FINANCIAL CONDITION OF MALAYSIAN PROPERTY COMPANIES AND RELATIONSHIP WITH FINANCIAL RATIOS AND MACROECONOMIC FACTORS

MOHAMAD LUKMANNORHAKIM BIN KAMURI

MASTER OF SCIENCE (FINANCE)
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MOHAMAD LUKMANNORHAKIM BIN KAMURI

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ABSTRACT

The main objective of this research was to analyse the financial conditions of selected companies in the property sector listed in Bursa Malaysia. Further, this research also investigated the significant relationships between the financial ratios (leverage, profitability, liquidity) and macroeconomic factors in evaluating the financial condition of property companies measured by Altman Z-score. The research covered 45 property companies listed in Bursa Malaysia as a sample. The five-year financial data (from 2014 to 2018) were collected from Bursa Malaysia Marketplace Database and the company's annual reports. Statistical Package for the Social Sciences (SPSS) software was employed to analyse the data by using linear regression analysis in identifying the significant relationship of the financial condition of property companies with the financial ratios and macroeconomic factors. The findings of this research found that nine to fourteen property companies were financially distressed for the period between 2015 and 2018, and the companies with small market capitalization had a higher tendency to experience financial distress. The research also reveals that the significant relationships between leverage, profitability, and liquidity represented by debt ratio (DR), return on assets (ROA), and current ratio (CR), respectively, with the financial condition of property companies. Meanwhile, none of the macroeconomic variables was found to have a significant relationship. Overall, this research could assist corporate managers, fund managers, financial analysts, and investors in monitoring the financial health of property companies from being categorized as financially distressed companies.

Keywords: financial condition, financial distress, financial ratios, macroeconomic variables.

ABSTRAK

Objektif kajian ini adalah untuk mengkaji tahap kedudukan kewangan syarikat-syarikat hartanah terpilih yang tersenarai di Bursa Malaysia. Kajian ini juga untuk mengenalpasti hubungan antara nisbah kewangan (keberhutangan, keuntungan, kecairan) dan pembolehubah makroekonomi dalam mempengaruhi kedudukan kewangan syarikat-syarikat hartanah berdasarkan model Altman Z-skor. Sampel yang digunakan dalam kajian ini melibatkan 45 syarikat hartanah yang tersenarai di Bursa Malaysia. Data kewangan syarikat berkenaan bagi tempoh 2014 hingga 2018 diperolehi dari platform *Bursa Malaysia Marketplace Database* dan laporan tahunan syarikat. Perisian *Statistical Package for the Social Sciences (SPSS)* telah digunakan untuk menganalisis data dengan menggunakan ujian regresi linier dalam mengenal pasti hubungan yang signifikan antara kedudukan kewangan syarikat hartanah dengan nisbah kewangan dan pembolehubah makroekonomi. Kajian ini telah mendapati sembilan hingga empat belas syarikat hartanah mengalami kekangan kewangan bagi tempoh 2015 hingga 2018, dan syarikat hartanah dengan modal pasaran yang rendah mempunyai kecenderungan yang lebih tinggi untuk mengalami kekangan kewangan. Kajian ini turut mendapati terdapat hubungan yang signifikan antara nisbah keberhutangan, keuntungan dan kecairan yang diwakili oleh nisbah hutang (DR), pulangan atas aset (ROA) dan nisbah semasa (CR) terhadap kedudukan kewangan syarikat-syarikat hartanah. Manakala, tiada pembolehubah makroekonomi yang mempunyai hubungan yang signifikan terhadap kedudukan kewangan syarikat-syarikat hartanah. Secara keseluruhan, kajian ini dapat membantu pengurus korporat, pengurus dana pelaburan, penganalisis kewangan dan pelabur dalam memantau kedudukan kewangan syarikat-syarikat hartanah daripada dikategorikan sebagai syarikat yang mengalami kekangan kewangan.

Kata kunci: tahap kedudukan kewangan, kekangan kewangan, nisbah kewangan, pembolehubah makroekonomi.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

GLCs : Government Linked Companies

PN17 : Practice Note 17

GN3 : Guidance Note 3

DR : Debt Ratio

NPM : Net Profit Margin

ROA : Return on Asset

CR : Current Ratio

GDP : Gross Domestic Product

BLR : Base Lending Rate

IR : Inflation Rate

MHPI : Malaysian Housing Price Index

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The property sector offers various contributions to the other sectors in the Malaysian economy and continues to have a critical role for the nation's economic growth as it creates a basis for generating output and employment, especially in the late 1980s to the mid-1990s. Due to the exponential population growth and its contribution to domestic wealth through asset generations and property investment, the property sector is among the fastest-growing sectors in Malaysia.

The development of the property market contributes to the economic expansion, particularly when a growing property market has influenced the consumption, construction, financial and banking sectors to grow, creating business and employment opportunities. This reflects the significant contribution of property market towards the Malaysian economy. The importance of the property market to the Malaysian economy can be observed from its contribution to gross domestic product (GDP). REHDA's President remarked that the property sector is a key sector in Malaysia as it has a "multiplier effect" in over than 140 industries and contributes to more than 3% of the total Malaysian GDP. This sector is a major contributor to the development of the Malaysian economy, considering its spill-over effect and 14% contribution to the Malaysian economy (The Edge Malaysia, 2019).

The property market is highly dependent on economic conditions and fundamental macroeconomic factors that have significant influences on property prices, such as inflation, interest rates, and income level (Shiller, 2001). Higher inflation and interest rate could cause the property market to crash, and further would lead to a significant decline in the prices of properties. If this happens, there would be retrenchment in several other sectors, possibly leading to an economic downturn and could cause a recession.

In terms of property buying regulations, Malaysia has been recognized as one of the most foreign-friendly countries in Southeast Asia, and this has influenced many ex-patriates' decision to live in Malaysia permanently. The Straits Times (2018) reported that Malaysian Finance Minister in his statement stated that foreigners are encouraged to purchase and own properties in Malaysia as they inject funds and bring highly-valued direct investments to the domestic economy.

The financial institutions and banking sector is one of the key drivers in the Malaysian property market as they have engaged directly through mortgage financing. Commercial banks and financial institutions have dominated the mortgage market in Malaysia. Thus, the decline in the mortgage supply and property market crash would affect the real economy; there is a possibility of a higher default on loans, which would further cause them to record millions of losses as a result of over-exposure in property market financing. The Malaysian mortgage market had boomed from 1990 to the middle of 1997, before the 1997 Asian financial crisis. The Malaysian government had introduced

and adopted investor-friendly policies in order to minimize the impact of this crisis and to promote foreign investment in the local property market.

On top of that, technology and innovation play a major contribution to the property market growth following the advancement in information and communication technology (ICT) having a significant role in changing the business climate. The property companies are directly influenced by the evolving digital technologies; in order to succeed in this competitive market, they have to transform their ways of doing business. The growth of Property Technology, also known as PropTech, represents the combined effort of the real-estate, Internet-of-Things (IoT), and the financial and technological industries.

PropTech is the current trend going forward as it simplifies procedures, assist in gathering transparent data and develop systems, and is cost-effective. For example, software for development or construction companies could have project management applications, specifically to document and store information which creates efficiencies in the workflow process. Meanwhile, the revolution of technology also has provided a new marketing environment that enables local and international marketing activities. The use of virtual reality (VR) technology which offers a 360-degree virtual viewing experience has transformed the way how property market functions as it allows people to virtually view properties from their homes. The power of VR technology could assist property companies to grow their business and deliver top-level services.

Nowadays, the concept of sustainability is a critical component for the construction and property industry to take into consideration due to environmental requirements and cost effective measures. In view of this, the emergence of renewable technologies has influenced the property companies to shift from the usage of conventional to more environmental-friendly materials and practices, in order to implement sustainable construction and control adverse environmental impact. For instance, the adoption of Industrialized Building System (IBS) in the property development in Malaysia would help to ensure environmental sustainability, quality affordable housings, and lower cost structures, as well as shortens the construction cycle time by at least 30%.

In line with the Industrial Revolution 4.0, the transition of IBS technology is expected to speed up the construction of affordable housing projects for Malaysia. Prof Dr Zuhairi Abd Hamid, a technical expert of Construction Research Institute of Malaysia (CREAM), expressed that the adoption of new technologies in the construction sector in Malaysia would accelerate the development of affordable houses, thus allowing the government to achieve its target to build 1 million units of affordable houses in over ten years (Bernama, 2019).

1.1.1 Overview of Malaysian Property Market

As a multi-cultural country, property companies have to consider this factor in their property development and planning. The variety in residential designs of this country's three major racial-religious groups is discernible, resulting from the socio-economic attributes over the past 30 years. According to Wan et al. (2010), the interface between three factors has contributed to the growth of the Malaysian property market; an increasing population, higher urbanization rates, and the growing economy.

The property market in Malaysia is highly regulated as properties companies are required to obtain necessary approvals by the relevant state and federal authorities for a development project. The approval procedures require the participation of several federal and local government departments and agencies including the Land Offices, Local Authorities, the Survey Department, the Town and County Planning Department, and other agencies. In addition, all property development projects must adhere to state and federal authorities' policies and requirements such as the Bumiputera limit, price regulation, size or built-up areas for low-cost residential properties, and space or area for public facilities allocation.

The Malaysian property market is divided into few categories such as residential, commercial (shopping complexes and offices), industrial (factory), recreational facilities, agricultural, and hospitality (Awil, 2007). The category of residential property has always remained a key driver of the property market with the price varying from other property

categories like commercial, industrial, or retail properties because of the price volatility which depends on the type and the location of properties being built. The price of residential property has risen steadily in recent years, causing a challenge for the low-income community to purchase a property (Chin, 2013).

In Malaysia, property developments can either be operated by public or private developers. Public developers have a social responsibility to fulfil the housing needs for lower income groups by constructing low-cost and affordable houses, while the private developers may provide houses to all socio-economic groups with low-, medium-, and high-cost housings. For private developers, they must secure the licenses and permits from the relevant ministry for sales and advertising.

The construction sector produces and supplies the properties to the buyer through the property development projects. A study done by Mahmood and Zakaria (2007) found that companies in the property and construction sectors have high leverage as compared to the companies in other sectors. This indicated that operation activities in both sectors require a substantial amount of capital investment, which could cause the companies to secure more financing when commencing new projects. In view of this, property companies may face financial distress during uncertain economic situations because they have higher fixed costs and illiquid assets, while their revenues and profits are vulnerable, particularly in the economic downturn.

To address the housing affordability issue in the Malaysian property market, the government has continuously introduced various efforts and initiatives in promoting affordable housing. Providing adequate, affordable, and quality housings for all Malaysian citizens have been the main agenda for the Malaysian government under the Seventh Malaysia Plan (1996-2000) up to the Ninth Malaysia Plan (2006-2010) (Economic Planning Unit, 2000). Subsequently, in early May 2019, the Ministry of Housing and Local Government had introduced a National Affordable Housing Policy (DRMM) which specify the requirements, standards, and prices of properties.

DRMM is a sub-policy under the National Housing Policy 2018-2025, launched on 28th January 2019 with the main objective of providing holistic management on the housing affordability issue. This policy emphasizes five core areas comprising of enhancing accessibility and affordability, quality housing for all, inclusive neighbourhoods, effective housing and transportation, and institutional relations for the housing policy.

The federal and states government, as well as private developers, are working closely to facilitate property ownership by announcing the establishment of various affordable housing initiatives and schemes such as People's Housing Project (PPR), 1Malaysia People's Housing Programme (PR1MA), Federal Territory Affordable Housing Policy (RUMAWIP), 1Malaysia Civil Servant Housing Programme (PPA1M), Rumah Selangorku, and MyHome.

1.1.2 Housing Affordability and Property Overhang in Malaysia

Housing affordability is one of the main problems experienced in most countries with Malaysia being no exception over the last decades, particularly in main cities like Shah Alam, Damansara, Kuala Lumpur, Pulau Pinang, and Johor Bahru. Housing affordability refers to an individual's or a household's financial ability and position to pay the costs involved for owning a house. Housing is considered unaffordable if households pay higher than 30% of their salaries to occupy it (Osman et al., 2017).

