**Findings**
H_{10}: When macro-economic variables of interest rate, exchange rate and stock market index affect the acquirer's business acquisition decision, the time when the business acquisition occurs also impacts on the decision.	H_{10} is tested using OLS multiple regression analysis as the main test using statistical regression model M6 (refer to Section 3.3.1 of Chapter 3). The generalised method of moments is used to test the robustness of the results.	The results from the main test and the robustness test provide some evidence to support H_{10}. The findings indicate that when macro-economic variables of interest rate, exchange rate and stock market index affect the acquirer's business acquisition decision, the time also impacts on the decision.

6.3 Academic Contribution

This study contributes to the literature in several ways. First, as far as could be ascertained, this is the first study to comprehensively investigate the determinants of business acquisitions of companies that are listed on the Australian Securities Exchange. Although research has been undertaken to examine determinants of business acquisitions mainly on the U.S. and the European markets mostly focusing on cross-border business acquisitions, determinants applicable to these may not equally influence on the domestic business acquisitions in Australia. Although there are very few research have been undertaken to examine determinants of domestic business acquisitions in countries like the U.S and the U.K, determinants applicable to these may not equally influence on the business acquisitions of acquirers that are listed on the Australian Securities Exchange due to differences in its governance framework and economic environment underlying its business framework. Therefore, there is a gap in the literature with respect to identifying determinants of business acquisitions of acquirers that are listed on the Australian Securities Exchange. Second, to the best of my knowledge this is the first study to examine factors influencing the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange, from acquirer's characteristics and macro-economic point of view. Third, this study provides an original contribution to the literature by examining whether the industry classification and the time impact on the business acquistion decision of acquirers that are listed on the Australian Securities Exchange from the point of view of acquirer's charateristics and macro-economic envirionment.

6.4 Implications

This study's findings have the following implications. Its empirical evidence for the effect of the factors influencing the business acquisition decision of acquirers that are listed on the Australian Securities Exchange is useful for Australian firms in estimating the most possible purchase price consideration.

From a capital market perspective, this study provides evidence for policy makers to develop a competitive capital market and to realise Australian firms their competitive position in the global market. Business acquisitions are a vibrant investment decision that forms part of a firm's growth strategy, and influences and determines firm value. Evidence of this study provides valuable guidance for Australian firms to assess and choose the right business acquisition investment decision to enhance business growth and shareholders' wealth.

The study's findings on the factors influencing the business acquisition decision of acquirers that are listed on the Australian Securities Exchange help for Australian firms to estimate the most possible purchase price consideration. The study's findings on the factors influencing the business acquisition decision of acquirers that are listed on the Australian Securities Exchange help corporate managers, rival firms, lending institutions, stock market, government and related regulatory institutions in corporate and strategic planning including corporate risk management, stabilisation of earnings and corporate stability, formulation of economic and monetary policies including lending reforms, stronger governance framework, investor protection, supply-side and trade policies distinctively to develop the capital market for wealth explanation especially to be

more competitive with the globalisation of commerce, and to achieve or maintain full employment, a high rate of economic growth, and to stabilise prices and wages.

6.5 Limitations

The study is subject to the following limitations. The first limitation is that this study only examines the factors influencing the business acquisition decision of acquirers listed on the Australian Securities Exchange, due to difficulty in obtaining the data and time limitations. Although, this limits the generalisability of this study's findings on the factors influencing the business acquisition decision to all firms in Australia, companies listed on the Australian Securities Exchange nevertheless comprises the major firms in Australia.

The second limitation relates to the business acquisition type in the study sample. The study sample consists of domestic business acquisitions by companies listed on the Australian Securities Exchange. Although, this limits the generalisability of this study's findings on the factors influencing the business acquisition decision to all business acquisitions: domestic and cross-broader, by Australian companies, cross-broader business acquisition decision has more broad and complex influences as they involve more than one jurisdiction.

The third limitation relates to the business acquisition category in the study sample. The study sample consists of successful (or completed) business acquisitions of companies listed on the Australian Securities Exchange. Although, this limits the generalisability of this study's findings on the factors influencing business acquisition decision to all business acquisition categories:

successful and unsuccessful, of Australian companies, all relevant data are not available for the unsuccessful business acquisitions.

