THE IMPACT OF DEBT TO SHARE PRICE VOLATILITY

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BACHELOR OF BACHELOR OF BUSINESS ADMINISTRATION (HONS)
BANKING AND FINANCE

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

DEPARTMENT OF FINANCE

July 2013

DECLARATION

We hereby declare that:

(1) This research project is the end result of our own work. All sources of work have been stated in the references either printed or electronic.

(2) None of any parts of this research project has been submitted to any learning institutions.

(3) The word count of this research report is more than 10,000 words.

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ACKNOWLEDGEMENT

We feel grateful that our research project has been done successfully through the help by various authorities. This research project is completed after two long semesters hard work from us. We feel a million of thankful to those authorities who have helped us in our work.

First of all, we want to express our gratitude to our Final Year Project supervisor, Ms Zuriawati, who is a lecturer in Universiti Tunku Abdul Rahman under the Department of Finance. Ms Zuriawati guides a lot in our project work. Through her guidance, we can carry out our work within the given time period. Ms Zuriawati is always available whenever we need her assistance. She gives a lot of advices to us so that we can prepare a better thesis. She answers our questions patiently.

Besides that, we want to thank to our parents for giving support to us. Our parents support us that led us to have the power to finish this research project. Moreover, we would like to thank to our friends that support us in any manner.

Lastly, we would like to thank to all our group members. All the group members have sacrificed the time to accomplish this task. All of the group members have developed a good relationship among each other though doing this thesis.

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LIST OF ABBREVIATIONS

AMEX	American Stock Exchange
C	Constant
CDRC	Corporate Debt Restructuring Commitee
CLT	Central Limit Theorem
CRSP	Center for Research in Security Prices
DPR	Dividend Payout Ratio
DPS	Dividend per share
DY	Dividend Yield
DW	Durbin-Watsons test
EBIT	Earnings before Tax and Interest
EPS	Earnings per share
FEM	Fixed effects model
GDP	Gross Domestic Product
HSP	Highest Share Price
JB	Jarque-Bera
LEV	Leverage

LSP	Lowest Share Price
MCCG	Malaysian Code on Corporate Governance
NYSE	New York Stock Exchange
OLS	Ordinary Least Square
PLS	Panel Least Square
PN 17	Practice Notes 17
PV	Stock Price Volatility
REM	Random effects model
ROA	Return on Assets
ROE	Return on Equity
TA	Total Assets
TD	Total Debts
VIF	Variance Inflation Factor

PREFACE

This research paper is submitted in partial fulfilment of the requirement for Bachelor of Business Administrations (Hons) Banking and Finance. Our Supervisor on the project is Ms Zuriawati bin Zakaria. We have referred several researchers' study in our study, and we quoted them in the references.

We noticed that there are many foreign researchers have studied similar topic in other countries, but there is not much or no similar research in Malaysia. We are keening to know more about effect of debt and other variables that will influences the share price volatility. Hence, we choose the topic 'The impact of debt to share price volatility'.

Throughout the research process is tough but we learn a lot of knowledge and experience beyond the text books, and we have more understanding regarding the factors that cause share price fluctuation. We believe that the experience and knowledge we learned from this research will benefit us in future.

ABSTRACT

This paper is aim to analyze the leverage, firm size, earnings volatility, dividend and growth on share price volatility in consumer products companies which listed in Bursa Malaysia. We have selected 62 companies as our sample. The variables are leverage, firm size, earnings volatility, dividend and growth from 2005 to 2010. By using multiple regression, we get our own results to know which variable is significant and which variable is insignificant.

CHAPTER 1: RESEARCH SYNOPSIS

1.0 Introduction

The objective of this study is to examine how debt affects the stock price volatility in consumer product companies in Malaysia. There are seven (7) factors to be examined in this study, such as dividend payout ratio, growth, company size, leverage, earning volatility, during and post crisis, and high and low leverage company. In this chapter, we will be going to discuss background of study, problem statement, objectives, research questions, hypotheses to be tested, significance of study and chapter layout.

1.1Background of Study

Share price plays an important role in stock market. According to Lansing and LeRoy (2012), the various tests of share price volatility had long been presented since mid 1970s. The fluctuation on the share price will cause systematic risk for investors (Guo, 2002). According to Zakaria, Muhamamd, and Zulkifli (2012), the movement of the future share price will be focus by all types of investors in order to minimize the risk and maximize the profits. There are many factors will influence the share price volatility either directly and indirectly.

Debt is one of the factors that will cause impact to share price (Baskin, 1989). It is defined as an amount of money that owed from a party to another party. It can be owed through bills, notes, bonds, loans, or commercial paper under express agreement. The debt contracts had stated clearly the interest need to be pay, the duration of debt, the amount that borrow, and other conditions. The parties that borrow money are known as debtors while the parties that lend money are known as creditors. Debtors need to repay creditors interest that agreed between both parties when signing contracts as the opportunity cost afterwards.

If the corporations' debts exceed the corporations' equity, it is known as high leverage. Corporations like to be financed with debts because debt is tax deductible as the interest expenses will deduce the net profit. Therefore, the lower profits on balance sheet, the lower tax will be given to government. However, too much leverage will lead to high default risk which causes the share price decrease (Leong, 2010). In worldwide, there is almost $1 trillion of corporate debt outstanding, which is quite similar to the United States high yield corporate leverage market (Platt, 2012). In this recent year, the emerging market high yield corporate debt is considered the best fixed income assets (Platt, 2012).

Hens and Steude (2009) explained that the changes on the share price will bring impact to the debt-to-equity ratio of the firms who are issuing stocks and bonds. The risk of the company will increase as the share price increase because it will cause the value of equity decrease due to the value of equity less than value of debt. Thus, the debt-to-equity ratio decreases as a result of share price increases.

According to Lane (2012), the global economic crisis began in August 2007 has become a painful reminder to the world. It affects small or large countries around the world. It also brings some impacts to individuals, businesses and financial institutions. Economic crisis arises a lot of economic issues such as unemployment, inflation, and decrease in stock price and currencies in Asian countries.

1.2 Debt in Malaysia

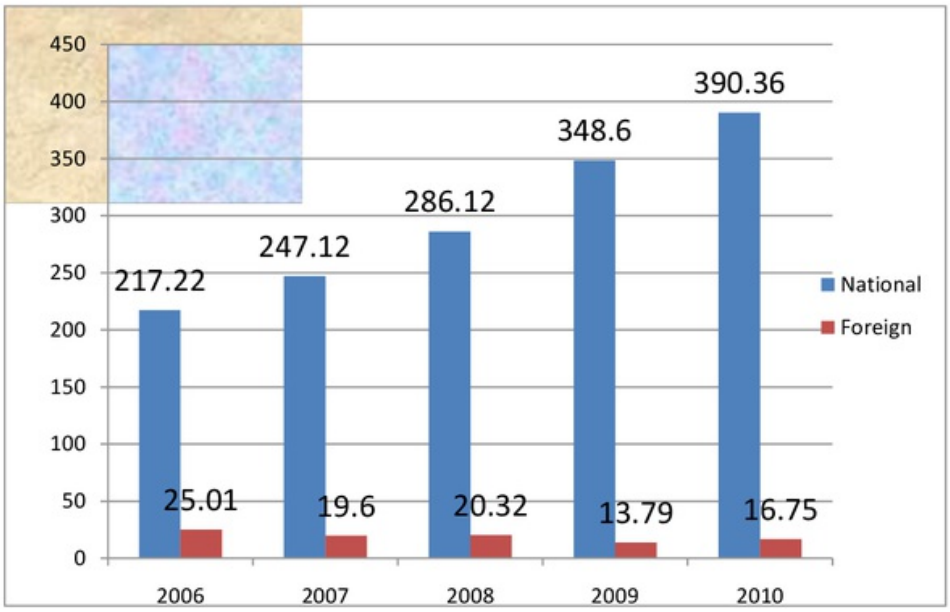
Nelson (2013) defined public debt as sovereign debt or government debt, it also be defined as debt that owned by government. Public debt is increasing since global crisis from 2007 to 2008 (Nelson, 2013). According to Mahalingam (2011), the percentage of public debt in Malaysia increases by 12.3% in year 2010. In year 2009, the debt amount was RM 362.39 billion and change to RM 407.11 billion in year 2010 (Mahalingam, 2011). Malaysia is bearing a huge level of debt in the public and private sector. In 2012, Malaysia had 52.9 percent of Gross Domestic Product (GDP)

and faced the rise of debt because of the 6.7 percent budget deficit in recession (Hussein, 2013). According to Lim (2013), Wall Street Journal reported that in year 2007, Malaysia credit-to-GDP ratio increase from 96 percent to 117 percent.