A research conducted by the Khazanah Research Institute (2019) showed that for the period of 2002 to 2016, there was no major improvement in housing affordability in Malaysia as the median multiple hovered between 4.0 and 5.0, higher than the 3.0 threshold for housing affordability. The overall housing affordability in Malaysia has deteriorated significantly between 2012 and 2014, growing from 4.0 in 2012 to 5.1 in 2014. It was partly attributed to the lack of responsiveness of housing supply to effective demand.

The main problem in improving homeownership affordability is the constant increase in house prices in local as well as global market. In Malaysia, house prices have risen since 2009 at a compound annual rate of 9.1% (Khazanah Research Institute, 2019). In addition, the growth rate of income among Malaysian was lower when compared to house prices inflation that has contributed to this issue (Bank Negara Malaysia Annual Report, 2013). Further, Khazanah Research Institute (2019) found that no normal average

wage and salary increment in Malaysia could meet with the increment in residential properties.

The continuous housing affordability issue has directly impacted the sales of residential properties in Malaysia, resulting in many being unsold. According to the Property Market Report 2018, the unsold residential property situation shows an upward trend following the growth of 30.6% in volume and 27.0% in value to 32,313 units worth RM19.86 billion as compared to 24,738 units equivalent to RM15.64 billion in 2017 (Valuation and Property Services Department, 2019). In terms of segment, high-rise residential segment like apartments, condominiums, and serviced apartments represent 43.4% of the total overhang units and about two-thirds of total unsold units. By state, Perak has the highest number of overhang units, followed by Kuala Lumpur, Johor, and Selangor.

Table 1.1
Malaysian Property Overhang and Unsold Units by Segment

Property Segment (Units)	Overhang			Unsold					
				Under Construction			Not Constructed		
	2017	2018	Y-o-Y (%)	2017	2018	Y-o-Y (%)	2017	2018	Y-o-Y (%)
Residential	24,738	32,313	30.6	61,882	80,894	30.7	12,626	19,865	57.3
Shops	4,546	5,055	11.2	5,889	7,233	22.8	332	385	16
SOHO	563	1,343	138.5	3,448	4,965	44	307	884	187.9
Serviced Apartments	6,364	11,371	78.7	45,955	37,285	-18.9	5,185	12,864	148.1
Industry	999	1,183	18.4	916	812	-11.4	124	176	41.9
TOTAL	**37,210**	**51,265**	**37.77**	**118,090**	**131,189**	**11.09**	**18,574**	**34,174**	**83.99**

Source: National Property Information Centre (NAPIC)

The National House Buyers' Association claimed that the abundance of residential properties priced below RM300,000 was constructed in less desirable locations with poor public transport connectivity and public amenities. Hence, the properties were less attractive to the first-time, local homebuyers (The Edge Market, 2019). In view of these situations, some property companies might experience losses due to the delay in property development projects and the drop in properties' sales.

Financing plays a key role to ensure sustainable property demand, while the stringent financial conditions that banks and financial institutions implement have contributed to the property overhang situation in Malaysia. The raising concern in the uncertainty of domestic economy, the stringent home financing adopted by those institutions, and the higher rates of home financing have adversely affected the Malaysian property market.

The Malaysian property prices may also be influenced by the changes in financial and monetary regulations made by the government and the Bank Negara Malaysia. As such, several incentives and financial assistance schemes have been initiated by the government to resolve the overhang dilemma and to increase homeownership, including Youth Housing Scheme (YHS), First House Deposit Financing Scheme (MyDeposit), Rent-to-Own Scheme, BNM's RM1 billion Fund, stamp duty exemption, rebate, and other initiatives.

Despite the fact that Malaysia is currently experiencing the issues of overpriced properties and a slowing economy, the introduction and implementation of various

schemes and incentives by the government are important to have a greater influence on the residential property market. The initiatives could as well address the situation of overhanging properties, even though it would require more time for the economy to absorb before a significant turnaround could take place on the residential market.

1.2 Problem Statement

Determining a company's financial condition as either being in financial distress or in a good financial position is very crucial, particularly for the public listed companies. The financial distress experienced by a company is not a sudden occurrence. Financial problems often accumulate over time, and occurs long before the company's bankruptcy or corporate failure is exposed to the public. Enron, Lehman Brothers, and General Motors were among the world's most prominent corporate bankruptcies or financial failures that occurred in the 2000s (Rodgers, 2011). Meanwhile, Axis Incorporation Bhd., Transmiles Group Bhd., Fotronics Corporation Bhd., and Wimems Corporation Bhd. were among the corporate failure and bankruptcies that happened in Malaysia in the late 2000s.

To investigate a company's financial condition prior to distress or failure, the Altman Z-score model, probit model, and logic model are among the popular model used in various research. This topic is considered a very popular topic among researchers worldwide in various countries and industries such as done by Salehi and Abedini (2009) and Geng, Bose, and Chen (2015) in Iran and China, respectively. According to Khong, Low, Tee,

and Wan Lim (2015) and Mohammed (2012), most of the past studies in Malaysia were carried out to determine the companies' financial failure in various sectors and some studies concentrated only on the Malaysian public listed companies categorized under PN17.

Meanwhile, studies by Alifiah, Salamudin, and Ahmad (2013), Alifiah (2014), and Nur Hafizah (2015) concentrated on the public listed companies' financial condition and financial distress in manufacturing companies, consumer products industry, trading and services sector. However, the literature showed that no studies were carried out to evaluate the financial condition of publicly listed companies in the Malaysian property sector. Nevertheless, a few studies had used macroeconomic factors as the independent variables in identifying the relationship or influence on the financial condition among Malaysian companies.

The level of a company's financial condition is subjected to its financial performances. As such, the prolonged slowdown in the Malaysian property market may affect the property companies' financial performance, leading to the financial distress due to the substantial drop in properties sales and profitability, and further affect their financial position. The deterioration of a company's profitability and cash flow could influence the liquidity and efficiency of its operations.

Therefore, it would be of great interest to concentrate on the Malaysian property sector by evaluating the financial condition of property companies in Bursa Malaysia as either

being in financial distress or in a good financial position. Furthermore, it is important in identifying the significant relationship between the companies' financial condition, as calculated by Altman Z-score, with financial ratios and macroeconomic factors. The financial ratios and Malaysian macroeconomic factors might have great influences or impacts on the financial condition of the listed property companies.

1.3 Research Questions

The three (3) main questions identified and designed to answer the problem statement discussed above are as follows:

i. What are the financial conditions of listed companies in the property sector?

ii. Is there a significant relationship between financial ratios (leverage, profitability, liquidity ratio) and Altman Z-score to evaluate the financial condition of property companies?

iii. Is there any significant relationship between macroeconomic factors and Altman Z-score to evaluate the financial condition of property companies?

1.4 Research Objectives

Based on the research questions mentioned above, the three (3) objectives in conducting this research are as follows:

i. To analyse the financial conditions of listed companies in the property sector as either being in financial distress or in a good financial position;

ii. To identify the significant relationship between financial ratios (leverage, profitability, liquidity) and financial condition of listed companies in the property sector;

iii. To investigate the significant relationship between macroeconomic factors and financial condition of listed companies in the property sector.

1.5 Scope and Limitation of the Study

This dissertation primarily concentrates on the financial conditions of listed companies in the property sector. The research covers a period of five years from the financial year end 2014 until 2018. The financial information for those companies was obtained from financial statements which consisted of the profit and loss statements, balance sheets, and cash flow statements. All information was available in the annual report of the company, Bursa Malaysia, and other relevant websites.

The main limitation in conducting this research was the data availability. None of previous research was found to evaluate financial conditions of companies in the properties sector, involving financial distress or failure, either in Malaysia or in other countries.

This research also employed the macroeconomic factors, namely gross domestic product (GDP), base lending rate (BLR), inflation rate (IR), and Malaysian housing price index (MHPI) to explore the significant association or influence of these factors with the degree of the financial condition of the listed property companies. However, there was limited

research using BLR as one of macroeconomic factor, although it was proven significant in identifying the financial distress among trading and service companies (Alifiah, 2014).

In order to obtain a homogeneous sample to reduce bias and produce more reliable results, this research determined that the criterion for sampling was property companies having the financial year end in December for the five years between 2013 and 2018. Therefore, this research had identified 45 listed property companies which have the audited financial statement ended in December.

1.6 Significance of Study

Research and analysis on the Malaysian property sector have been conducted by several public and private institutions like National Property Information Centre (NAPIC), Khazanah Research Institute (KRI), Valuation and Property Services Department, and other consultation agencies. The research on financial distress or financial failure companies has been a favourite subject among researchers in the finance field, although there is a lack of past research on the financial condition related to property companies and the influence of Malaysian economy and property market conditions to it.

The contribution of the property market is very crucial for the Malaysian development and economic growth. When the increase in property price is not supported by macroeconomic fundamentals and other underlying factors, it can cause the real estate bubble to burst, which would have a significant impact on economic development. Malaysia had experienced a short duration real estate bubble burst due to the spill-over

effect from the US subprime crisis that contributed to the 2007-2008 global financial crisis (Yip et al., 2017). Therefore, it is important to analyse the property companies' financial condition amid the growing number of unsold housing units and prolonged slowdown in the Malaysian property market and economy may expose the companies to financial risk and operation losses due to the delay in the property development project and the drop in property sales.

Key stakeholders, including investors, become more cautious and anxious with the reliability of companies during the economic slowdown. In this respect, it is important to evaluate the property companies' financial condition as it could help them to improve their decision and mitigate the risk of loss by taking out their funds from distress-prone companies. Considering the ability to evaluate the financial condition as well as to forecast the possibility of the financial distress, it is useful for companies in making wise and prudent decisions, improve its financial position, and look for solutions before the situation worsens.

1.7 Organization of the Thesis

The structure of this research thesis is divided into five chapter. The first chapter consists of the introduction, background of this research, problem statement, research questions, and research objectives. The next chapter provides the literature review and discusses research related to this topic. After reviewing different studies in the literature, the methodology of this research is formulated in the subsequent chapter. Discussion on the methodology and data collection is in the third chapter, and this study was based on

quantitative methods. The fourth chapter presents and discusses the findings of this study. The analysis of the findings provides the answers to the research questions. The last chapter of this study focuses on the conclusion from the findings and suggestions for future study.

1.8 Chapter Summary

Overall, Chapter 1 introduced the Malaysian property market and highlighted the current development of technology and innovation in the property market. This chapter also emphasized on the current issues experienced in the Malaysian property market, such as housing affordability and property overhang issues. On top of that, this chapter stated the problem this research aimed to investigate within this topic, with the research questions that arose and the subsequent research objectives.

Furthermore, the scope and limitation of this research have been specified to provide an overview of how this research was conducted. Meanwhile, the significance of this study indicated the importance or contribution of this research and how the findings could be beneficial to the relevant parties. Lastly, the organization of thesis briefly describes and highlights the contents of each chapter in this thesis.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Several studies on the corporate financial condition in order to assess the financial difficulty or financial failure have been undertaken and reported in the literature. This chapter provides a review of the literature related to this research, focusing on the studies that identified or evaluated the companies' financial condition as well as financial distress in various sectors using various methodologies.

2.1 Evaluating Corporate Financial Condition: Altman Z-Score Model

Edward Altman had established the Altman Z-score model in 1968, and many researchers have commonly used this model to analyse financial conditions and detect financial distress, as well as to predict the bankruptcy of companies. The financial information required to be included in the model or formula was essentially provided in the company's statement of income and balance sheet. Altman (1968) notes that the five financial ratios formulated in the model are working capital divided by total asset, retained earnings divided by total assets, earnings before interest and taxes (EBIT) divided by total assets, the market value of equity divided by total liabilities, and sales divided by total assets.