6.6 Future Research

The results of this study as well as the limitations considered in Section 6.5 suggest several directions for future research. First, since this study focuses on the factors influencing the business acquisition decision of companies listed on the Australian Securities Exchange and not all firms in Australia, future research studies could examine the factors influencing the business acquisition decision of firms in Australia that are not listed on the Australian Securities Exchange.

Second, since this study focuses on the factors influencing the business acquisition decision of domestic business acquisitions of companies listed on the Australian Securities Exchange, future research studies could examine the factors influencing the business acquisition decision of cross-broader business acquisitions.

Third, since this study has examined the successful (or completed) business acquisitions of companies listed on the Australian Securities Exchange, future research studies could examine both successful and unsuccessful or unsuccessful business acquisitions of firms in Australia by employing a different research methodology to capture unavailable data.

6.7 Conclusion

Identification of factors influencing the business acquisition decision (the deal value) of acquirers that are listed on the Australian Securities Exchange is crucial since investments in business acquisitions have become a key part of corporate investment strategy. Therefore, exploring the factors influencing the business acquisition decision of companies listed on the Australian Securities Exchange should aid regulatory institutions in Australia in formulating new policies to develop the capital market to be more competitive.

Using the Ordinary Least Squares (OLS) multiple regression analysis as the main test, this study provides evidence to support that the acquirer's profitability is statistically significantly positively associated with the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange. This finding supports those of Erel *et al.* (2012), Kastrinaki and Stoneman (2007), and Vyas *et al*. (2012). This finding shows evidence that the profitable acquirers tend to pay a higher price to buy a share of a target suggesting that the profitable acquirers tend to undertake business acquisitions as part of their growth strategies to generate higher returns to their shareholders.

The study provides empirical evidence that the acquirer's leverage is statistically significantly positively associated with the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when acquirer's business acquisition decision is influenced by their industry classification. The positive association between acquirer's leverage and investment in business acquisitions is consistent with the prior studies such as those of Dessyllas and Hughes

(2005), Hernando *et al*. (2008), and Vyas *et al*. (2012). Debt-equity ratio has direct impact on the cost of capital, return on investments and the growth strategy of a firm when deciding on investing in organic growth or business acquisitions.This finding shows evidence that the highly levered acquirers pay a higher price to buy a share of a less levered target, suggesting that these acquirers tend to undertake business acquisitions aiming to benefit the incentives coming from the federal tax structure, increase the debt capacity of the acquirer post the business acquisition, establish industry concentration as part of their growth strategies to generate higher returns to cover payments to debt holders and to stabilise earnings to their shareholders.

Further, this study provides empirical evidence that the acquirer's liquidity is statistically significantly negatively associated with the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange. This negative association between acquirer's liquidity and the business acquisition decision is not consistent with the findings from prior studies, such as those of Boyan and Peter, (2002), Vyas *et al*. (2012), and Weston *et al.* (2007). This finding shows evidence that the cash rich acquirers who enjoy a low cost of capital and operate with high growth opportunities respond with lower bid prices for targets who experience cash flow difficulties for business acquisitions exercising their bargaining power for targets that have high growth prospects but has low liquidity.

The results of this study support that the acquirer's profitability, leverage, and liquidity have a statistically significant impact on the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when acquirer's business acquisition decision is

influenced by their industry classification.This means that the price an acquirer willing to pay to buy a share of a target is influenced by the acquirer's profitability, leverage, liquidity, and the industry classification. The findings of the study suggest that more profitable acquirers who operates in growth industries respond with higher bids prices for targets who operates in growth industries when they undertake business acquisitions to realise efficiency gains to be more competitive in the industry. The findings also suggest that highly levered acquirers who operate in growth industries tend to bid higher prices for less levered targets who operate in growth industries in busines acquisitions aiming to establish industry concentration and to generate monopolistic returns. The study results relating to the acquirer's liquidity and the impact of acquirer's industry classification suggest that cash rich acquirers who operate in growth industries tend to bid low prices for targets who experience cash flow difficulties and operate in growth industries, when they undertake business acquisitions due to their healthy cash position, the associated low cost of capital and the bargaining power.