Over borrowing of debt will make companies face bankruptcy and financial instability (Hussein, 2013). In 2010, $398 billion of corporate debt had been issued in the emerging market (Emerging Markets Corporate 2012). According to Leong (2010), Bursa Malaysia had announced in year 2010 that Haisan Resources Berhad, Limahsoon Berhad, Ngiu Kee Corp Bhd , Nam Fatt Corp Bhd, Kenmark Industrial Co (M) Bhd, Linear Corp Bhd, LCL Corp Bhd, and Tracoma Holdings Berhad failed on their debt obligations. All of the companies are categorized under PN 17 (Practice Note 17). Carotech Bhd is the latest defaulter.

The Corporate Debt Restructuring Committee (CDRC) is the effective way that the Malaysian Government contributes to the corporate borrowers and creditors to come out with the debt resolutions where legal process is not required ("Corporate Debt Restructuring," 2013). This platform had helped the companies with high leverage to settle their debts. Corporate Debt Restructuring Committee (CDRC) had solved RM 45.8 billion of debts ("Corporate Debt Restructuring," 2013). Hence, it can recover the country's economy.

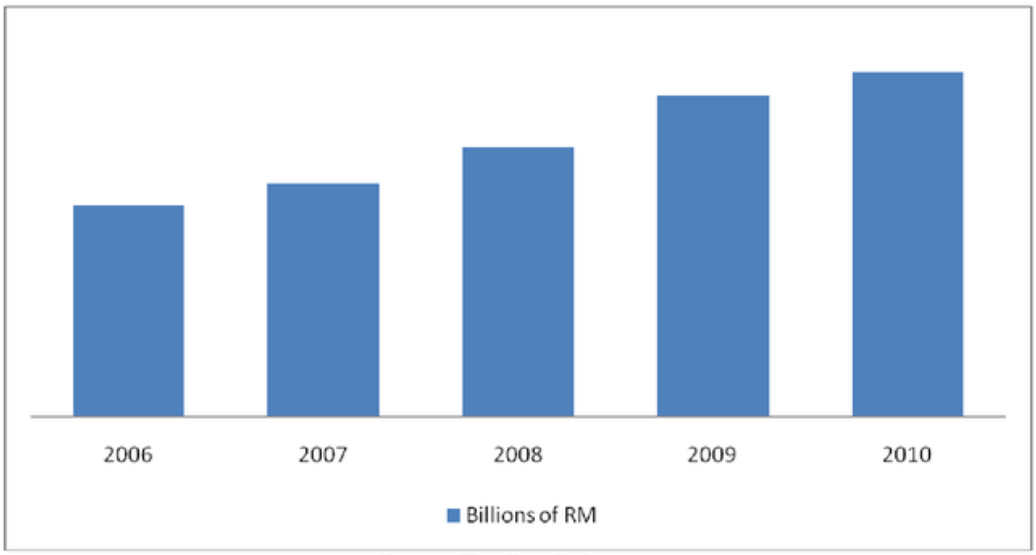
Figure 1: The debt level of Malaysia from 2006 to 2010



Source: The Star Online

According to Figure 1, the national debt in Malaysia has increased from 2006 to 2010. In 2010, it consists of RM 390.36 billions of national debt, which is the highest among the five years. .From the year 2008 to 2009, the national debt has generated the highest increment which is 21%. The movement of foreign debt does not fluctuate too much. From the figure above, the foreign debt moves in trend, that is decreases follow by increases. The highest foreign debt consists of RM 25.01 billion at 2006 while the lowest foreign debt is RM 13.79 billion at 2009. The national debt amount is largely more than the foreign debt amount each year.

Figure 2: Trend of Malaysian Government Debt



Source: The Star Online

Table 1: Trend of Malaysian Government Debt

Year	Debt (Billions of RM)
2006	242.23
2007	266.72

2008	306.44
2009	362.39
2010	407.11

Source: The Star Online

From the Table 1 above, the Malaysian debt is increasing from year to year. .From the year 2008 to 2009, the government debt of Malaysia has generated the highest increment by 18.26% as a result of crisis. From the year 2006-2007, the debt has generated the least increment, which is only 10.1%. The lowest government debt is at 242.23 billion in 2006 while the highest government debt is 407.11 billion at 2010. It can be observed that the highest debt is at year 2010.

Figure 3: Standard and Poor 500 stock Price Index as at 31 December from 2007 to 2012

Source: Economic Research of Federal Bank of St. Louis 2013

Table 2: Standard and Poor 500 stock Price Index as at 31 December from 2007 to 2012

Year	Stock Price Index

2007	1468.36
2008	903.25
2009	1115.10
2010	1257.64
2011	1257.60
2012	1426.19

Source: Economic Research of Federal Bank of St. Louis 2013

According to Table 2, stock price index has decreased sharply which consisted of 38% from 2007 to 2008 and continuously increased slightly from 2008 to 2012. From 2008 to 2009, stock price index has contributed the highest increment by 23%. Through our observation, 2008 has generated the lowest stock price index at 903.25.

1.2.1 Overview Debt by Industry Product Sector in Malaysia

Consumer product industry is being chosen because consumer product industry is an important industry which is very closely related to our lives. Consumer products such as shoes, clothes, food and beverages are essential products that we use daily. Therefore, we want to understand better about the consumer product industry especially regarding the debt in this particular industry.The top ten consumer products companies are PPB Group Berhad, British American Tobacco Malaysia, Nestle Malaysia Berhad, UMW Holdings Berhad, Fraser & Neave Holdings Berhad, Oriental Holdings Berhad, Guinness Anchor Berhad, MSM Malaysia Holdings Berhad, Calsberg Brewery Malaysia Berhad and Tan Chong Motor Holdings Berhad ("Top 10 Of," 2013). In the time of economic crisis, the Swiss, which is the luxury watch industry, faced a drop of sales by 22.3 percent (Sia, 2010). In year 2008 financial crisis, Padini Holdings Berhad, Bonia Corp Bhd and Voir Holdings Berhad can maintain their revenues ("Recession-Proof Fashion," 2011). This is a surprise for the investors. The recession has caused the retail of beverages and drinks to drop in their sales.

Stanton, Emms, and Sia (2010) found that consumer products industry especially food and beverages faced a drop in revenue between 3% and 5 % as a result of recession in year 2009.

Table 3: Statistics of Sector

Average by Industry	Total debt to total asset	Long term debt to total asset	Short term debt ratio	Total debt to market value ratio	Long term debt to market ratio
Consumer and Property	0.4367	0.0697	0.3670	0.4383	0.0724
Construction and property	0.6322	0.1699	0.4623	0.5827	0.2069
Trading and Service	0.4350	0.1924	0.2426	0.4723	0.1964
Industrial Product	0.4025	0.1125	0.2900	0.4371	0.1170

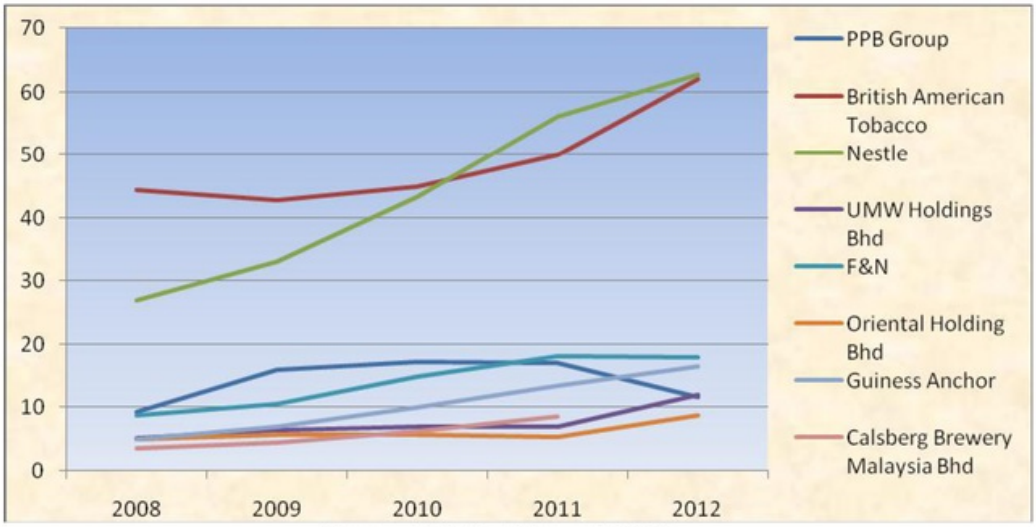
Source: Mazlina, Hashanah and Badriyah (2011)

Table 4: Share Price of Top 10 Consumer Products Companies in Malaysia

Companies	2008	2009	2010	2011	2012
PPB Group	9.30	15.96	17.26	17.16	11.60
British American Tobacco	44.50	42.80	45.00	49.92	62.00
Nestle	27.00	33.10	43.34	56.20	62.84
UMW Holdings Bhd	5.15	6.35	7.02	7.00	11.94
F&N	8.85	10.60	15.00	18.20	18.02
Oriental Holding Bhd	4.94	5.70	5.59	5.36	8.70
Guiness Anchor	5.05	6.95	10.16	13.46	16.60
Calsberg Brewery Malaysia Bhd	3.60	4.54	6.32	8.54	12.52

Source: Wall Street Journal (2013)

Figure 4: Share Price of Top 10 Consumers Product Companies in Malaysia



Source: Wall Street Journal (2013)

In Table 4, there are top 10 consumers product companies in Malaysia. Through the graph, it showed that British American Tobacco has achieved the highest share price among ten consumer product companies in Malaysia from 2008 to 2010. However, Nestle has reached the greatest share price from 2011 to 2012 among ten companies. In contrast, Calsberg Brewery Malaysia Bhd has generated the lowest share price among ten companies from 2008 to 2010. While Oriental Holding Berhad has the lowest share price from 2011 to 2012.