The Altman's Z-score model is a multivariate statistical technique which could be utilized to assess the financial issue and to measure a company's risk of bankruptcy within two years. This is consistent with the research performed by Altman and Hotchkiss (2010) as they found that the Altman Z-score model is a reliable indicator to recognize the financial difficulties of companies in less than two years before bankruptcy. However, Mohammed et al. (2012) observed the highest accuracy of the Altman Z-score model when assessing a company's financial condition and detecting the financial distress within 12 months before bankruptcy.

Research by Maina and Sakwa (2010) and Hayes et al. (2010) revealed that the Altman Z-score model has 72 to 80 percent reliability in identifying financial failure of a company. Meanwhile, a research carried out by Ali et al. (2018) to investigate the financial condition of Malaysian non-financial companies found that the Altman Z-score model proved to be more reliable and accurate in forecasting the financial failure of companies in the manufacturing sector compared to the non-manufacturing sector. Al-Manaseer and Al-Oshaibat (2018) suggested that the model is very practical for forecasting company insolvency and monitoring the risks of financial failures. Furthermore, it could facilitate the investors in assessing the state of companies' financial condition when investing.

The Altman Z-score model is a famously common topic among academics and researchers, and the previous studies have also revealed that the model is a valuable instrument in evaluating a company's financial condition. Most of the studies have

examined the applicability of this model, together with financial ratios, to evaluate the financial condition as well as to identify the financial distress companies in a certain industry or sector. For example, research done by Alifiah et al. (2013) had included the Altman Z-score model with financial ratios as independent variables in analysing the firms' financial condition in the Malaysian consumer products industry. Khaliq et al. (2014) had suggested the Multi–Discriminant Analysis (MDA) model as the most suitable statistical method in identifying the financial distress among Malaysian Government-Linked Companies (GLC).

Furthermore, Kim-Soon, Mohammed, & Agob (2013) considered Z-score model and liquidity ratio are important instruments in assessing financial issues among 52 Non-PN17 and PN17 companies. Mohammed and Kim-Soon (2012) also suggested that the Altman Z-score model and current ratio are relevant in analysing the financial failure of 44 selected companies in Bursa Malaysia. Additionally, Soon, Mohammed, & Mostafa (2014) evaluated the financial conditions of Malaysian companies in the trading and services sector, and revealed that the Altman Z-score model was still relevant to differentiate companies being between financially good and financially distressed.

The literature suggests that none of the research were performed by employing financial ratios and macroeconomic factors to evaluate the companies' financial condition in the property sector specifically. From the observation on previous researches, we found that there is still a lack of research to evaluate the financial condition and to detect the

financial distress for Malaysian public listed companies involving a specific sector due to the limited data (Aziz & Dar, 2006).

2.2 Corporate Financial Condition

Financial distress and financial failure is a critical issue to deliberate and manage corporate finance as it relates to the company's financial condition; failure to manage could affect the operation and overall performance of a company. Financial distress or financial failure typically refers to a situation where a company experiences financial problems leading to the inability to fulfil its financial commitments towards financiers, suppliers, and employees. From a cash flow perspective, companies are considered to be in financial distress or a financial failure when they have deficit cash flow from operations, investments, and financing activities (Jantadej, 2006).

In the 1960s, the research related to corporate financial failure and bankruptcy had started, and the Beaver (1966) had carried out the first study on the importance of financial information to anticipate bankruptcy. Financial ratios derived from the accounting information are key components for analysing the efficiency and financial position of companies in the financial statement analysis. Kim-Soon et al. (2012) viewed that financial ratios are key variables and factors in financial analysis, as it is used in assessing the performance and evaluating the financial condition of the companies.

Malaysian public listed companies which in financially distressed situations are categorized into PN17 or GN3 by Bursa Malaysia. The management of PN17 and GN3 companies must focus on establishing a mechanism to increase efficiency and utilization of their resources in the turnaround plan submitted to Security Commission (Noor, Iskandar, & Omar, 2012).

There can be several factors influencing the company to fall into financial distress. Most researchers mentioned that the company's unhealthy financial position as the main reasons for bankruptcy among corporates (Abdullah et al., 2014). In addition, the quality of corporate management in a company also has a great influence on the financial performance of the company; a failure in management would lead to financial distress (Noor, Iskandar, & Omar, 2012). As such, analysing and identifying financial distress is critical for a company because it will affect the interest of the board of directors, stakeholders, and investors. Hence, the issues of corporate bankruptcy and financial distress are among popular topics in corporate finance as it has attracted many researchers worldwide to conduct their research intensively by using various methods to analyse and evaluate the corporate financial condition.

Many researchers have applied Altman Z-score model, logic model and probit model in their research to evaluate the companies' financial condition and financial failure. Some researchers in Malaysia preferred to use logic model in their studies to identify financial distress such as the recent studies conducted by Idris (2008), Nur Hafizah (2015), and Liloshna et al. (2017). On the other hand, most researchers had carried out studies related

to the companies' financial condition and financial failure in various sectors, although mostly concentrated only on the PN17 companies.

A research conducted by Khaliq et al. (2014) on 30 Government–Link Companies (GLCs) in Bursa Malaysia from 2008 to 2012 employed the Altman Z-score model and had identified 14 financially distressed companies, while the remaining 16 companies were non-financially distressed. Meanwhile, results from a study by Zainuddin et al. (2018) on the listed technology companies in Malaysia from 2012 until 2016 found three (3) companies in the financially distressed condition, and most of these companies heavily relied on debt financing.

Researchers also have identified that some the financially distressed companies in the Bursa Malaysia are not categorized as PN17 or GN3. This statement was backed by the research performed by Kim-Soon et al. (2013) in evaluating the financial condition and identifying the financial distress among 52 public listed companies. The results showed that PN17 companies are not necessarily in financial distress, whereas some companies categorized as Non-PN17 companies have financial difficulties. In addition, the research performed by Soon et al. (2014) to evaluate 28 listed companies' financial condition in Malaysian trading services sector revealed that some companies in financially distressed condition were placed on the mainboard and not categorized into PN17.

Abdullah et al. (2014) stated that Small and Medium Enterprises (SMEs) in financial pressure would be triggered within four years prior to the financial problem arising.

Therefore, these companies should make prudent financial decisions to mitigate the financial distress condition, and this could further reduce the number of default loans among the SMEs.

A lot of research had been undertaken in identifying the determinants of corporate financial pressure and failure. According to Alifiah et al. (2013), the determinants of financial pressure and failure can be grouped into four categories of financial ratios which are asset management, leverage, liquidity, and profitability. In addition, Zeli (2014) and Ong, Yap, and Khong (2011) also suggested the key element in assessing the probability of failing companies through liquidity, leverage, profitability, and companies' performance. However, this research concentrated on three main categories of financial ratios, namely leverage, profitability, and liquidity.

Meanwhile, there are limited studies in Malaysia employ macroeconomic factors such as base lending rate (BLR), inflation rate and Malaysian housing price index (MHPI) to companies' financial condition. A research done by Mohmad Isa (2004) had considered a few macroeconomic factors, but only gross domestic product (GDP) was found significant to determine the financial distress among Malaysian listed companies. Other previous researches have also found that gross domestic product (GDP) was important to predict the corporate financial distress conducted by Bunn and Redwood (2003). Therefore, this research considered Malaysian macroeconomic factors like gross domestic product (GDP), housing price index (MHPI), interest rate, and inflation rate for the purpose of investigating the significant relationship between macroeconomic factors

and Altman Z-score in evaluating the companies' financial condition in the property sector.

2.3 Leverage

Kazemian et al. (2017) viewed leverage ratio as an important factor in the evaluation of the financial condition since it measures the combination of internal and external financing, and also helps to indicate the proportion of assets that was funded through debts or borrowings. Leverage ratio also analyses the company's financial ability to meet its financial commitments such as interest or principal payment to its creditors (Nur Hafizah, 2015). Companies in capital-intensive sectors typically have a lot of debts and recorded a greater leverage, such as companies in the utilities sector as compared to companies in the technology sector. Retained earnings to total assets (RETA) represent leverage ratio in the Altman Z-score model as the determinants of the financial distress linear combination.

Meanwhile, Alifiah et al. (2013) indicated that debt ratio was significant in identifying the financial pressure among Malaysian consumer product companies. Also, Alifiah (2014) found that debt ratio can be used as an independent variable in assessing the financial condition among Malaysian trading and services companies. She also noted that companies in this sector with high debt ratio tend to have lower possibilities of falling into financial pressure.

Consequently, various researches on the association of corporate financial distress with leverage ratio have been reported and published in the literature. According to Kazemian and Mohd-Sanusi (2015), highly leveraged companies may have higher tendencies for bankruptcy, if they are unable to fulfil their obligations on their borrowings to creditors. Naturally, creditors would perform an analysis to determine the leverage level of a company when the company seeks additional borrowings, and creditors could demand the company to keep its debt under acceptable levels.

This is consistent with Nur Hafizah (2015) in her research on the corporate financial distress related to the Malaysian manufacturing sector from 2001 to 2014, which revealed that a highly leveraged company (based on Total Debt to Total Asset (TDTA) and Current Liabilities to Working Capital (CLWC)) is likely to fall into bankruptcy. Furthermore, Shamser et al. (2001) investigated Malaysian listed companies with the objective to identify determinants of financial failure and they noted that companies' debts level steadily rises as they become closer to bankruptcy. In view of these findings, leverage provides an early indicator of/for financial conditions and the possibility of financial difficulty or failure for companies.

Liloshna et al. (2017), in their research, revealed that leverage ratio based on Total Debt to Total Equity (TDTE) was significant to predict potential financially distressed companies. In addition, a research conducted by Tan (2012), to investigate the association of companies' performance with financial turmoil, had revealed that the low

leverage companies performed better than those with high leverages during financial crisis.

Thim, Choong, and Nee (2011) showed that a company with greater debts or too much leverage would increase its exposure to financial risk, thereby contributed to financial pressure and failure. The result was in tandem with the research done by Abdullah et al. (2014) which evaluated the financial condition of SME's companies in Malaysia, and debt ratio was found to be an important factor in distinguishing the companies' financial condition, either financially healthy or financially distressed. He also found that these companies heavily relied on debts to operate their businesses and made it worst with the dependency on short term liabilities.

Leverage ratio analysis is concentrated on the capital structure used by a company to support its operation and business expansion. Pandey (2002) viewed that the probability of businesses will experience financial difficulties and bankruptcy is related to their capital structure. Because of the higher debt ratio, the businesses will suffer financial difficulties when they are cannot afford to service their financial obligation. A research performed by Khong et al. (2015) with 48 companies on Bursa Malaysia from 2010 to 2014 indicated that debt ratios were found important in assessing the corporate financial turmoil.

Meanwhile, the research by Khaliq et al. (2014) indicated the significant influence of debt ratio towards Altman Z-score; hence, it implied that the amount of borrowings or

loans directly impacted the financial condition of GLCs. They also found that the companies with low debt ratio would not experience financial difficulties, while the companies with a high level of debt had a high possibility of facing financial difficulties.

Furthermore, a research carried out by Kazemian et al. (2017) on 741 listed companies from 2010 to 2015 indicated that debt ratio had a significant negative relation to Altman Z-score. Therefore, the results revealed that a company's risk of falling into financial trouble was greater because of the higher debt level. This concurred proven with the research by Zainuddin et al. (2018) that examine the financial condition of technology companies from 2012 to 2016 and revealed that the three financially distressed companies identified in the research had heavily relied on debt financing.

Previously, Malik (2013) applied financial ratios and Altman Z-score model in analysing the financial trouble of non-financial institutions in Pakistan between 2003 and 2010. The values for leverage had indicated a significant positive association with financial trouble, and thus the highly leveraged companies are extremely likely to file for bankruptcy. Equally, the logistic regression analysis employed by Ong et al. (2011) demonstrated that debt ratio was an important component to predict the financial failure of 105 listed companies in seven different sectors from 2001 to 2007.