Further, the study provides empirical evidence to support that the acquirer's profitability, leverage, and liquidity have a statistically significant impact on the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when acquirer's business acquisition decision is influenced by the time in terms of when the business acquisition occurs. This means that the price an acquirer pays to buy a share of a target is influenced by the acquirer's profitability, leverage, liquidity, and the time in terms of when the business acquisition occurs. The findings of the study suggest that during a period of economic growth and increased employment, highly profitable acquirers tend to bid higher prices as an effective investment

strategy to establish their competitive position in the market. Similarly, during a period of economic growth and increased employment, highly levered acquires tend to bid higher prices for less levered targets for business acquisitions as an effective investment strategy to enhance their debt capacity and market share. During a period of economic growth and increased employment, cash rich acquirers tend to bid lower prices for targets who experience cash flow difficulties for business acquisitions as an effective investment strategy utilising their bargaining power due to the associated low cost of capital to establish their competitive position in the market.

This study provides empirical evidence to support the macro-economic variable, interest rate is statistically significantly positively associated with the acquirer's business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange. This finding is consistent with Erel *et al*. (2010), Irina (2021), Marsh (1982), Kamaly (2007), Reed and Babool (2003) and Taggart (1977).Business acquisitions become costly for acquirers at higher interest rates due to the associated higher cost of borrowing. Increase in interest rates provides a positive signal of rising economic activity and encourages cash rich acquirers to target undervalued assets by buying their stocks for business acquisitions utilising their associated low cost of capital.

The results of this study support that the macro-economic variable, exchange rate (ratio of Australian dollar to United States dollar) is statistically significantly positively associated with the acquirer's business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange. The positive association between the macro-economic variable, exchange rate and the investments in business acquisitions is consistent with the prior studies such as those

of Erel *et al*., (2010), Kamaly (2007), and Reed and Babool (2003). Appreciation of Australian dollar makes Australian goods and services exports expensive for overseas buyers, and as a result domestic fims experience a decrease in demand for their exports. Appreciation of Australian dollar makes imported goods and services to be cheaper at the domestic market. The results suggest that the reduced exports in the global market for Australian firms, and the cheaper imported goods and services in the domestic market created due to the appreciation of the Australian dollar, motivate Australian firms to undertake business acquisitions as part of their growth strategies to establish a competitive market position, better diversification, increased productivity, quality and cost savings to generate higher returns to their shareholders and competitive prices to consumers. This corporate behaviour is further supported by the synergy gains explained by the Efficiency theory.

The study provides empirical evidence to support that the macro-economic variable, stock market index is statistically negatively associated but not significant with the acquirer's business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange. This finding of negative association between the macro-economic variable, stock market index and the investment in business acquisitions is consistent with previous studies such as those of Kaplan (2007), Reed and Babool (2003) and Vasconcellos and Kish (1996 and 1998). Rise in stock market index increases the cost of business acquisition. When stock market index decreases, acquirers tend to bid slightly higher prices for business acquisitions for undervalued stocks.

The results of this study support that the macro-economic variables interest rate and exchange rate have a statistically significant positive impact on the business acquisition decision (the deal value)

of companies listed on the Australian Securities Exchange when acquirer's business acquisition decision is influenced by their industry classification.This means that the price an acquirer willing to pay to buy a share of a target is influenced by the interest rate, exchange and the acquirer's industry classification. The findings of the study suggest that rise in interest rates creates a market for business acquisitions for cash rich acquirers who enjoy a low cost of capital and operate in growth industries to buy targets with cash flow difficulties but have high growth potential. The findings of the study suggest that an appreciation of Australian dollar encourages acquirers to bid higher prices for business acquisitions particularly aiming at industry concentration to compete effectively with cheaper imported goods and services. The results of this study support that the macro-economic variable stock market index has a statistically negative association with the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange when acquirer's business acquisition decision is influenced by their industry classification. The findings of the study suggest that when stock market index rises acquirers who operate in growth industries tend to bid lower prices for targets whose stocks are overvalued by the market, for business acquisitions.

Lastly, the study provides empirical evidence to support that the macro-economic variable stock market index has a statistically positive bearing on the business acquisition decision (the deal value) of companies listed on the Australian Securities Exchange over time focused on the undervalues stocks.

Chapter 6: Summary and Conclusion

All the above findings of this study's main test, that is the Ordinary Least Squares (OLS) multiple regression analysis are consistently supported by the results of its robustness test, that is the Generalised Method of Moments (GMM) analysis.

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