1.3 The Impact of Crisis on Debt

According to Kiyotaki and Moore (2011), the main reason of transforming financial crisis into recession is due to the banks and firms financial condition that learned from previous lessons. When the collateral value that provided by the firm is not able to meet the bank requirement, it caused firm involved in higher cost of financing. This will force banks and firm lower their leverage and investment opportunity thus lead to

lower output. During economic recession, firm need to borrow money from bank while bank required collateral as fundamental asset, eg: house. Banks will ask their agency to estimate the value of collateral that belongs to firm, if the quoting price is not satisfied by bank, bank will consider rising up the collateral value and increasing the borrowing cost (interest rate) to firm. It will force firm to give up the loan application and thus decrease leverage of firm. At the end, it leads the firm lost an investment opportunity and lowers their production. In contrast, there are some of the commentators have emphasized that when lending boom on the early 2000 has triggered into sub-prime crisis which force firms and bank to increase their leverage. Ozcan, Sorensen, and Yesiltas (2011) reported that when the boom turned into bust, bank deleverage through restrict on credit, global economic become worst. During pre crisis, economic expansion has encouraged firm borrowed money from bank to involve in investment activities thus increase in firm leverage. When come to crisis, bank will limit their debt to public due to large quantity of firm borrow money from the bank. Restrict amount of loan force bank to deleverage.

Besides that, leverage contraction has been mitigated by central bank of their lending facilities during economic recession. Lending standard or lending facilities will be affected by economic condition (Geanakoplos & Pedersen, 2011; Lown & Morgan, 2006). During crisis, many people have to borrow money from bank. If large number of customers borrow money from small bank simultaneously in a short period of time, lack of liquidity will accelerate in bankruptcy of small bank. Since central bank is last resort of lending, small bank will borrow money from central bank to overcome the problem. Central bank started to control the credit facilities and restrict the amount of lending by adjusting the federal funds rate between small banks. Changes in federal fund rate will affect the amount of loan that approved by central bank. When central bank increase in federal fund rate, amount of lending become lower. Thus, it will lead to decrease leverage of central bank and overall financial intermediaries.

Based on previous studies, we can conclude economic recession and economic boom could affect the changes of leverage. When there is economic recession, it will cause decrease in leverage. In contrast, when there is economic boom lead to decrease in leverage.

1.3.1The Impact of Crisis on Debt in Malaysia

The global economic crisis began in 2007 has become a painful reminder to the world. It affected small or large countries around the world. It also brings some impacts to individual, business and financial institution (Claessens & Kose, 2013). While the financial crisis arises from US housing burble and led to financial crisis and spread throughout the world. Most of the Asian countries like China, Korea, Japan, Singapore and Malaysia affected by the severe recession from US. In Malaysia, the impact of crisis slow down the economic growth by reducing GDP, investment, import and export, consumption (Ramadhani, Erika, & Dewitari, 2010). In the last quarter of 2008, Malaysia's GDP (gross domestic product) growth rate has decreased by 0.1%. This indicates the lowest growth in this year. It has lower down the overall GDP in 2008 up to 4.73%. In the first quarter of 2009, GDP has declined by 6.2% and continuously decrease by 3.9% in the second quarter of 2009. Dropping GDP of growth represents that the financial crisis has spread in Malaysia. Declining in GDP means that the total production of goods and service or total output of the country is low. It also represent declined in consumer spending or reduce on consumer demand in a country.

It indicates that the firm generates less income and led to decrease in spending. Loan demand can be determined by real income of firm. Since the company could not generate more income, bank will not approve loan application from those companies to avoid default in future. It will decrease the debt in company due to unsuccessful to apply loan from bank (Cappiello, Kadareja, & Protopapa, 2010). Besides that, global crisis bring a huge impact on Malaysia finance sector by reducing their investment activities in capital investment, portfolio investment and direct investment. Based on the statistic generated by Bank Negara Malaysia, monthly statistic bulletin shows that capital flow from US's financial institution has been declined sharply with net financial and capital flow from negative RM37.8 billion in 2007 to negative RM 123.9 billion in the second quarter of 2008. Other than capital investment, the portfolio investments are the most not stable throughout the year from 2007 to 2009.The statistic show that there is greatest net outflow of RM92.4 billion in 2008 and RM18.4

billion net inflows in 2007. Malaysia has been affected by the portfolio investment outflow in 2008 due to large number of foreign investors affect the stock market significantly. Besides that, crisis has decreased the private investment sector.

Growth rate of private investment from 2007 to 2009 has continuously remained in negative in Malaysia. Falling of investment is due to US will tend retrieve their existing investment in Malaysia. Most of the sector like machinery for industry, transport equipment manufacturing sector has involved in negative growth. Limit in credit and gain low income has declined investment activities worldwide during crisis (Cappiello, Kadareja, & Protopapa, 2010). In firm perspective, most of the firm would like to borrow from bank during good economic condition to make investment to raise up company capital fund. However, during economic crisis, manager of firm will choose to decrease borrowing to make investment (Lang, Ofck, & Stulz, 1996). It is because they are hard to take advantage and gain extra income in future. Thus it's not necessary for firm to borrow from bank to invest in stock or bond. Firm give up on borrowing from bank could decrease further debt or liability.

1.3.2 The impact of debt on firm and country economy growth

According to Cecchetti, Mohanty, and Zampolli (2011), in the modern society, finance is one of the ways to stimulate economic growth and important for individual, firm, household and country. From the research revealed that the debt is bad for economy growth. Further increase in public debt, corporate debt and household debt will tend to slow down the economy growth. Ahmad, Abdullah, and Roslan (2012) found that short term debt, total debt influenced firms ROA (return on asset) and ROE (return on equity). Refer to pecking order theory, firm will finance their debt by using internal fund at first stage. If any additional funds are needed, firm will issue equity or bond to write off their remaining debts. Usually, if a firm able to generate higher profit or perform better as compare with other firm, it's indicated that the firm has lower debt capital. According to Gleason and Mathur (2000) suggest that manager may make decision by using various level of borrowing as one of the strategy to improve firm performance. If manager has overused much of debt in firm daily

operation, it will lead to incurred in bankruptcy of a company. In firm perspective, if they increase in borrowing from bank, reduce in income and higher interest rate become the main concern of the firm. In fact, reduce in income and higher interest rate caused the higher chance of defaulting that make by the firm (Cecchetti et al, 2011).

1.3.3 European Debt Crisis

Anand, Gupta, and Dash (2012) reported that European debt crisis occurs due to the Europe countries such as Greece, Portugal, Ireland, Italy and Spain face problems in paying the debts to their bondholders. These European countries are unable to generate adequate funds to repay to their bondholders. According to Anand, Gupta, and Dash (2012), the European debt crisis has expanded its impact around the globe and the five countries have high chances to default. Since 2007 United States financial crisis, the global economy grow slowly. Greece's debts were too huge and the amount of debt is more than the country's income ("Eurozone Crisis Explained," 2012). Hence, the investors ask for higher yields for the bonds. The high yields on the bonds requested by the investors actually raise the leverage and burden of the nation.

Although the U.S. economy had fall into recession in 2007, the failed of the Lehman Brothers investment bank lead the crisis into more serious condition. Iceland was bankrupt and the Greece budget deficit is more than the forecasted amount ("Eurozone Crisis Explained," 2012). In May 2010, Spain Prime Minister Jose Luis Rodriguez Zapatero decided to reduce the wages of public workers, pension and government funding ("Spain Unveils Deep," 2010). On 23 April 2010, the Greek Prime Minister George Papandreou reported that Greece borrow 45 billion euro from euro zone nations and International Monetary Fund to overcome bankruptcy (International Monetary Fund, 2010).