2.4 Profitability

Profitability ratio indicates a company's performance in generating profits and return on its investments, as well as the financial condition. This ratio also reflects the effectiveness of a company in optimizing its assets to generate income from operating activities and creating value for shareholders. According to Kazemian et al. (2017), profitability reflects the firm's performance and is one of the main factors for financial stability. Low profitability would lead to financial pressure and failure.

Various methods could be used to evaluate the profitability of a company, for example, earnings before interest (EBIT), net profit margin (NPM), return on assets (ROA), and return on equity (ROE). However, the Altman Z-score model uses earnings before interest and tax to total assets (EBITTA) to measure profitability. Companies have less tendency of falling into bankruptcy if they are able to generate higher profitability.

Interestingly, Altman (1968) found that profitability had a positive significant relationship with financial distress. However, profitability can be considered as the main factor to detect corporate financial distress. Research done by Liloshna et al. (2017) and Nur Hafizah (2015) demonstrated that profitability could significantly affect corporate' financial distress in a positive way. Meanwhile, Salehi and Abedini (2009) had carried out research related to the profitability and evaluation of financial positions of Iranian companies. The research discovered that companies with higher profitability would be in

a good financial condition and have lower financial distress. Thus, it showed a strong negative association between profitability and financial distress.

Geng, Bose, and Chen (2013) performed a study to predict the financial distress for 107 Chinese public listed companies which received 'special treatment' between 2001 and 2008. The findings indicated that profitability is a significant factor that needs to be considered when defining financial distress for companies. As such, they suggested to consider the profitability ratio as the main financial ratio because it is important for assessing the probable companies as financially distressed.

Kazemian et al. (2017) investigated the external monitoring mechanisms influencing corporate financial conditions involving 741 listed companies from 2010 to 2015. The results indicated that companies with a higher net profit margin would have increased Altman Z-score, thereby minimizing the possibility of financial trouble. Geng et al. (2015) observed that if a company has lower profitability, there is a greater risk for financial distress. As such, this ratio provides value as an important indicator to financiers, investors, and regulators to identify a company's level of financial distress.

Meanwhile, research by Campbell et al. (2005) employed dynamic logit model to evaluate the financial distress determinants and the financially distressed stocks' pricing, which revealed that the profitability has an inverse association with financial distress of a company. As such, the lower profitability would escalate the financial pressure, further increasing the possibility of the company falling into bankruptcy.

Research conducted by Thim, Choong, and Nee (2011) on 101 Malaysian public listed companies for the period 2005 to 2009 demonstrated that profitability and corporate financial distress showed an inverse correlation, and the results were in tandem with the pecking order theory. Companies that are able to generate higher profit may tend to use internal funding, instead of debt financing, to support their operations and fund investments. Typically, creditors are willing to offer debt financing at a lower rate to high-profit companies due to their strong credit profile.

The research by Khong et al. (2015) towards 48 Malaysian companies from 2010 to 2014 indicated that the return on equity and return on assets were found important in assessing the company in financial trouble. Meanwhile, Alifiah (2014) involved ten financially distressed and ten non-financially distressed firms in the trading and services sector from 2001 to 2010 in his research. Return on asset (ROA) was found significant and useful to determine the companies' financial condition. The result also revealed that companies with a high ROA have a lesser possibility of facing financial distress than companies with low ROA.

2.5 Liquidity

Numerous research employed liquidity ratio in identifying the determinants of corporate financial distress. The liquidity ratio focuses on evaluating the financial ability of a company in meeting its current financial commitments due in less than a year. The ratio reflects the financial condition of a company to make loans repayment and to service its

debts obligation as well as to analyse the shortage of funds needed to operate its business activities (Nur Hafizah, 2015). It is crucial for financiers or creditors to access the financial capacity of a company in making their loan repayment (Kazemian et al., 2017).

Nur Hafizah (2015) used Working Capital to Total Assets (WCTA) as the independent variable in her research and confirmed that the companies with high level of liquidity have lesser tendency of experiencing financial distress than companies with low liquidity. However, the lower liquidity ratio does not necessarily mean that the companies will risk bankruptcy, but it is an indicator that the companies lack financial competence (Khaliq et al., 2014). Alifiah (2014) also supported that working capital ratio could be considered in examining the financial condition of trading and services sector companies. He remarked that companies with a higher working capital ratio have a lower possibility to fall into financial failure.

Liquidity represented by current ratio and the quick acid test ratio is important to investigate corporate financial failures. The liquidity ratio was found by previous researchers to be an important variable in the determinants of corporate financial distress. This was in line with Khaliq et al. (2014) that showed liquidity as an important determinant to recognize the financial distress among Malaysian GLCs because they found that the liquidity ratio and the Altman Z-score had a significant positive relationship. In other words, the company's financial condition will be greatly influenced by the company's level of liquidity (Kazemian et al., 2017).

Meanwhile, the research by Khong et al. (2015) involved 48 Malaysian public listed companies for a 5-year period (2010 to 2014) to develop the financial prediction model, and the findings showed that quick ratio and current ratio were important in identifying the financial failure of Malaysian listed companies. The findings were supported by a research conducted by Alifiah et al. (2013) which showed that the working capital ratio was found significant in evaluating financial condition as well as identifying the corporate financial distress in Malaysian consumer products industry.

However, few studies have shown that the liquidity ratio was not important and insignificant in evaluating a company's financial condition and predicting its financial distress. Altman (1968) concluded that the liquidity ratio was insignificant in identifying the financial distress of companies in the manufacturing sector. Additionally, Almansour (2015) found that current ratio was insignificant and had an inverse relationship with the risk of bankruptcy. In other words, if the companies have high liquidity, they have lesser tendencies of falling into the bankruptcy zone.

Meanwhile, Kim-Soon et al. (2013) viewed that liquidity is usually associated with financial failure because it reveals the companies' financial capacity, or lack thereof, to fulfil their financial commitments. In view of the possibility of inability to make debt repayment, the low liquidity companies have a greater default risk. Suleiman (2001), in his research, also indicated a positive association between current ratio and financial distress. The companies that have higher current ratio reflected its greater financial capacity in meeting short-term financial commitment and vice versa. However, the

research conducted by Thim, Choong, and Nee (2011) on 101 companies in Bursa Malaysia between 2005 and 2009 revealed that liquidity and financial distress have an inverse relationship. High liquidity companies may liquidate their assets if they encounter a short of funds to fulfil their financial obligations or to finance investments.

2.6 Macroeconomic Factors

Property market development has a significant contribution to economic growth and it provides an important indicator for measuring the health of the economy (Alhashimi & Dwyer, 2004). For instance, a growing property market influences the expansion of the construction, banking, and financial sectors and generates a lot of job opportunities. Mar Iman (2002) viewed that the growth of Malaysian property sector may potentially influence the changes of macroeconomic factors including the real aggregate demand and supply, price of goods, national production, inflation, capital gain, and rental.

Thim, Choong, and Nee (2011) stated that the 1997 Asian financial crisis had a huge impact on the companies' performance. A lot of financially strong companies became financially distressed and some of these firms almost all had wound-up. These companies were unable to meet their debt obligations and other financial commitments because their earnings had dropped drastically and their cash flow had deteriorated badly. Since these companies failed to adapt with the economic downturn, these companies had fallen into financial distress or forced into bankruptcy.

A research done by Rashidah Abdul and Fairuzana Haneem Mohamed (2006) suggested that firms suffered from higher debt level, lack of transparency, weak financial structure and system, disclosure, and accountability during an economic crisis in Malaysia. Most companies in Malaysia have experienced economic downturns as their operations and financial positions have been negatively affected by this crisis.

However, Shiller (2005) and Gallin (2006) investigated the movements in United States' house prices after 2000 using macroeconomic data such as interest rates, income, employment, building costs, and housing cost. They found that the rise in the residential property price in the United States was influenced by people's perception and was not because of the macroeconomic factors.

According to the literature on the property market, most of the house price models are based on macroeconomic factors such as population growth, employment, interest rate, inflation, and income as it is assumed to affect house price changes (Herring, 2006). Most researchers have found a significant relationship between house price and macroeconomic factors like wages, unemployment rate, interest rates, and inflation.

2.6.1 House Price Index in Malaysia (MHPI)

House price index (MHPI) in Malaysia represents the index that uses the hedonic model for the Malaysian housing market. According to the Valuation and Property Service Department, the MHPI accounts for 70 sub-indices assessing the long-term movement in

residential property prices, and it reflects the current situation in the housing sector. According to Yu (2004), this index is capable of recording residential property prices determinants in light of the spatial and structural specification of the housing. Any change in the index reflects the changes in the current value of houses, which also includes other macroeconomic factors.

The Malaysian property industry was greatly impacted in the 1997 Asian financial crisis, MHPI declined by 9.4% in December 1998 and the high-end housing price in Kuala Lumpur dropped by 39% between 1997 and 1999 (Rating Agency of Malaysia, 2007). During the peak years of 1990 to 1996, the collapse of the Malaysian property market was contributed from the excess supply and high vacancy rates, primarily in the Klang Valley, Kuala Lumpur, and Selangor (Talib, 2000).

2.6.2 Gross Domestic Product (GDP)

Gross domestic product (GDP) refers to the total output generated by all resident within a country plus any effective taxes and minus any subsidies that are not included in the value of the products (World Bank, 2012). By using GDP as an income factor, it could help to get an overview of the Malaysia economy condition, including consumption and investment. The higher rate of GDP growth would represent better economic conditions with increased economic growth, and it would have a positive influence on the property market because it causes housing demand to increase due to higher household incomes and higher employment rates.

When the Asian financial crisis happened, the Malaysian economy performance showed the downtrend as GDP growth in 1997 and 1998 were only at -6.1% and -7.5%, respectively, which contributed to a reduction in the aggregate demand of 26.5% (Mohmad Isa, 2004). His research employed macroeconomic factors to identify financially distressed public listed companies and he identified GDP as the only significant variable. Another study that had found GDP significant to determine the financially distressed companies was Bunn & Redwood (2003).

2.6.3 Base Lending Rate (Interest Rate)

The financial and banking sector is one of key driver in the property market as they have engaged directly through mortgage financing. Mortgage market in Malaysia is controlled by commercial banks and financial institutions. Generally, the monthly instalment for a property is determined by the financial ability of a property buyer. This monthly instalment is driven by rate of interest, total loan amount, and duration of the loan. Consumer's purchase decisions on property are sensitive to the interest rate as it could affect the monthly instalment value and overall loan repayment amount.

Central banks have the power to control and manage the base lending rate (BLR) by manipulating the interest rates on bank borrowing and financing. Bank Negara Malaysia manages BLR to control interest rates and to ensure the efficiency of financial market in Malaysia. Rangel and Pillay (2007) explained that interest rate reduction would lead to

lower mortgage payments and increased demand for properties, as more people would qualify and afford mortgages, thus contributing to higher property prices.

A few of the research demonstrated significant relationships between the residential property price and interest rates. Berry and Dalton (2004) categorized the determinants of the residential property industry into three stages; short-term, institutional, and long-term. They found that the demand for investment, interest rates, and current economic conditions had short-term effects on the residential property segment, while the long-term influences were demography, distribution of income, wealth levels, and economic growth.

Meanwhile, Alifiah (2014) used macroeconomic factors and financial ratios in assessing the financial difficulties of trading and services companies. The results revealed that the only significant variable was BLR which could be used as independent variables to examine the financial condition for the trading and services companies. Higher BLRs would influence the financial condition of these companies, which may lead to financial problem.

2.6.4 Inflation Rate

Inflation is characterized as a constant rise in the average price level of products and services, and it is calculated as an annual increase in percentage. Inflation is represented and measured by consumer price index (CPI) as it indicates the average percentage rise in

the cost of products and services which can be adjusted or unchanged at specific intervals, either on a quarterly or annual basis (World Bank, 2011). Inflation rate is a part of the variables used in this study because the price instability or the continuous increase in price is considered as one source of the uncertainties.