The European Union has taken some ways such as increase the minimum rate of bank capital requirement (International Monetary Fund, 2010). This decision is to ensure ability to cope with the future crisis. Nelson, Belkin, Mix, and Weiss (2012) found that the European Central Bank and International Monetary Fund solve the crisis by purchasing the municipal securities in open market to provide liquidity to the government. Individuals and businesses are also affected by the

debt crisis. Foreign investors lack of confidence in these countries. A few governments especially from Europe default and bankrupt as a result of crisis and leaders from these countries face challenging to solve the issue. Malaysia has taken some actions to decrease the leverage. The actions include impose the regulations on real estate loans and discourage people from using too much on credit cards (Lim, 2013). The nations that have high level of debts are warned by the World Bank to be alert and make some decisions or plan stimulus package to reduce their debts ("European Debt Crisis," 2013).

1.4 Corporate Governance

According to The Malaysian Code on Corporate Governance 2012, corporate governance is the procedure that organization used to direct and manage the business and affairs of the company, in order to enhance business prosperity and corporate accountability with the ultimate objective of realizing long-term shareholders value, at the same time, taking into account of other stakeholders' affairs. The general definition of corporate governance from Zainal Abidin and Ahmad (2007) is a company sets and confines or control coordination of rules, practices and processes in a transparent way.

The purpose of corporate governance is to equalize the stakeholders' affairs in a company (Zainal Abidin & Ahmad, 2007). Stakeholders in a company consist of shareholders, management, customers, suppliers, financiers, government and the community. Corporate government is very crucial to lead the company to achieve the company's objectives; it synthesizes every level of management, from action plans and internal controls to performance measurement and corporate disclosure.

In year 2000, the Malaysian Code on Corporate Governance (MCCG) was found to enhance transparency, accountability, internal control, board composition and directors' remuneration. Corporate governance codes are useful in helping firms achieve their corporate objectives. MCCG had been included in Bursa Malaysia

listing rule and effective on January 2001. One of the criteria from MCCG is transparency, and because of this corporate disclosure and reporting became a "golden rule". According to Companies Act 1965, public listed companies are required to prepare and submit annual accounts including statement of financial position, statement of comprehensive income and cash flow statement before the annual general meeting. Besides, company directors are responsible for preparing annual accounts and then the accounts must be audited by certified auditors prior annual general meeting. Malaysia's government has drawn a number of measures or principles to enhance the standards of reporting and disclosure. The Financial Reporting Act was promulgated in Malaysia in 1997. MASB was established under the Financial Reporting Act of 1997 to develop and issue accounting standards.

In Malaysia, in the latest Malaysian Code on Corporate Governance 2012 (2012 Code) has revised the weakness in Malaysian Code on Corporate Governance 2007 (2007 Code) in order to enhance the affairs of investors and improve the transparency of corporate governance in Malaysia (MCCG, 2012).

Table 5 at below shows the ranking of corporate governance amongst eleven Asia countries in "CLSA Corporate Governance Watch 2012 list", conducted by Asian Corporate Governance Association (ACGA).

Table 5: Ranking of corporate governance amongst eleven Asia countries

Ranking	Country
1	Singapore
2	Hong Kong
3	Thailand
4	Japan & Malaysia
6	Taiwan
7	India
8	Korea
9	China
10	Philippines
11	Indonesia

Source from: Kim (2012)

Based on the Table 5 Singapore, Hong Kong and Thailand are ranked first, second and third respectively. Japan and Malaysia tied at rank forth, Taiwan ranked at sixth,, India ranked at seventh, Korea ranked at eighth, China ranked at ninth, Philippines came after China, and lastly followed by Indonesia.

1.4.1Benefits of Good Corporate Governance

Good corporate governance can be reflected from its performance, ability of debt repayment, good reputation, dividend payout, and many other signals that can reflect good corporate governance. Based on a survey of corporate governance conducted by Shleifer & Vishny (1996) there are many advantages from good corporate governance. Such as solve agency problem (conflict of differ objective between managers and shareholders), eradicate management discretion, legal protection to investors, reduce takeover, and reputation-building. Zakaria et al (2012) mentioned that good corporate government enables a company to raise fund from long term capital market with attractive terms.

1.5 Problem Statement

According to Leeve (2005), there are several factors which may affect the stock price volatility such as, Financial fundamental, Market psychology, Economic factors, and Major event. Financial fundamental can be defined as rise and fall in earning, profits, interest rate and cash flow which will affect stock price. Market psychology is the perception in the market fluctuate the stock price. Economic factors include economic health (inflation, employment, and Gross Domestic Product), demand and supply change, oil price and industry factors which can affect the stock price. Major event such as financial crisis, corporate scandal, industry, and even the product itself can have impact on stock price. People may still question the factor that affects share price volatility in Malaysia especially least research is conducted in thesis issue.

Besides, the previous studies show different conclusion in the relationship of dividend policy. According to Jechech (n.d), dividend policy have significant impact to stock price volatility in Zimbabwe, and in terms of size and leverage have positive

relationship to stock price volatility. Figlewski & Wang (2000) explained that change in firm's equity valuation has a certain degree of leverage in capital structure, therefore leverage and stock price volatility have positive relationship. However, Zakaria et al, (2012) pointed out a different view from Jechech (n.d) and Figlewski & Wang (2000) which is leverage is negatively affecting the share price volatility. This makes us tend to study in depth the effect of volatility on consumer product industry in Malaysia.

Nevertheless, the result for 1997–1999 (Asian Crisis) which have significant asymmetric effect for conditional volatility shocks. The result showed that the negative shock has greater stock price volatility than positive shock. However, this study based on Indonesia and during the Asian crisis of year 1997-1999. The investors may still have unclear picture the effect of crisis 2007-2008 on debt during share price volatile. Hence, this research tries to extend study on crisis to measure the effect in Malaysia.

1.6 Research Objective

Our research objectives are focusing on finding out the answer for the problem above.

1.6.1 General Objective

- To examine certain factors that will influence stock price volatility in listed consumer product industry in Malaysia.

1.6.2 Specific Objective

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- To understand the relationship between the debt and the stock price volatility.

- To understand the relationship between the debt and the stock price volatility during the crisis condition.

- To re-examine the firm toward share price volatility in high and low leverage.

-To investigate the effect of pre-crisis, during-crisis and post-crisis to share price volatility.

-To study the effect of other variables (firm size, earnings volatility, dividend payout ratio, and growth) to share price volatility.

1.6.3 Research Question

1. How does debt affect stock volatility in listed consumer product industry?

2. How does debt affect stock volatility in listed consumer product industry during the crisis?

3. Are there any contribution to dependent variable (stock price volatility) from three independent variables crisis (pre, during and post)?

4. How does the effect of high leverage and low leverage to share price volatility?

5. How does the effect of other variables (firm size, earnings volatility, dividend payout ratio, and growth) to share price volatility.

1.7 Hypothesis of Study

Three hypotheses have been provided to test the significant of factors that would have impact on the share price volatility. Firstly, the amounts of debt have impact on the share price volatility. Secondly, the level of debt will affect the movement of share price. Next, there is a relationship between dividend payout ratio and share price volatility. Forth hypothesis is growth will cause changes to the share price. Firth, the size of firm will be tested whether it will influence the fluctuation of share price. The last factor is the earnings volatility will affect the share price volatility. We will reject H_0 if the result of significant level is less than 0.05. Otherwise, we will not reject H_0. In the other words, H_0 will be accepted as it significant level is more than 0.05.

1.8 Significance of study

The significant study of this research is aim to help Malaysia consumer product industry firm to have better understanding on the variable that can affect the stock price movement, so that they can enhance on particular variable to increase their firm's fortune.

Dividend payout ratio, growth, company size, leverage, earning volatility, during and post crisis, and high and low leverage companies are the factors that we are going to examine, in order to minimize the risk exposure by investors and by constructing this model we also able to understand stock price volatility in Malaysia customer product market.

Furthermore, our study also benefits for academic purpose, where by future researchers and students can have better understand how each of the relevant variables will influence the stock price volatility.

Lastly, our study also can be a reference for individual investor when they keen to know the stock price movement for consumer product industry in Malaysia. However, this study only can be used as a reference in investment decision making, this study will not responsible for any error, and losses in investment.

1.8.1 Chapter Outline

Chapter 1

In this chapter we discuss the objective of this study. Besides, we also cover the background of study, debt in Malaysia, the impact of crisis on debt, corporate governance, problem statement, research objective, hypothesis of study and significance of study.

Chapter 2

In this chapter we will explain the relationship amongst all the independent variable to share price volatility and the theoretical models, by reviewing

previous researchers' studies. Besides, we will propose theoretical framework, develop hypothesis, and draw the conclusion for chapter 2.

Chapter 3

In this chapter, we are going to talk about the research methodology that we apply in our study. We used the secondary data as the resource of our research. We will talk more details of the method of research design, data collection, data processing and data analysis in this chapter.

Chapter 4

In this chapter we will be going to discuss the results and interpret them. 62 consumer product companies in Malaysia have been chosen as our sample. We obtain the data from datastream in Universiti Tunku Abdul Rahman. The duration of the data is from year 2005 until 2010. Furthermore, in this chapter we will cover the descriptive analysis, normality test, multicollinearity test, autocorrelation test, unit root test, Hausman Test, empirical results, and period of crisis.

Chapter 5

This chapter will presents all the summary of the results and some discussion on the major findings in chapter 4. Besides that, we will discuss on the limitation of the research and implication of the research. Some recommendation for the future researches will be provided in this chapter too.

1.9 Conclusion

In this chapter we have discussed objective of this study, background of study, debt in Malaysia, the impact of crisis on debt, corporate governance, problem statement, research objective, hypothesis of study and significance of study. Now we are going to proceed to chapter 2, for further understanding the relationship amongst

independents variables and dependent variable, theoretical framework and hypothesis development of our study.

CHAPTER 2: REVIEW OF LITERATURE

2.0 Introduction

In this chapter we will explain the relationship amongst all the independent variable to share price volatility and the theoretical models, by reviewing previous researchers' studies. Besides, we will propose theoretical framework, develop hypothesis, and draw the conclusion for chapter 2.

2.1Literature Review

2.1.1Share Price Volatility and Leverage

Cadenillas, Cvitanic and Zapatero (2004) described the incentive effects of undertaking either levered stock or unlevered stock to manager who do not want to face risk which is known as risk averse. While for the manager who makes a choice of leverage, it means they are risk neutral, they can face the risk if they can earn return. For example, higher risk will gain higher return and lower risk gain lower return. Most of the risk neutral shareholders will prefer their manager involves in high levered stock however, risk adverse shareholders will prefer their manager to take low levered stock. Levered stock and unlevered stock reflected the firm's value; it is because the decisions made by different shareholders will have different action. Good managers who are willing to take more risk and with strong ability to cope with bad circumstances, will benefit from levered stock's incentive. On the other hand, low type managers who are unenthusiastic to the firm value decline tremendously in price, therefore they are more defensive or avoid from taking greater risk which comes from leverage. Leverage will be optimal in no way. Managers have the right to make a decision on level of volatility equal to zero in spite of the type.

Aggarwal and Zhao (2007) concluded that the leverage-value relationship is definitely negative among both high growth and low growth companies. It means that when the company has higher growth, the leverage value is lower and vice versa. This journal using panel data to re-estimates the relationship between value of firm and leverage which is to manage the company effects on non-financial firm in US from year 1980 to 2003. While there consists of two data which is financial data and equity market data from COMPUSTAT's P/S/T and Research annual industrial tapes and Center for Research in Security Prices (CRSP). Besides that, Zakaria, Muhammad and Zulkifli (2012) also have the same conclusion with Aggarwal and Zhao (2007) which is they have negative relationship between leverage and firm value.

Moreover, McConnell and Servaes (1995) argued that the only high growth firms have negative relationship between leverage and firm value; low growth firms will have positive relationship. This is because the leverage-value effect is related to how well the firms utilize of debt to reduce under- and excess-investment related to agency cost. In this study, they use the quadratic regression to estimate the relationship between leverage and firm value for the years 1976, 1986 and 1988 in US Company. While the 1976 sample with 1173 firms and 1986 sample with 1093 firms which it listed on American Stock Exchange (AMEX) and New York Stock Exchange (NYSE).

Furthermore, Agrawal and Knoeber (1996) suggested that there is no relationship between leverage and firms' value. From the estimation of simultaneous equations shown statistically insignificant effect of insider shareholding, the firm's debts and activity in the market for corporate control, exclude external effects on the board. This study control agency problems between the shareholders and managers by using seven elements which are institutions, large block holders, inside shareholder, outside directors, policy of debt, managerial labour market and corporate control of market. They use cross-sectional OLS regressions to estimate the relationship between leverage and firms value in US.

We expect there is negative relationship between share price volatility and leverage. The higher leverage, it leads to decrease in share price volatility.

2.1.2 Share Price Volatility and Size of Firm

Size of firm affects firm performance through various ways while size of firm can be divided in three types which are small, medium, big that determined on the total asset of one company. In fact, larger firm has better performance relative to small firm by achieving economic of scale and has higher efficiency in their operation process (Majumdar, 1997). Larger firm has the ability in producing large amount of product and easier to achieve economic scale and more competitive in the market. Hence, they can control the negotiation power between supplier and client. Inversely, small firms are lack of economic of scale but suffer less in agency problem. Size of a firm could significantly affect the share prices (Karathanassis and Philiappas, 1988).

However, a number of studies about how size of firm affects stock price volatility have been investigated by those researchers. According to Hashemijoo,Ardekani and Younesi (2012), they study the consumer product companies which is listed in Bursa Malaysia by selecting a sample of 84 companies from 142 consumer product companies. They employed multiple regressions by collecting six years data from 2005 to 2010. Though the study, they find out that size of firm will affect share price volatility. This finding declared that a firm's size has significant negative relationship on volatility of stock price and firm's size. Usually, large firm has lower risk. It indicates that the share price volatility and earning of large firm is much more stable than small firm. Besides that, large firm is easier to diversify their risk through their investment activities when compare with small firm. It is because small firm has limited information that published in market to allowed investor better understanding on their stock market, it lead them hard to diversify their risk. Besides that, small firm is more difficult to absorb the risk when compare with large firm. Furthermore, small firm stock may more liquid. Hence, their share price volatility can result in more volatility than larger firm (William, 1983) found that small firm stocks are less traded in stock market than larger firm. Due to small firm in stock market doesn't attract more investor to buy their share caused the stock price decreased more as compare to large firm.

Since most of the smaller firm face more fluctuated in share price volatility, we expect that there is negative relationship between firm size and share price volatility.

2.1.3 Share Price Volatility and Earning Volatility

Company's earnings play an important role in stock price valuation (Lim, 2009). Earning volatility can be affected by economic factor or accounting factor like economic downturn and income level of firm. Earning volatility also explained in earning surprise or earning changes between estimate earning and actual announce earning. While Earning announcement and earnings estimate represent a good indicator to examine stock price volatility, it also will lead to fluctuation of stock price (Beaver William, 1968) found that by using the annual earnings data to estimate stock return around earning announcement day, the share price will increase.

According to Hashemijoo, Ardekani, and Younesi (2012) had investigated that share price volatility has significant positive relationship with earning volatility by examine on consumer product companies that listed in Bursa Malaysia. The research conduct based on sample of 84 companies from 142 consumer product companies from 2005 to 2010.From the correlation analysis, the researcher found that the earning volatility has positive relationship with share price volatility with the amount of 0.514 at the 1% of significant level. Researcher used multiple regression method and the result showed that there is significant positive correlated between share price volatility and earning volatility. This indicated that when company achieved in high earning volatility, it led to more volatility in their share price fluctuation. When there is more volatility, It's indicates high risk of firm. Investor also concern on the share price fluctuation in their consideration while invest in one company. Apart from that, Ball and Brown (1968) found that changes in earning has positive correlated with the firm's stock return. Stock return will influence by the earning surprise. When there is negative surprise in return, its reflect decrease in earning, Hence, it will affect decrease in stock return. In contrast, when there is

positive surprise in return, its indicate increase in earning. Hence, it leads to increase in stock return (Bamber, 1987).

We expect that there positive relationship between earnings volatility and share price volatility. The higher the earning volatility, it leads to increase in share price volatility.

2.1.4 Share Price Volatility and Dividend

Asghar, Ali shah, Hamid, and Suleman (2011) found that dividend policy (dividend decision) is significantly affect stock price volatility and stock return. Based on the study, the result showed that the dividend yield and payout ratio influenced on share price fluctuation. Dividend policy referred to the policy of a firm on how they distribute the net profits for cash dividend to shareholders or retain as retained earnings for reinvest in to firm (Habib, Kiani, and Khan, 2012). However, dividend payout policy is very complicated. If the company pay high dividend, it will reduce the growth opportunity of company. If company pay too low dividend will give a negative signal to shareholders and thus affect the share price.

The research regarding the relationship between share price volatility and dividend policy has been developed for a long time by previous researcher (Zakaria et al, 2012; Hussainey et al, 2010). Different theories were used to explain the connection between share price volatility and dividend policy such as information or signaling effect, rate of return effect, the bird hand theory, and clientele effect (Habib et al, 2012). There are several questions had been asked by corporate manager regarding to relationship between stock price volatility, dividend yield and dividend payment in 1950s. The questions are summarized by Litner (1959)

- The dividend payout should remain constant or change?
- Which types of dividend payment shareholder prefer? Whether fixed dividend payment or dividend payment based on the earnings of the company?
- Which types of investors that dividend policy could catch the attention of them, either younger generation of investors or older generation of investors?