The inflation rate also reflects people's expectation and perception regarding future rise in property prices. The appreciation of property prices indicates an inflationary pressure in the economy that could negatively impact property demand. Zhu (2004) perceived property as an investment asset and a good characteristic to hedge against inflation, mainly when returns of investments (ROI) in the financial market is uncertain.

Few of the research had identified the relationship between the inflation rate and the price of Malaysian properties. Zainuddin (2010) conducted a research on the Malaysian property market and proved that the inflation rate and the price of Malaysian properties have a strong correlation in the long term. Meanwhile, to identify macroeconomic factors that influence the price of Malaysian properties, Tze (2013) used the Consumer Price Index (CPI) as part of the variables in the research and the findings revealed that CPI has no significant correlation with property prices.

Overall, there was still a lack of research and journals on the impact of macroeconomic factors on the financial condition of public listed companies in the property sector. The reason may be due to the researchers' lack of attention to changes in the financial conditions of property companies caused by changes in macroeconomic factors.

2.7 Chapter Summary

Altman Z-score model is a popular method and commonly used by many researchers to evaluate the financial condition and to detect the financial distress as well as to predict bankruptcy of companies. Based on the literature, none of the research was found to analyse the financial condition of companies in the property sector. Meanwhile, studies were found to provide different results in terms of the relationship of leverage, profitability and liquidity ratio, and Altman Z-score to assess the financial condition of Malaysian companies in various sectors. Furthermore, previous studies indicated that the gross domestic product (GDP), interest rate, and inflation rate are key economic factors that influenced the price of properties in Malaysia. However, there was no study on how macroeconomic factors would affect the financial condition of companies, particularly for the listed property companies.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter outlines the methodology employed to conduct the analysis to attain the objective of this research. Quantitative research methods were applied where the main sources of secondary data were the property companies' financial information extracted from the financial statements of the company that were available on the Bursa Malaysia's website. Other data such as macroeconomic factors were gathered from the Malaysian Department of Statistics' website. The rest of this chapter elaborates on the Research Design, Population and Sampling Design, Data Collection Procedure, and Data Analysis employed in this research.

3.1 Research Framework

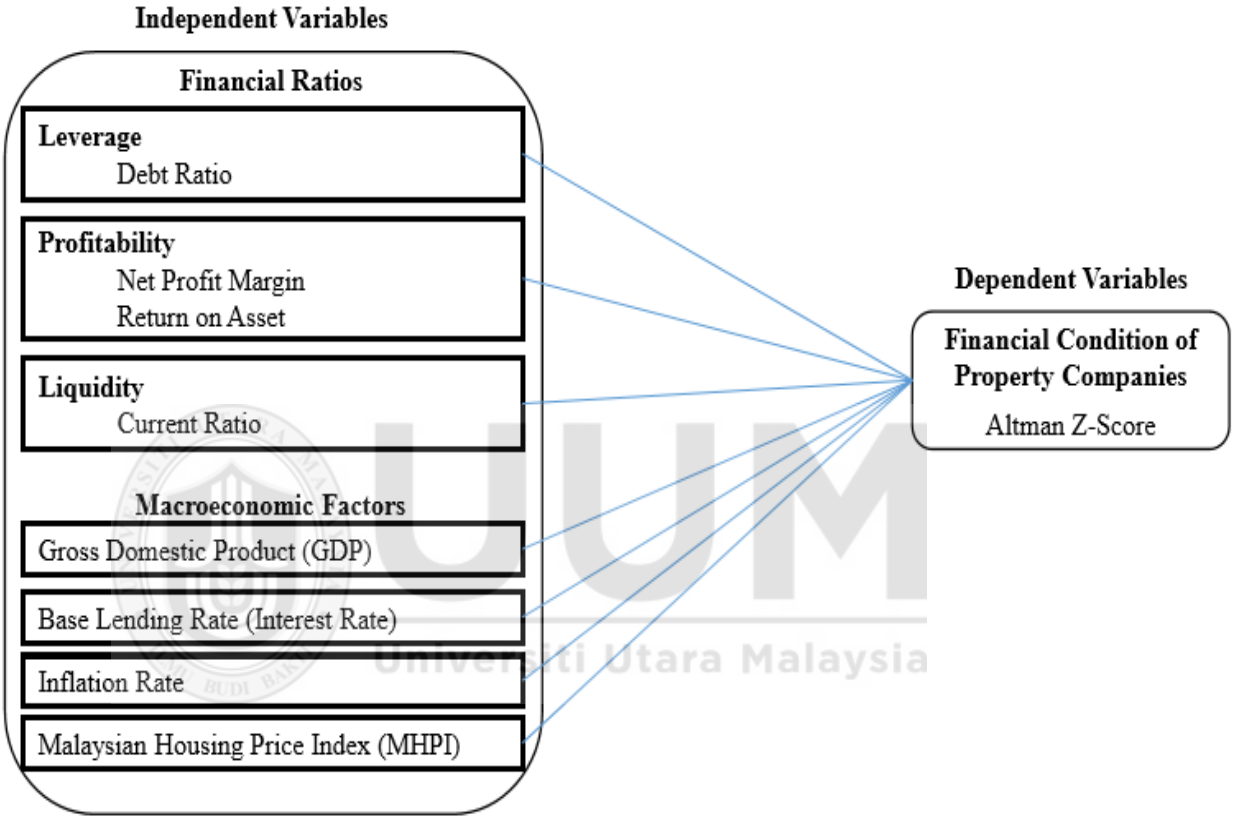
Altman Z-score is a model that has been widely used by many researchers to evaluate the financial condition and to examine the financial distress as well as to predict bankruptcy of companies. This model was developed by Altman (1968) and it consists of five financial ratios which are working capital divided by total asset, retained earnings divided by total assets, EBIT divided by total assets, the market value of equity divided by total liabilities, and sales divided by total assets.

Alifiah (2014), in his research, had used the Altman Z-score in predicting the financially distressed companies in the Malaysian trading and services sector using macroeconomic factors. The research had used financial ratios (debt ratio, total asset turnover ratio, current ratio, quick ratio, working capital ratio, and net income to total assets ratio) and macroeconomic factors (base lending rate (BLR), gross domestic product (GDP), Consumer Price Index (CPI), and Kuala Lumpur Composite Index (KLCI)) as independent variables.

For the purpose of this research, we have replicated the study done by Alifiah (2014) and replace some of the financial ratios that were found to be valuable, based on the previous research, as well as used macroeconomic factors which were relevant to the Malaysian property sector. Therefore, the dependent variable in this study was the level of the financial condition of the listed property companies measured by Altman Z-scores. Meanwhile, the independent variables comprised of the financial ratios represented by debt ratio, net profit margin, return on assets, and current ratio, and macroeconomic

factors represented by gross domestic product (GDP), base lending rate (interest rate), inflation rate, and Malaysian housing price index (MHPI).

Figure 3.1
Research Framework



3.1.1 Dependent Variable

By employing the Altman Z-Score model, this research evaluated the financial condition of listed companies in the property sector, and determine whether the companies were in a financially healthy position or in financial distress. Studies done by Alifiah et al. (2013), Kim-Soon et al. (2013), Khaliq et al. (2014), Alifiah (2014), and Kazemian et al. (2017) had utilized Altman Z-score as the dependent variable in evaluating the financial

condition and assessing potentially financial-distressed companies in their respective studies.

3.1.2 Independent Variables

This research employed eight independent variables consisting of four financial ratios and four macroeconomic factors. The variables were chosen based on their efficiency to predict financial failure or bankruptcy of companies in several previous studies (Altman, 1968; Beaver, 1966).

Therefore, in this research we have chosen financial ratios comprising of debt ratio, net profit margin, return on assets, and current ratio, whereas gross domestic product (GDP), base lending rate (interest rate), inflation rate and Malaysian housing price index (MHPI) represented the macroeconomic factors.

3.2 Hypotheses Development

There were four (4) hypotheses developed for this study:

3.2.1 Leverage Ratio

H1: There is a significant relationship between the leverage ratio and Altman Z-score to evaluate the financial condition of property companies.

3.2.2 Profitability Ratio

H2: There is a significant relationship between the profitability ratio and Altman Z-score to evaluate the financial condition of property companies.

3.2.3 Liquidity Ratio

H3: There is a significant relationship between the liquidity ratio and Altman Z-score to evaluate the financial condition of property companies.

3.2.4 Macroeconomic Factors

H4: There is a significant relationship between macroeconomic factors, namely gross domestic product (GDP), base lending rate (BLR), inflation rate, and Malaysian housing price index (MHPI) with Altman Z-score to evaluate the financial condition of property companies.

3.3 Research Design

Research design commonly refers to the conceptual framework that a researcher suggests to perform in a research (Liloshna et al., 2017). In view of the slowdown and overhang situation in the Malaysian property market, the objective of this research was to evaluate the financial condition of property companies, either in financial distress or in a good financial position, between 2014 and 2018.

This research is a correlational study that aimed to investigate the strong correlation between financial ratios and macroeconomic factors with the financial condition of Malaysian public listed property companies as indicated by Altman Z-score. Through the

Statistical Package for Social Science (SPSS), all data representing dependent variable and independent variables were analysed for descriptive analysis, correlation, and regression analysis.

3.4 Sampling Design

The main objective of this research was to evaluate the financial condition of listed companies in the property sector within the given period (2014–2018). Hence, the population refers to all property companies in Bursa Malaysia. As of 31 December 2019, the total listed property companies was 97. These companies are actively engaging property development in Malaysia and abroad in either residential, office space, or retail property.

Each public listed property company has different market capitalization, and the large capitalized property companies are typically engaged in the construction of a 500-acre and above residential township (Hwa, 2002). The townships are normally comprised of the development of various designs and property types such as residential or commercial property with the range price from low- to high-cost property. The abundances of property development for the listed property companies are concentrated in main urban areas like Klang Valley, Penang, Johor Bahru, and Putrajaya.

Market capitalization is measured by the total value of a company's outstanding shares as derived by the stock market such as Bursa Malaysia, and is computed by multiplying the

total number of a company's outstanding shares with its current stock price. Many investors perceive market capitalization as a significant indicator and widely use it to assess the company's size and its business as well as other attributes, including risks. Random Sampling approach was employed in this research to identify and organise the property companies that were selected as the research sample.

With this sampling technique, we have determined the criterion for selecting the property companies to be included in the sampling as companies that have the audited report ending in December. It is important to obtain a homogeneous sample and reduces bias, which would help to produce more reliable results. As such, there are 45 property companies that were identified within the given period of 2014–2018, and all these companies have been chosen to be the sample of this study.

Table 3.1
Description of Market Capitalization Category and Sample Selection

Market Category	Market Capitalization	No. of Property Companies with FYE Dec
Small Capitalization	Less than RM500 million	28
Mid-Capitalization	More than RM500 million and less than RM1.0 billion	7
Big Capitalization	More than RM1.0 billion	10
	Total	**45**

This research also conducted a hypothesis testing analysis to identify the significant relationships between the financial ratios and macroeconomic factors in evaluating the financial condition of companies in the property sector measured by Altman Z-score. The current research framework included eight (8) variables, which may have a significant

relationship to analyse the financial condition of listed property companies (hypothesis testing), and all of these selected variables have been used in previous researches. The explanation on the calculation of financial ratios and macroeconomic factors according to some specific methods are as follows:

Table 3.2
Description of the Independent Variables

VARIABLES	MEASUREMENT	SOURCE
Leverage	Proxy: Debt Ratio $= \frac{\text{Total Liabilities}}{\text{Total Asset}}$	Nur Hafizah (2015), Idris (2008), Khaliq et al. (2014)
Profitability	Proxy: Net Profit Margin $= \frac{\text{Net Profit}}{\text{Revenue}}$	Becchetti and Sierra (2003), Khurshid (2013)
	Proxy: Return on Asset $= \frac{\text{Net Profit}}{\text{Total Asset}}$	Nur Hafizah (2015), Idris (2008)
Liquidity	Proxy: Current Ratio $= \frac{\text{Current Asset}}{\text{Current Liabilities}}$	Nur Hafizah (2015), Idris (2008), Zmijewski (1984), Liloshna et al. (2017), Rizwan Khurshid (2013), Alifiah (2014)
Macroeconomic Factors	Proxy: Gross Domestic Product (GDP) Rate	Mohmad Isa (2004)
	Proxy: Base Lending Rate / Interest Rate	Alifiah (2014)
	Proxy: Inflation Rate	Alifiah (2014)
	Proxy: Malaysian Housing Price Index	Zainuddin (2010)

Data were analysed using descriptive statistics, correlation, and regression analysis in the Statistical Package for Social Science (SPSS) software.