According to Habib, Kiani, and Khan (2012) employed cross sectional regression analysis to examine the relationship between dividend yield and

dividend payout on share price volatility. The result had revealed that dividend yield have positive correlated to stock prices fluctuation while the dividend payout ratio have negative correlated on stock price volatility. Through the study above, they suggest that dividend yield is more recommended and essential in determining share price volatility. However, there are negatively correlated on the dividend yield and dividend payout ratio with the movement of the share price in UK Capital Market (Hussainey, Oscar, Chijoke, 2010). According to Hussainey et al (2010), investors will concentrate on the dividend payout and the risk of the investment which could affect the share price. They determined the connection between share price volatility with dividend policy through multiple least square regressions. Dividend yield and dividend payout ratio were used to measure the effect of dividend policy on the fluctuation of the share price. Growth, size of the firm, and the earnings volatility are included to test the relationship in the UK capital market. Those variables have impact on both share price volatility and dividend yield. Ten years annually data were collected to test the periodic effect. They found that the cross-correlations between the dividend yield and share price was -0.2583; while the cross-correlations of dividend payout with share price was -0.4446.

We expect that there are negative correlated between share price volatility and dividend payout ratio. The higher the dividend payout ratio, it leads to decrease share price volatility.

2.1.5 Share Price Volatility and Growth (GROWTH)

Cooper, Gulen and Schill (2009) defined the Asset Growth as the percentage change of total asset by year by year. The formulae for calculating the asset growth will be the Total Asset of current year minus the Total Asset of last year and then divided by Total Asset of last year. They found that asset growth at the firm-level has a strong negative predictor of stock price volatility or stock value in the future. Current assets, properties, plants and equipments, Intangible assets, current liabilities, total debt, and total equity have contributed negative correlation asset growth effect in stock price volatility.

Wen (2012) examine extend of the asset growth effect, is it reach the market level. Besides, the author also test the aggregate level whether will be affected by behavior theory. Author found that during year 1951 to 2009, the level of aggregate asset growth is a well negative predictor to estimate aggregate stock returns. The result is consistent with Cooper, Gulen & Schill (2009).

According to Lipson, Mortal and Schill (2009) suggest asset growth is tightly linked with the proxy for boarding arbitrage, including measures for the bid-ask spread, price impression, and the odd spotty. The stocks with little idiosyncratic risk have shown no asset growth effect. Their empirical result has shown that is consistent with the Cooper, Gulen & Schill (2009) and Wen (2012), there is a negative impact of growth effect to stock price volatility. However they found that, idiosyncratic risk plays an important role in explaining the cross-section and the time-series variation in asset growth returns.

However, Rashid and Anisur Rahman, (2008) have opposite opinion against Cooper, Gulen and Schill (2009), Wen (2012), and Lipson, Mortal and Schill (2009). The result of their study shows that growth will be lead to the changes of the share price and dividend policy and then the impact is positive but indirectly. However, there are negatively correlated between growth and dividend policy. Growth can be indirectly influence share price due to it could be having inverse impact on dividend policy which could affect share price.

Song (2013) focuses in the study of the relationship between the asset growth (real investment) and idiosyncratic return volatility. In the study, they found that whether the stock with asset growth rates high positive or negative has an idiosyncratic high return volatility. In time series, cross-sectional dispersion higher than the growth rate of the firm's asset return volatility predicts a higher average. High return volatility of high growth is driven by the amplification of a shock to regular cash flow through growth opportunities. Summing V-shape in each section, the model also explains the positive correlation between cross-sectional dispersion in average growth rate of asset return volatility and whimsical (idiosyncratic return volatility).

In conclusion, we aspect the relationship between asset growth and stock price volatility will be positive. The higher asset growth, it leads to has higher stock price volatility.

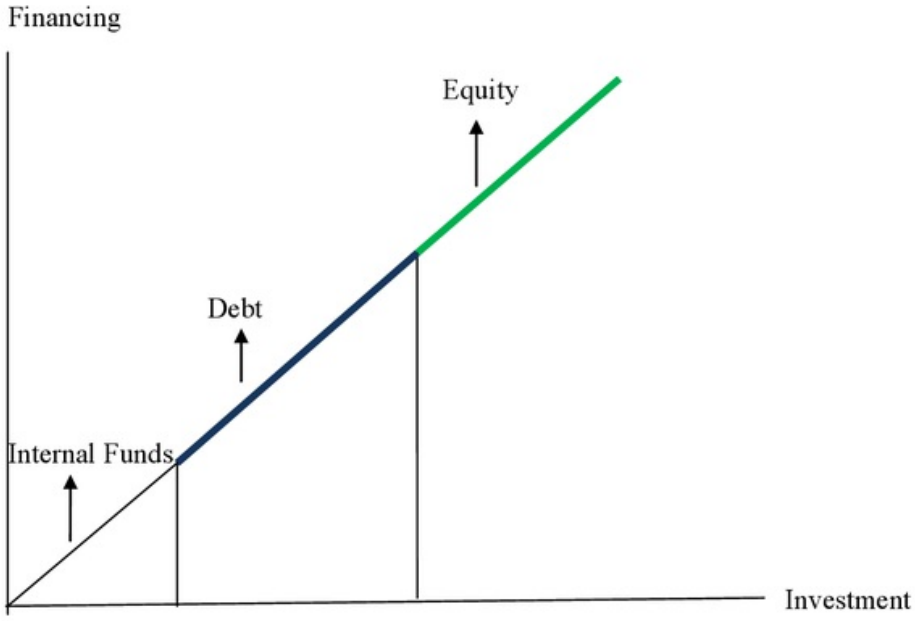
2.2 Theoretical Reviews

2.2.1 Pecking Order Theory

According to Frank and Goyal (2003) and Atiyet (2012), Pecking Order Theory is one of the leverage theories and it is the most significant theory. Jibran, Wajid, Waheed, and Muhammad (2012) found that Pecking Order Theory is important in corporate finance. Corporations choose to finance their funds internally rather than externally, but, when internal financing is inadequate, corporations choose debt financing instead of equity financing due to the lesser costs of borrowing debts (Myers, 1984). Myers (2001) claims that external financing forms a small portion of corporation capital where most of the external financing is debt. Myers (1984) and Myers and Majluf (1984) originally found the Pecking Order Theory. Hence, we can conclude that corporations follow such hierarchy: internal financing, borrowing debt and finally equity financing. Bulan and Yan (2010) mentioned that Pecking Order Theory used well for mature corporations than growth corporations. According to Shyam and Myers (1999), Pecking Order Model has larger ability to explain effectively than trade-off model in the long term. Jibran et al.(2012) report that corporations choose internal financing than external financing, if the corporations require external financing, debt is given priority and equity is the last choice. Shyam and Myers (1999) suggest that Pecking Order Theory explains financing behaviour accurately, however, Frank and Goyal (2003) rebut the saying by concluding that Pecking Order Theory describe financing behaviour accurately only for larger size corporations (Leary & Roberts, 2010). Zhao, Katchova, and Barry (2004) claim that Pecking

Order Theory is widely used in corporations that have low long-run dividend payout policies.

Figure 5: Financial Hierarchy of Pecking Order Model



Source: M.T.Leary, M.R. Roberts (2010)

The above figure shows that firms will prefer internal funding as first choice, when internal funding insufficient, borrowing debts is given priority over equity financing.

2.2.2 Trade-off theory

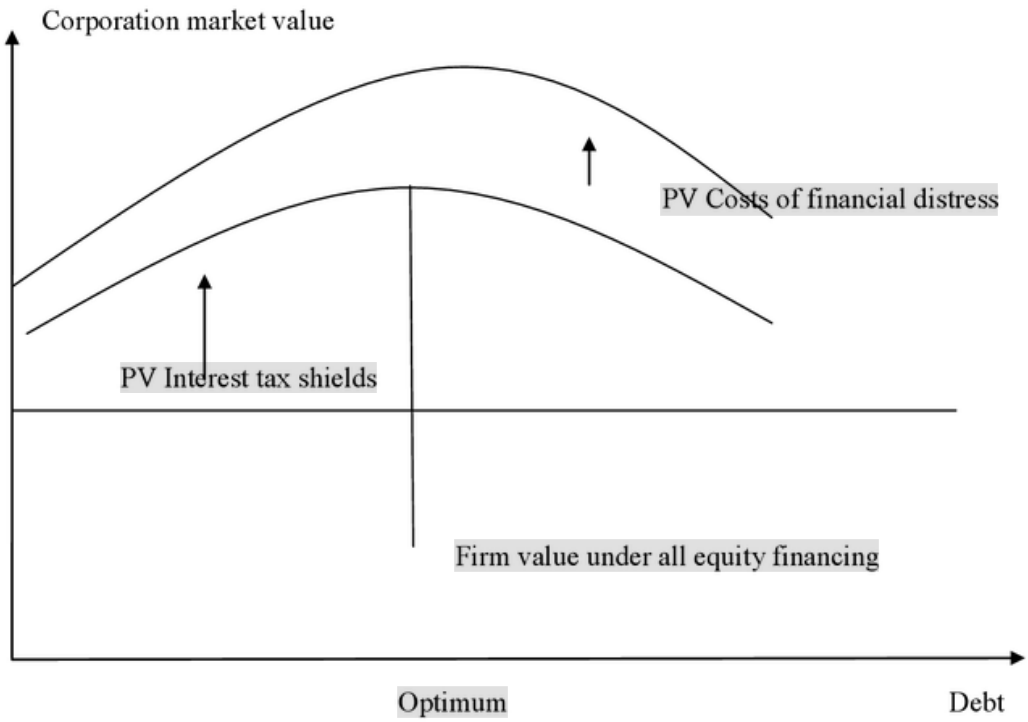
According to Lee and Nakayama (1997), trade-offs is in terms of tangent cone of the feasible directions in set of objectives and call the Pareto trade-off directions, but for noncone-convex set, this definition is not available for any trade-off information. Moreover, the trade-off is the total balancing of all the criteria and when judge of a decision maker, use the Pareto solution to solve those problems, it is because many criteria in practical multiobjective