3.5 Data Collection Procedure

This research concentrated on the listed companies in the Malaysian property sector, and the data only covers the companies with a financial statement ending in December. A list of the companies selected for this study is in **Table 3.3**. This research employed the secondary data as the property companies' financial information was obtained and available at Bursa Malaysia Marketplace Database for the five-year period between 2014 and 2018. The financial information was derived from the statement of income and financial position as well as other relevant information on the company itself. Meanwhile, the information on macroeconomic factors are gathered from the relevant authority official websites, books, the research articles, and financial reports and analysis related to the property companies listed in Bursa Malaysia.

Data gathered from the secondary source are very important and useful to calculate and assess the financial condition of property companies. The selected independent variables in this research, namely leverage, profitability, liquidity ratios, gross domestic product, base lending rate, interest rate, inflation rate, and Malaysian housing price index, are very important to determine the relationship between Malaysian economic environments with the financial condition of property companies.

Table 3.3
List of Property Companies Selected as Sample in This Study

No.	Company	Market Capitalization (RM)	Market Category
1	AMVERTON BERHAD	408.87 million	Small
2	ARK RESOURCES HOLDINGS BERHAD	13.14 million	Small
3	AYER HOLDINGS BERHAD	299.41 million	Small
4	BINA DARULAMAN BERHAD	103.31 million	Small
5	BERTAM ALLIANCE BERHAD	38.25 million	Small
6	COUNTRY HEIGHTS HOLDINGS BHD	380.48 million	Small
7	DAMANSARA REALTY BHD	128.94 million	Small
8	ENCORP BERHAD	88.88 million	Small
9	EWEIN BERHAD	194.52 million	Small
10	FARLIM GROUP (MALAYSIA) BHD	57.25 million	Small
11	GROMUTUAL BERHAD	95.78 million	Small
12	HCK CAPITAL GROUP BERHAD	520.57 million	Mid
13	I-BERHAD	299.36 million	Small
14	IBRACO BERHAD	265.58 million	Small
15	IGB BERHAD	1.925 billion	Big
16	ISKANDAR WATERFRONT CITY BERHAD	778.77 million	Mid
17	KEN HOLDINGS BERHAD	111.20 million	Small
18	KSL HOLDINGS BERHAD	804.07 million	Mid
19	LBI CAPITAL BERHAD	65.49 million	Small
20	LBS BINA GROUP BERHAD	775.72 million	Mid
21	LIEN HOE CORPORATION BERHAD	90.44 million	Small
22	MAGNA PRIMA BERHAD	313.14 million	Small
23	MAH SING GROUP BERHAD	1.930 billion	Big
24	MB WORLD GROUP BERHAD	251.80 million	Small
25	MERIDIAN BERHAD	34.04 million	Small
26	MAJUPERAK HOLDINGS BERHAD	53.98 million	Small
27	MALAYSIAN RESOURCES CORPORATION BERHAD	3.309 billion	Big
28	NAIM HOLDINGS BERHAD	518.94 million	Mid
29	OSK HOLDINGS BERHAD	2.001 billion	Big
30	PARAMOUNT CORPORATION BERHAD	800.82 million	Mid
31	PASDEC HOLDINGS BERHAD	144.13 million	Small
32	PEGASUS HEIGHTS BERHAD	71.96 million	Small
33	RAPID SYNERGY BERHAD	639.24 million	Mid
34	SOUTH MALAYSIA INDUSTRIES BERHAD	28.34 million	Small
35	S P SETIA BERHAD	5.457 billion	Big
36	TADMAX RESOURCES BERHAD	215.53 million	Small

Table 3.3 (Continued)

No.	Company	Market Capitalization (RM)	Market Category
37	TA GLOBAL BERHAD	1.224 billion	Big
38	TAMBUN INDAH LAND BERHAD	322.92 million	Small
39	THRIVEN GLOBAL BERHAD	101.18 million	Small
40	TROPICANA CORPORATION BERHAD	1.213 billion	Big
41	UEM SUNRISE BERHAD	3.085 billion	Big
42	UOA DEVELOPMENT BHD	3.915 billion	Big
43	WMG HOLDINGS BERHAD	34.09 million	Small
44	Y&G CORPORATION BHD	169.48 million	Small
45	YNH PROPERTY BERHAD	1.312 billion	Big

Note: Market Capitalization as at 14 October 2019

3.6 Data Analysis Technique

3.6.1 Altman Z-Score Model

To evaluate the financial condition of listed companies in the property sector, this research employed the Altman Z-score model based on the data gathered from those companies' statement of income and balance sheet. The model would be beneficial to the management of companies in assessing the financial soundness and anticipating the likelihood of financial problems; if left unchecked, could further deteriorate their financial position and contribute to bankruptcy. The model comprised of five financial ratios, namely profitability, leverage, liquidity, solvency, and efficiency ratios that are combined into one score. The linear equation of the Altman Z-score (for the non-manufacturing and emerging companies) employed in this research is as follows:

Z = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4

Where:

X1 = Working Capital / Total Assets

X2 = Retained Earnings / Total assets

X3 = Earnings before Interest and Taxes / Total Assets

X4 = Book Value of Equity / Total Liabilities

The descriptions of the categories of the Z-score model output in this research are as follows:

Table 3.4
Description of Z-score Output

Range of Z-score	Interpretation	Financial Condition
Above than 2.99	Company in good position and safe from financial trouble	Good
Between 2.99 and 1.81	Warning Sign! It is considered in a grey area as the company have the risk of bankruptcy.	Good
Less than 1.81	Bad Signal! The company have a greater possibility to fall into bankruptcy. Corrective actions are required to prevent the situation from worsening.	Financial Distress

3.6.2 Linear Regression Model

To analyse the significant relationship between financial ratios and macroeconomic factors with the financial condition of property companies that were derived from the Z-score, the research employed the Statistical Package for the Social Sciences (SPSS)

software to perform a regression analysis to address the research questions and meet the first/second/third objective of this research. As such, this research employed the regression equation as follows:

$$Z_i = B_0 + B_1DR_{i,t} + B_2NPM_{i,t} + B_3ROA_{i,t} + B_4CR_{i,t} + B_5GDP_{i,t} + B_6BLR_{i,t} + B_7InfR_{i,t} + B_8MHPI_{i,t} + E_{i,t}$$

Where:

Z_i = Altman Z-score of property company i at year t

$DR_{i,t}$ = Debt ratio of company i at year t

$NPM_{i,t}$ = Net profit margin of company i at year t

$ROA_{i,t}$ = Return on asset of company i at year t

$CR_{i,t}$ = Current ratio of company i at year t

$GDP_{i,t}$ = Malaysian gross domestic product rate at year t

$BLR_{i,t}$ = Malaysian base lending rate at year t

$InfR_{i,t}$ = Malaysian inflation rate at year t

$MHPI_{i,t}$= Malaysian housing price index at year t

$E_{i,t}$ = Error Term

3.7 Chapter Summary

Overall, this chapter is essential as it provides the basis for the following chapters. It explains in depth the methodology of conducting this research from the population and sampling design to the data collection process and analysis. The chapter also used the theoretical framework to describe and provide a clear explanation on the dependent

variable and independent variables as well as for the development of hypothesis and the method to analyse the data. The output from the data, models and analysis highlighted in this chapter are discussed in the next chapter.

CHAPTER FOUR

RESULTS AND FINDINGS

4.0 Introduction

This chapter discusses the analysis and findings of the research. The beginning of this chapter explains the findings related to the financial condition of property companies by applying the Altman Z-score model. It also outlines the descriptive statistics of the dependent variable and independent variables included in this research, such as Altman Z-score of property companies, financial ratios, and macroeconomic factors.

Next, Pearson's correlation analysis was performed to explain the details on the statistical correlation of variables used in this research, in terms of strength and direction. The last section of this chapter, regression analysis was applied to investigate the significant relationship between the independent variables comprising financial ratios (debt ratio (DR), net profit margin (NPM), return on asset (ROA), and current ratio (CR)) and macroeconomic factors, namely gross domestic product (GDP), base lending rate (BLR), inflation rate (IR) and Malaysian Housing Price Index (MHPI) with the dependent variable (Altman Z-score) to evaluate the financial condition of listed companies in the property sector.

4.1 Financial Condition of Listed Companies in the Property Sector

Financial data of the property companies collected from the statement of income and balance sheet are included in the Altman Z-score model in evaluating those companies' financial condition. Most of the previous research concentrated on predicting financial distress or failure only, but this research focused on evaluating the financial condition for 45 property companies.

The 45 property companies out of 97 property companies listed in Bursa Malaysia as at 31 December 2019 were selected according to the determined criterion, and these companies have different market capitalizations. The Altman Z-score model was employed to measure the companies' financial condition, and the results are tabulated as below.

Table 4.1
Altman's Z-score Model Analysis

Year	2018	2017	2016	2015	2014
Companies in good position	36	35	36	35	31
Companies in financial distress	9	10	9	10	14

Table 4.2
Financial Condition of Property Companies based on Altman Z–score

Financial Condition	Company Size	Financial Year Ended Dec				
		2018	**2017**	**2016**	**2015**	**2014**
Good Position	Small Capitalization	24	22	23	23	18
	Mid-Capitalization	5	5	6	6	6
	Large-Capitalization	7	8	7	6	7
	Total Companies	**36**	**35**	**36**	**35**	**31**
Financial Distress	Small Capitalization	4	6	5	5	10
	Mid-Capitalization	2	2	1	1	1
	Large-Capitalization	3	2	3	4	3
	Total Companies	**9**	**10**	**9**	**10**	**14**

The Altman Z-score for property companies from 2014 to 2018 are shown in Table 4.1 and Table 4.2 above. The tables demonstrate that the highest numbers of property companies in financial distress were recorded in 2014, and the number has dropped slightly and relatively stable for the period between 2015 and 2018. As the results showed that most of the financially distressed property companies had small capitalization, it was induced that property companies with small market capitalization have a higher tendency to experience financial distress. These small market capitalized companies usually have limited financial capability to operate their businesses because they are small companies.

There also were few property companies with medium and large market capitalizations categorized under financial distress within the given period. Although some properties companies were not categorized under financially distressed or recorded the score

between 2.99 and 1.81 in the given period, these companies are considered in the grey area and have the probability of experiencing financial pressure in the future.

From Table 4.1 and Table 4.2, it also shows that the actual financial conditions among the property companies listed in Bursa Malaysia were not in great condition. Although these companies have been listed in Bursa Malaysia, it does not reflect the companies' financial soundness and their actual financial condition. Hence, the results of this research succeeded to answer the first research question with supporting evidence and meet our research objective as the results indicated that there were financially distressed property companies listed in Bursa Malaysia for the financial period of 2014 to 2018.

4.2 Descriptive Statistics

Descriptive statistics demonstrate the basic information about the data characteristics. The objective of these statistics is to summarize the collection of data, instead of to test the hypotheses. Table 4.3 shows the descriptive results of the variables used in this research.

Table 4.3
Descriptive Statistics

Variables	Mean	Standard Deviation
Altman Z-Score	4.624328	4.704903
Debt Ratio (DR)	0.407546	0.176280
Net Profit Margin (NPM)	-0.006245	1.782606
Return on Assets (ROA)	0.0252267	0.068518
Current Ratio (CR)	2.843372	3.722263
Gross Domestic Product (GDP)	0.051800	0.005993
Base Lending Rate (BLR)	0.031500	0.001227
Inflation Rate (IR)	0.02420	0.009601
Malaysian Housing Price Index (MHPI)	1.750400	0.148580

Table 4.3 presents the descriptive statistics for each of the dependent and independent variables in this research. The dependent variable Altman Z-score indicates the financial condition of the listed property companies, while the independent variables were current ratio (CR), debt ratio (DR), net profit margin (NPM), return on assets (ROA), gross domestic product (GDP), base lending rate (BLR), inflation rate (IR), and Malaysian housing price index (MHPI). The results demonstrated that the financial condition of the listed property companies measured through Altman Z-score had a mean ratio of 4.624328 which suggested that generally, the property companies in Bursa Malaysia were financially sound.

To assess the leverage level of property companies, debt ratio (DR) gave a mean of 0.407546 demonstrating that on average the level of debt for the listed property companies at 40.75% out of total assets and the companies could utilize their assets to

pay their liabilities. Meanwhile, the property companies' profitability represented by net profit margin and return on assets in this research recorded ratio means of -0.006245 and 0.0252267, respectively. These results suggested that the listed property companies, on average, recorded a minimal 0.62% net loss margin and lower return on assets of 2.52% for the period from 2014 to 2018.

The liquidity of the listed property companies in this research was measured by CR that gave an average score of 2.843372 which indicated that the listed property companies have an average current asset of RM2.84 to cover every ringgit of their short-term liabilities over the 5-year study period.

The Malaysian BLR and IR for the periods of 2014 to 2018 did not indicate major dispersion. On average, BLR was stated at 0.031500 or 3.15%, while IR at 0.02420 or 2.42%. Meanwhile, Malaysian housing price index (MHPI) on average was at 1.750400, and there was no significant dispersion on MHPI for the period of 5 years as the results reflected the current Malaysian property market situation, given that the housing price has steadily increased over the years. Similar to MHPI, there was no significant dispersion on GDP and the average rate of GDP was at 0.051800 or 5.18% during the period of this research.

4.3 Correlation Analysis

The correlation analysis demonstrated the relationship between the variables used in the research, in which a higher correlation reflects a higher level of relationship or connection between the variable, while a lower correlation indicates a lower level of relationship. This analysis was also used to give details on the strength and direction of the relationship between the variables used in this research. Pearson's Correlation Analysis was used to describe the relationship (Neyman & Pearson, 1938). The relationships needed to be in the in the range of −1.00 to 1.00 and were categorized into three groups.

Table 4.4
Correlation Analysis

Variables	Z-Score	DR	NPM	ROA	CR	GDP	BLR	IR	MHPI
Z-score	**1.000**	-0.674***	0.016	-0.031	0.897***	-0.030	-0.005	-0.033	0.020
DR		**1.000**	0.019	-0.062	-0.4944***	0.019	-0.009	0.033	-0.049
NPM			**1.000**	0.324***	-0.037	0.084	-0.028	0.118	-0.132
ROA				**1.000**	-0.253***	0.106	0.018	0.099	-0.099
CR					**1.000**	-0.032	-0.011	-0.022	-0.020
GDP						**1.000**	0.178	0.779***	-0.459***
BLR							**1.000**	-0.452***	-0.375***
IR								**1.000**	-0.297***
MHPI									**1.000**

*** Correlation is significant at the 0.01 level

Pearson correlation matrix of independent variables with the Altman Z-score was performed in this research to evaluate the financial condition of listed companies in the property sector. Table 4.4 demonstrates the findings of the correlation coefficient analysis between the Altman Z-score (dependent variable) and the financial ratios and macroeconomic factors (independent variables, i.e. DR, NPM, ROA, CR, GDP, BLR, IR, and MHPI).

The Altman Z-score showed positive correlations with NPM, CR, and MHPI, whereas its correlations with DR, ROA, GDP, BLR, and IR were negative. The Altman Z-score correlation with DR and CR were also found to be significant, although the macroeconomic factors were not found to significantly correlated.

The Altman Z-score correlation with CR demonstrates a strong positively significant correlation, indicating that the rise in current ratio would improve the financial condition of property companies, while DR showed a significantly negative relationship of 0.674, thus indicating an increase in debt ratio would causing a decline in the financial condition of property companies.

The results also indicated a strong negative correlation of 0.494 between DR and CR, which explains the property company with a higher leverage or debt would have lower liquid assets. Next, this analysis found that NPM and ROA had a strong positive correlation of 0.324, which means a property company with a higher NPM will influence a higher ROA. Meanwhile, ROA showed a significantly negative correlation with CR of

0.253, indicating that the property company with higher return on asset will have lower current ratio.

This analysis also revealed that there was no significant correlation between financial ratios and macroeconomic factors, which means that the financial ratios of property company were not influenced by Malaysian macroeconomic factors. Therefore, we can conclude that only two independent variables, current ratio and debt ratio, had significant correlations or relationship with the financial condition as measured by the Altman Z-score for property companies listed in Bursa Malaysia.

4.4 Linear Regression Analysis

Table 4.5 indicates the findings of the regression analysis by using the financial conditions of property companies as measured by Altman Z-score as the dependent variable. Linear regression by Enter method was used to analyse all dependent variables and independent variables in this research.

Table 4.5
Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
0.948	0.899[a]	0.895	1.522093193	0.899	240.533	8	216	0.000

a. Predictors: (Constant), MHPI, CR, NPM, IR, ROA, DR, BLR, GDP.

The adjusted R squared for this research is 0.895, suggesting that 89.5% of the variations in the financial conditions of property companies calculated by Altman Z-score were explained by MHPI, CR, NPM, IR, ROA, DR, BLR, and GDP. The remaining 10.5% of the variations in the financial conditions of property companies may be described by other factors not included in this research.

Table 4.6 demonstrates the findings of linear regression analysis in identifying the significant relationship of the financial conditions of property companies with independent variables consisting of financial ratios and macroeconomic factors.

Table 4.6
Linear Regression Results

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	B		
C	14.011	13.363		1.049	.296
DR	-6.975	.687	-.261	-10.159	.000***
NPM	.017	.061	.007	.284	.777
ROA	11.088	1.679	.161	6.604	.000***
CR	1.022	.034	.809	30.447	.000***
GDP	137.419	122.864	.175	1.118	.265
BLR	-474.794	486.305	-.124	-.976	.330
IR	-103.812	92.603	-.212	-1.121	.264
MHPI	.354	1.303	.011	.271	.786

Dependent Variable: The level of financial condition of property companies measured by Altman Z-score.

Note: P-value in parentheses *, **, and *** indicates the significance level at 10%, 5%, and 1%, respectively.

The linear regression results showed that three independent variables were statistically significant at $p \leq 0.01$. Thus, this result revealed that the financial ratios, namely DR, ROA, and CR, had statistically strong associations with the property companies' financial condition. Thus, the findings supported Hypothesis 1 (H1) and Hypothesis 3 (H3), while partially supported Hypothesis 2 (H2) due to NPM of property companies was found to be not statistically important to evaluate the financial condition of property companies.

It was also observed that no macroeconomic factors were statistically significant to influence the Altman Z-score, thus suggesting that the macroeconomic factors did not influence the financial conditions of property companies and this outcome fails to support the Hypothesis 4 (H4). The results also indicated that DR was negatively associated with Altman Z-score, whereas the ROA and CR were positively associated with the Altman Z-score.

Hypothesis 1: Accepted (Leverage Ratio)

The first hypothesis assumed that there is a significant relationship between the leverage ratio and Altman Z-score to evaluate the financial condition of companies in the property sector. As shown in Table 4.5, the results from the regression analysis found a significant negative relationship between debt ratio and the property companies' financial condition as indicated by Altman Z-score. Thus, the results implied that greater leverage could reduce the Altman Z-score and further raise the risk of the property company falling into financial trouble.

In addition, this regression result also supports the first hypothesis (H1) and it suggests that leverage ratio, as represented by debt ratio, is an important indicator in evaluating the property companies' financial condition. This finding was consistent with the previous research conducted by Shamser et al. (2001), Ong et al. (2011), Thim, Choong, and Nee (2011), Malik (2013), Khaliq et al. (2014), Alifiah (2014), Bhattacharjee and Han (2014), Khong et al. (2015), Kazemian et al. (2017), and Liloshna et al. (2017).

To identify the characteristics of the financial failure of Malaysian listed companies, a research undertaken by Shamser et al. (2001) indicated that a company's leverage level gradually increases as it approaches bankruptcy. Meanwhile, Kazemian et al. (2017) indicated that debt ratio and Altman Z-score had a significantly negative relationship when investigating 741 listed companies from 2010 until 2015.

Furthermore, the research carried out by Khong et al. (2015) with 48 listed companies over a five-year period (2010 to 2014) revealed that debt ratio was significant and an important factor to consider for predicting corporate financial failure. The results were also consistent with the research conducted by Khaliq et al. (2014) on 30 listed GLCs between 2008 and 2012, which showed that debt ratio and Altman Z-Score had a significant relationship as it reflected that the amount of funds borrowed directly influenced the financially distressed of GLCs.

By using logistic regression, the research carried out by Abdullah et al. (2014) revealed that the only significant variable in identifying the financial distress of Malaysian SMEs was debt ratio. Additionally, Liloshna et al. (2017) and Nur Hafizah (2015) in their

research have highlighted that the higher leverage would lead to a greater risk of bankruptcy.

Hypothesis 2: Not Accepted (Net Profit Margin)

Accepted (Return on Assets)

The second hypothesis predicted there is a significant relationship between the profitability ratio and Altman Z-score to evaluate the financial condition of companies in the property sector. The independent variables used to represent profitability ratio were net profit margin (NPM) and return on assets (ROA). As presented in Table 4.6, a positive relationship was shown between NPM and Altman Z-score., This was in line with the results of Kazemian et al. (2017) and Liloshna et al. (2017) as both studies proved that the rise in NPM would increase the Altman Z-score, thereby decreasing the risk of financial difficulties and companies defaulting.

However, the result of this research also revealed that NPM and Altman Z-score had an insignificant relationship, thus suggesting that NPM was not perceived as a key component in assessing the financial condition as well as indicating financial distress for the listed property companies. Therefore, this outcome rejected Hypothesis 2 (H2). This results contradicted with the previous research by Kazemian et al. (2017) across 741 Malaysian public listed companies between 2010 and 2015, which asserted that the Altman Z-score had a significant association with net profit margin.

Additionally, in Table 4.6, ROA indicated a positive relationship with the Altman Z-score of property companies. This was similar with the results of Jaafar, Muhamat, Alwi, Karim, and Rahman (2018) which involved 18 PN17 companies between 2009 to 2016 and Nur Hafizah (2015) on the public listed manufacturing companies between 2001 and 2014. Both studies have found ROA to be positively associated with the Altman Z-score.

The relationship was also statistically significant ($p \leq 0.01$), thus reflecting the importance of ROA to identify the financial condition of property companies. This finding correlates with the studies of Idris (2008), Alifiah (2014), Geng, Bose, and Chen (2013), Khong et al. (2015), Nur Hafizah (2015), and Liloshna et al. (2017).

The research by Alifiah (2014) revealed that ROA was important to detect financial pressure of trading and services sector companies from 2001 to 2010, while Khong et al. (2015) in their research with 48 Malaysian public listed companies between 2010 and 2014 indicated that ROA was found significant to assess the corporate financial failure.

In addition, the results from Geng, Bose, and Chen (2013) showed that the profitability ratio is deemed as an important factor in the evaluation of a company's financial condition. Other research conducted by Salehi and Abedini (2009) among the public listed companies in Iran revealed that companies' profitability did have a significant inverse relationship in predicting financial distress. The company with lower profitability would have increased financial pressure as the Altman Z-score drops and increased the company's risk for bankruptcy. Therefore, the results supported Hypothesis 2 (H2).