optimization problem, therefore use the trade-off analysis in multiobjective programming is very important. According to Frank and Goyal (2007), the debt financing used by a company have classify into taxes, bankruptcy costs, adverse selection, transaction costs and the agency conflicts. Besides that, this had been use to synthesized not only into the trade-off theory but also the pecking order theory of leverage. Trade-off theory is the leverage within a capital structure and the optimal capital structure. This theory can be defined as the tax benefit from the interest payments. So, mostly all of the companies encourage less leverage than this trade-off theory would suggest is optimal.

If a firm get more profits and with less investments, the dividend payouts will be higher based on the trade-off model and pecking order models. More investments a firm has, the long-term dividend payouts will be lower while the dividends will not change the accommodate investment in short-term variation (Fama and French, 2002). According to Haekbarth, Hennessy and Leland (2007), they use trade-off model to test the optimal mixture and the priority structure of market debt and bank debt with the bank that have the less ability to renegotiate outside bankruptcy. Furthermore, those flexible bank debts will offer a better trade-off in term of bankruptcy costs and tax shields.

Susmel and Zhao (2008) examine the standard dynamic trade-off model of capital structure by using the Kalman filter, which can estimate directly the unobservable target debt-equity ratio. A Kalman Filter is an approach to test the trade-off theory of capital structure. A portion adjustment mechanism is not theoretically appealing because the long term debt is less flexible than the short term debt. By using this Kalman filter technique, it can test the dynamic trade-off model with different assumptions when there are different decisions for the dynamic behaviour of the target debt-equity ratio. Besides that in this journal, the trade-off theory had described the variable of size. According to Jun and Jen (2003), trade-off theory is using the short-term loans and it is based on the amount between reward and risk. Besides that, trade-off theory can be used to examine the factors which will affect the debt maturity and explain the debt financing characteristics.

Figure 6: The static trade off theory of optimal capital structure



Source: L.Shyam-Sunder, S.C.Myers L. Shyam-Sunder (1999)

2.3 Hypotheses of the Study

2.3.1Leverage

H_1= There is a negative relationship between leverage (LEV) and share price volatility (SPV).

Grouard, Levy, and Lubochinsky (2003) found that the amount of debt will directly affect the volatility of the share price. When the debts increase, there will be a conversely movement on the share price.

2.3.2 Size of Firm

H_2= There is a negative relationship between share price volatility (SPV) and size of firm (SZ).

There have impact on share price volatility due to the size of firm because the larger firms have more ability to diversify the risk in their investment activity (Hashemijoo, Ardekani, Younesi, 2012). They also explained that the abilities of collecting information and liquidity in cash flow of the larger size of firms are possible better than smaller size of firms. Therefore, the fluctuation of the larger firm will be bigger.

2.3.3 Earnings Volatility

H_3= There is a positive relationship between share price volatility (SPV) and earnings volatility (EV).

According to Hussainey (2010), earnings volatility will have positive impact on movement the share price. When the volatility of earnings is higher will lead to the volatility of the share price higher

2.3.4 Dividend Payout Ratio

H_4= There is a negative relationship between share price volatility (SPV) and dividend payout ratio (DPR).

Habib, Kiani, and Khan (2012), there is negative correlation between dividend payout ratio and share price volatility. In the other words, the share price will be decrease as the dividend payout ratio increase.

2.3.5 Growth

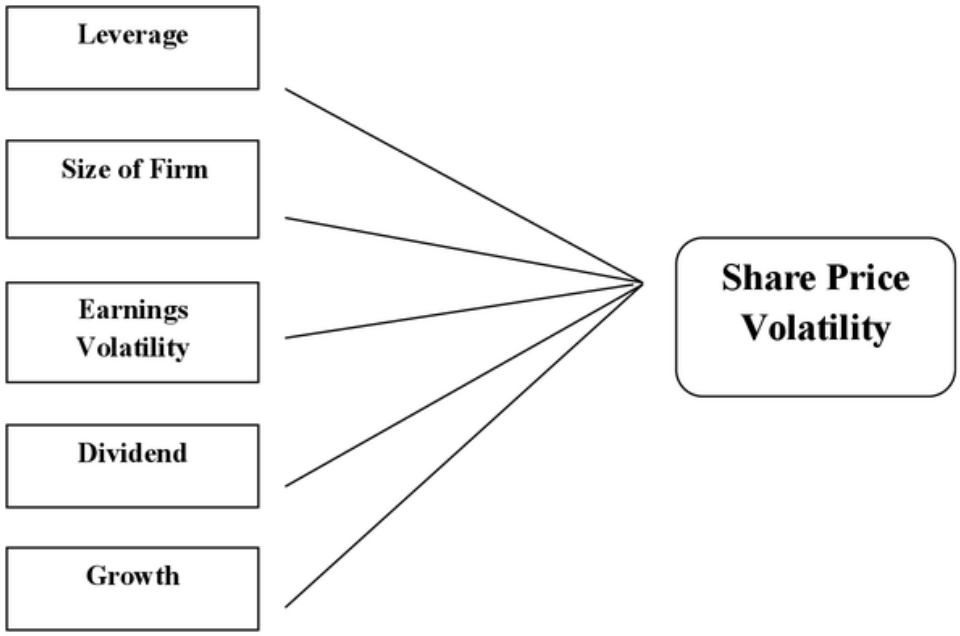
H_5= There is a positive relationship between share price volatility (SPV) and growth.

However, Rashid and Anisur Rahman, (2008) showed that growth will cause changes to the share price and dividend policy. The relationship between

growth and share price is positive but indirectly. However, there are negatively correlated between growth and dividend policy. Growth can be indirectly influence share price due to it could have inverse impact on dividend policy which could affect share price.

2.4 Proposed theoretical framework

Independent Variable



2.5 Conclusion

In this chapter we have explained the relationship amongst all the independent variable to share price volatility and the theoretical models, by reviewing previous researchers' studies. Other than that we have proposed theoretical framework, and

developed hypothesis. Next, we will talk about the research methodology that we apply in our study.

CHAPTER 3: METHODOLOGY

3.0 Introduction

In this chapter, we are going to talk about the research methodology that we apply in our study. We used the secondary data as the resource of our research. We will talk more details of the method of research design, data collection, data processing and data analysis in this chapter.

3.1Research Design

Research design plays an important role in our study, it assists us in guiding the direction of research. It essentially helps in the entire progress, from exploring issue, understanding phenomena, to answering question. We are using the quantitative research. Quantitative research is a tool that we used to examine the relationship between independent variables (Leverage, Size, Earnings Volatility, Dividend payout ratio, and Growth) and dependent variable (Share price volatility).

Newman and Benz (1998) mentioned that the decision regarding the type of data collect, and how to process them after collecting, ought to be dictated by the research question. The research questions of our study require more randomization (less epistemology), emphasis on methodology, procedure and valid and reliable measure (sample obtained generally from the population), and therefore quantitative method is more suitable. Besides, quantitative method relies on the measurement and analysis of statistical data in order to make quantifiable conclusion.

The advantage of using quantitative method is better differentiating in terms of characteristics, elemental properties and empirical boundaries and frequency (Nau, 1995). In addition, quantitative research design is always a concern to determine the

truth-value of the proposal and allow flexibility in the treatment of data, for instances comparative analysis, statistical analysis and repeatability and collect data to verify the reliability.