Hypothesis 3: Accepted (Current Ratio)

The third hypothesis assumed that there is a significant relationship between the liquidity ratio and Altman Z-score to evaluate the financial condition of companies in the property sector. Khaliq et al. (2014) suggested that liquidity is a key determinant in assessing the financial pressure of listed government-linked companies (GLCs) and was supported by Kazemian et al. (2017) that the company's financial condition will greatly be influenced by the company's liquidity level.

The results in Table 4.6 supported Hypothesis 3 (H3) as the current ratio showed a significantly positive relationship with the financial conditions of properties companies, as indicated by the Altman Z-score. Companies with a higher current ratio have a higher Altman Z-score, hence lowering the risk of financial distress. Conversely, companies with lower liquidity have a greater risk of financial trouble.

Previous research also proved that the company's liquidity was significant and associated positively with Altman Z-score as illustrated by Khaliq et al. (2014) who found a strong association between current ratio and Altman Z-score when evaluating the financial pressure of listed GLCs. Further, the regression analysis from the research conducted by Kazemian et al. (2017) suggested that the current ratio had a significant positive influence on Altman Z-score to assess the financial conditions of listed companies between 2010 and 2014.

Khong et al. (2015) provided similar results in a research on 48 Malaysian public listed companies over the period 2010 to 2014, as current ratio was found to be significant to analyse the company's financial condition. The findings were also consistent with the results from Almansour (2015) and Thim, Choong, and Nee (2011) which indicated that liquidity has a negative association with financial pressure. Furthermore, it proved that high liquidity companies would have a lower tendency to fall into the bankruptcy zone. Besides, the study carried out by Idris (2008) also indicated that the company's liquidity is important to evaluate whether the financial condition of the company is either in financial distress or is financially good. The liquidity ratios found to be significant were working capital to total asset (WCTA), cash to total asset (CashTA), and current asset to total asset (CATA), while current ratio was found to be insignificant.

However, the outcome of this study contradicted with the research done by Jaafar, Muhamat, Alwi, Karim, and Rahman (2018) which demonstrated liquidity to be negatively associated with Altman Z-score and not an important determinant to examine the corporate financial distress among Practice Note 17 (PN17) companies. This was supported by Altman (1968) and Almansour (2015) which revealed that liquidity ratio was not an important ratio and insignificant in evaluating the corporate financial distress in the manufacturing sector.

Hypothesis 4: Rejected (Macroeconomic Factors)

The last hypothesis of this paper claimed that there is a significant relationship between macroeconomic factors with Altman Z-score to evaluate the financial conditions of companies in the property sector. This research revealed that none of the macroeconomic factors was found significant to the Altman Z-score. Thus, it was deduced that the macroeconomic factors employed in this research, such as GDP, BLR, IR, and MHPI, did not significantly influence the financial conditions of property companies. As such, we can conclude that all macroeconomic factors were not important variables to take into consideration for evaluating the financial conditions of property companies. Therefore, this finding rejected Hypothesis 4 (H4).

However, the research findings were inconsistent with the research conducted by Mohmad Isa (2004) which discovered that the gross domestic product is an important predictor variable to determine the companies in financial distress. Meanwhile, Alifiah (2014) revealed that the base lending rate was the only macroeconomic factor found to be significant to investigate the financial condition of trading and services sector companies when facing financial pressure.

4.5 Chapter Summary

In order to answer the research questions and to achieve the research objectives, this chapter describes and discusses the results of this research through descriptive statistics,

correlation analysis, and linear regression analysis. The research findings revealed that there were a few property companies in Bursa Malaysia in financially distressed conditions based on the financial information from 2014 to 2018. The listed property companies with small market capitalization had a greater risk of suffering from financial pressure or difficulties as this finding proved that most financially distressed property companies have small market capitalization.

This research also found financial ratios, namely leverage ratio, profitability ratio, and liquidity ratio were useful and important variables to consider in evaluating property companies' financial conditions, which were either in a financially good or distressed position. This research had identified debt ratio (DR), return on assets (ROA), and current ratio (CR) as the key financial ratios that were able to evaluate the financial condition of property companies.

Company's leverage represented by debt ratio (DR) indicated an inverse relationship with the Z-score; DR negatively impacted on the property companies' financial condition. The rise in the company's debt level would negatively affect the company's financial condition as it caused a decrease in the Altman Z-score and thus, presents a higher financial risk.

In contrast, profitability and liquidity measured by return on assets (ROA) and current ratio (CR) had positive influence or impact on the property companies' financial condition. If a company continues to generate higher profits and has higher liquid assets,

the company would improve its financial condition and the risk of financial loss would also be lower. Meanwhile, this research found that all Malaysian macroeconomic factors have shown no strong influence and effect on the property companies' financial condition.

Table 4.7
Summary Findings of the Study

	Research Hypothesis	Result	Hypothesis
H1	There is a significant relationship between the leverage ratio and Altman Z-score to evaluate the financial condition of property companies.	Significant	Supported
H2	There is a significant relationship between the profitability ratio and Altman Z-score to evaluate the financial condition of property companies.	Significant (only return on assets)	Partially Supported
H3	There is a significant relationship between the liquidity ratio and Altman Z-score to evaluate the financial condition of property companies.	Significant	Supported
H4	There is a significant relationship between macroeconomic factors, namely gross domestic product, base lending rate, inflation rate, and Malaysian housing price index with Altman Z-score to evaluate the financial condition of property companies.	Not Significant	Supported

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter discusses and concludes the findings of this research on the financial conditions of listed companies in the property sector and its relationship with financial ratios and macroeconomic factors from 2014 to 2018. The implications, shortcomings in conducting this research, and recommendation for future research are highlighted in this chapter.

5.1 Conclusion of the Findings

The key research objective was to evaluate the financial condition of listed companies in the property sector as either being in financial distress or in a good financial position. This research also identifies the significant relationship between the financial ratios and macroeconomic factors in evaluating the financial condition of property companies as calculated by Altman Z-score. A sample of 45 companies in the property sector was included in this research, and data analysed were the financial information obtained between 2014 and 2018. All the data were analysed using a linear regression method in the Statistical Package for Social Science (SPSS) software.

The dependent variable was represented by the financial condition, derived from the Altman Z-score model, of property companies in Bursa Malaysia. Meanwhile, the

independent variables comprised of financial ratios, namely debt ratio (DR), net profit margin (NPM), return on assets (ROA) and current ratio (CR), and macroeconomic factors which are gross domestic product (GDP), base lending rate (BLR), inflation rate (IR), and Malaysian housing price index (MHPI). All independent variables were chosen according to findings and analysis from previous studies that indicated the ability of variables to analyse the financial failure and to influence the corporate financial condition as determinants.

The results reveal that nine to fourteen listed property companies were in financial distress between the years 2015 and 2018. The property companies with low market capitalization had a higher tendency to suffer financial distress as the results showed that most of the financially distressed property companies had low capitalization.

The research also demonstrates that financial ratios comprising of leverage ratio, profitability ratio, and liquidity ratio were important factors to consider in evaluating the financial condition of property companies. Therefore, the research identified the statistically significant factors were DR, ROA, and CR. ROA and CR were positively associated with the property companies' financial condition, suggesting that the higher values of ROA and CR would have positive impacts on the financial condition of property companies, and thus lowering the risk of financial failure or default risk. As such, the results also imply that the amounts of profit generated and current assets or liquid assets owned by the listed property companies can be inversely associated with financial distress.

Meanwhile, leverage represented by DR showed a negative association with the financial condition of property companies, thus indicating that a property company with a higher leverage would have a lower level of financial condition, which would result in a higher risk for financial distress. This research also demonstrated that the financial condition of property companies is associated with the level of debts or loans. However, NPM that represented the profitability was found insignificant with the financial condition of the listed property companies. It also means that the percentage of net profit of total revenue generated by the listed property companies was not considered important in assessing their financial condition.

This research also discovered another of its research objective to explore the significant relationship between macroeconomic factors and the financial condition of property companies. The results of this research found that the financial conditions of property companies were not significantly influenced by macroeconomic factors like GDP, BLR, IR, and MHPI. As such, this research concludes that no macroeconomic factors employed in this study were useful and important in evaluating the financial condition of property companies.

5.2 Implications of the Study

The research has denoted three financial ratios, namely DR, ROA, and CR as important factors to consider in evaluating the financial condition of property companies. Meanwhile, NPM of property companies and macroeconomic factors comprising of GDP, BLR, IR, and MHPI were insignificant with the financial condition of property companies.

This paper also revealed that the amounts of income or profit generated, the amounts of debt borrowed, and current assets would significantly influence the financial condition of property companies. In other words, the level of profitability, liquidity, and leverage would determine the financial condition of Bursa Malaysia-listed property companies as either in a good position or financially distressed. The property companies with higher profitability and liquidity will have less risk of financial distress or failure. Meanwhile, lower-leverage property companies will have less exposure or risk of financial distress or failure. In view of these, it is important to closely monitor the level of profitability, liquidity, and leverage of the property companies to ensure they are in good financial condition and able to run its business activities smoothly.

In general, the findings of this research are beneficial for academicians, corporate managers, fund managers, financial analysts, economists, and investors. They could use the results as an indicator and reference to get an overview of the financial conditions of listed companies in the property sector and the significant factors which could influence the financial condition of these companies. Fund managers and investors may find this information very useful as it could help them to improve their decision and mitigate the risk of loss by withdrawing their funds from distress-prone companies. Based on the financial analysis in this study, company management would be able to analyse their performance in the past few years, thereby helping them to recognize their weaknesses and seek to find solutions as well as make strategic and prudent decision to strengthen their financial position.

5.3 Limitations of the Study

There were several limitations we experienced in performing this research. The first limitation is the samples used concentrated only on the property companies in Bursa Malaysia. The property sector comprises of private and public developers. The public developers have a social responsibility to fulfil the housing needs by offering lower income group housings, while the private developers offer housings to all categories of society from low-, medium-, to high-cost houses. In fact, there are many private companies in the Malaysian property sector that are not listed in Bursa Malaysia and are usually small and medium-sized property companies. Therefore, the findings of this research do not reflect the overall property sector companies in Malaysia as a whole.

The second limitation is data availability. Despite that the topic on corporate financial distress or financial failure is very popular among researchers worldwide, none of the studies was found to evaluate the financial condition or financial distress of companies in the property sector in Malaysia, or in other countries. Therefore, it was difficult to make comparisons on the findings as previous studies focused on the companies' financial health and financial distress in the Malaysian consumer products sector (Alifiah et al. 2013), trading and services sector (Alifiah, 2014), and manufacturing companies (Nur Hafizah, 2015).

5.4 Recommendations for Future Research

Considering that no research has been conducted on the financial condition, specifically financial distress of companies in the Malaysian property sector, this research could be regarded as the first study and the beginning of other future studies. In view of the results of this research, the researcher has identified a few recommendations that could be considered and supported for future research related to this subject.

Firstly, this research used only 45 property companies in Bursa Malaysia as the sample and covered the financial period of 5 years, from 2014 to 2018. In order to obtain more conclusive results representing all property companies in Malaysia, future studies should use larger samples including public listed and non-public listed companies as well as extending the research period longer, for example, to ten (10) years. By doing this, future studies would be able to identify the trend performance and have a better view of the financial condition involving the companies in the Malaysian property sector.

Secondly, future studies should include various financial ratios as independent variables to evaluate the financial condition among Malaysian property companies. Efficiency ratios and cash flow based ratios are among the suggested financial ratios to include in the future studies as both ratios reflect the efficiency of a company and the ability of its cash flows that affect the financial condition of property companies.

In addition, future studies should take into consideration of other Malaysian macroeconomic factors like income, unemployment rate, and rate of money supply.

As such, future studies should be able to identify and observe the effect and influence of those macroeconomic factors on the companies' financial condition in the Malaysian property sector. A better understanding on the impacts of macroeconomic factors on property is vital for corporation directors, financial institutions, government agencies, and policymakers in order to take prudent actions in the property sector, particularly during uncertain market conditions and economic crisis.

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