3.2 Sampling Design

3.2.1 Target Population

Kitchenham and Pfleeger (2002) mentioned that a target population is individuals or a group who can answer the survey questions. In addition the target population should be represented by a finite representing subset. In this study, our target population will be the consumer product sector in Malaysia. The target population (consumer product sector in Malaysia) is 132 companies, and we selected 62 companies as the represented sample. The 62 companies are selected because they have the full set of data from 2005 to 2010. 62 companies that we have chosen are used to examine the relationship between independent variables (Leverage, Size, Earnings Volatility, Dividend payout ratio, and Growth) and dependent variable (Share price volatility).

3.2.2 Sampling Technique

Sampling method can be categorized in two major types which are the probability sampling method and non-probability sampling method, in probability sampling method, every population has a known, nonzero probability of being selected (McDaniel & Gates, 2001). In our research, the sampling technique that we use is the Electronic Views which is also known as EViews. We use EView software to run the regression analysis. The data is sub-divided to three crisis stages, which are pre crisis (2005-2006), during crisis (2007-2008) and post crisis (2009-2010). According to Lane (2012), the global economic crisis began in August 2007 and the effects last long until year 2010.

3.2.3 Sampling size

Sampling is the subset of the target population and also known as the representative. The sample size should be big enough in order to have a high likelihood of detecting a true difference between two groups (Mondofacto, 2010). 62 companies are used in our measurement on how independent variables influence firm performance to obtain the data.

3.3 Data Collection Method

There are five (5) independent variables to be examined in this research which are Leverage, Size, Earnings Volatility, Dividend payout ratio, and Growth. Besides, we will be going to examine the effect of high leveraged and low leveraged company based on median value of debt. We obtained the data from the Datastream located at Universiti Tunku Abdul Rahman (UTAR) library and we also obtained the Annual Financial Reports from Bursa Malaysia for 132 companies. We observed the sample from year 2005 until 2010 in order to capture the pre-crisis, during crisis and post-crisis effect. Initially we collected data for 132 listed companies in the main market of consumer product sector, but after filtering those missing value/ data we only select 62 companies out as sample. Consequently, there are 70 companies in the main market of consumer product sector had been eliminated from this study. This is because the 70 companies that have been eliminated do not have full set of data and value from year 2005 to 2010.

3.3.1 Secondary Data

According to Smith (2008), secondary data can cover the entire spectrum of empirical form. There are many ways to obtain the secondary data, for examples through systematic study, via documentary analysis and the results of large-scale datasets. Secondary data can be divided into two types which are numeric and non-numeric. In order to undergo this research, literature review is required. We concentrate to study in several specific areas of independent variables

(Leverage, Size, Earnings Volatility, Dividend payout ratio, and Growth), dependent variables (share price volatility), and theories (Pecking-order theory and Trade-off theory). The main sources of secondary data that we obtain are from Datastream, online journals, online working paper, text books, articles, companies' web pages, and Bursa Malaysia web site.

3.4 Data Processing

3.4.1Share Price Volatility

The volatility of the share price is the dependent variable for this research. According to Dennis, Sim, and Thurston (1999), there will be a negative impact on the share price volatility and share price due to the effect of leverage. Fluctuation on the share price is defined as a proxy of risk in investment (Schwert, 1990). According to Habib, Kiani, and Khan (2012), the annual adjusted share price is collected from Data Stream and calculates the range of share price. By following Hussainey et al. (2011), share price fluctuation is derived from square the average of highest and lowest share price value. In contrast, Schwert (1990) use standard deviation as statistical measure to test on the volatility of the share price. He applies the daily share price on Dow Jones composite portfolio from January 1928 until December 1987 to investigate the fluctuation on the stock price through daily standard deviations. In accordance to Krainer (2002), method of using standard deviations to determine on the share price fluctuation is a common method that used by researchers. Mutual thesis exists to Pryymachenko (2003), the volatility of the share price could be determined with the historical data.

Based on the Pryymachenko (2003), the data of the previous share price can be used to estimate on the fluctuation of the share price. Standard deviation is referring to variation of a set of data from mean. Variation is also known as dispersion which represents the difference between the actual share prices with the average share price. Also, it can be found through the square root of

variance. If the dispersion large meaning the standard deviation is high and lead to high volatility of the share price. It also means that the risk is higher. In our study, we measure stock price volatility by using average of the highest and lowest share price and square it (Parkinson, 1980).

$$\text{Share price volatility} = \left(\frac{HSP + LSP}{2}\right)^2$$

HSP = Highest share price

LSP = Lowest share price

3.4.2 Debt

According to Iqbal, Hameed, and Ramzan (2012), book leverage is one of the ways use to analyze the debt. It is also known as debt-to-assets ratio or debt ratio. Debt ratio is defined as total debts divided by the total assets (Byrd & Mizruchi, 2003). Long term liabilities and current liabilities are sum up as total debt to determine the debt ratio. We can straightforward get the annual data of total debt and total assets of those firms from Data Stream. In contrast, Nazir et al. (2010) implies debt–to-assets ratio for testing the impact of debt to the volatility of the share price. There is a positive correlation between debt and share price volatility as the finding in the research. Moreover, Schwert (1989) found that debt levels could be significantly and positively influence the fluctuation on the share price due to financial leverage theory prediction. Therefore, when debt increases, the volatility of the share price will increase. For this thesis, we apply Debt ratio that is total debt divided by total assets.

$$Debt\ ratio = \frac{TD_i}{TA_i}$$

TD: Total debt for the end of year *i*

TA: Total assets for the end of year *i*

i could be from year 2005 to 2010

Based on Nazir et al. (2010), the higher the debt ratio represent that the amount of debt larger than the amount of total assets. In the other words, it means that people need to use more money to make profit as the ratio is higher. It will also

cause higher risk of bankruptcy of the firms and tend to higher fluctuation on the movement of the share price.

H_0 = There is no relationship between share price volatility (SPV) and leverage (LEV).

H_1= There is a relationship between share price volatility (SPV) and leverage (LEV).

Decisions: reject H_0 if significant level less than 10 percent, otherwise do not reject H_0.

Reject H_0 indicate that there is a relationship between leverage (LEV) and share price volatility (SPV)

Grouard, Levy, and Lubochinsky (2003) found that the amount of debt will directly affect the volatility of the share price. When the debts increase, there will be a conversely movement on the share price

3.4.3 Size of Firm

Karathanassis and Philiappas (1988) found that size of firm is one of the control variables that strongly correlated between independent variable and dependent variable. Karathanassis and Philiappas (1988) stated that there is a significant relationship between size of firm and stock price volatility. Size of firm can be in terms of small, medium and large that measured by total assets of the firm.

Allen and Rachim (1996) showed that there is a negative relationship between firm size and stock price volatility. Besides that, larger firms have larger profit and stock prices of larger firms are stable. In fact, they have lower risk and better performance in risk diversification. It led to lower stock price volatility while compared with smaller firms. Firm size is computed by using natural log of total sales (Majumdar, 1997). We measure firm size based on natural logarithm of total sales.

$$\text{Size} = \log(\textbf{Total Sales})$$

According to Zakaria (2012), the bigger the size of firm, the company will more likely involve in stock price volatility. Besides that, Beedles (1988) also found that bigger firms have more liquidity which affects investors' decision on their own investment activities. Furthermore, according to Byrd and Mizruchi (2003), larger firms have lower chances to face bankruptcy and have higher opportunities to involve in debt and equity market. Therefore, they are less relying on financial intermediaries to finance their debt obligations. In addition, since larger firms have potential to perform better in their management, the threat of bankruptcy also getting lower (Berge, 1997). This issue makes the company shares getting more attractive as well as size of firm increases.

H_0 = There is no relationship between share price volatility (SPV) and size of firm (SZ).

H_2= There is a relationship between share price volatility (SPV) and size of firm (SZ).

Decisions: reject H_0 if significant level less than 10 percent, otherwise do not reject H_0.

Reject H_0 indicate that there is a relationship between share price volatility (SPV) and size of firm (SZ).

There have impact on share price volatility due to the size of firm because the larger firm have more ability to diversify the risk in their investment activity (Hashemijoo , Ardekani, Younesi, 2012). They also explained that the abilities of collecting information and liquidity in cash flow of the larger size of firms are possible better than smaller size of firms. Therefore, the fluctuation of the larger firm will be bigger

3.4.4Earning Volatility

According to Hossain and Ayub (2012), earning volatility is used to estimate business risk of the company. Nishat and Irfan (2001) found that earning volatility has correlation with stock price fluctuation. Besides that, Allen and

Rachim (1996) suggested that there is a positive relationship between stock price volatility and earning volatility because increase in earnings volatility will cause higher stock price fluctuation. We use ROA, Return on Assets as a proxy for earning volatility which proposed by Booth et al. (2001).

$$\text{ROA} = \frac{EBIT}{Total\ ASSET}$$

When firms have high earning volatilities indicate the firms will have higher risk. When earnings levels of firms are not able to cover the debt, they have to reallocate their sources of fund to settle the payment of debt or involve in bankruptcy. However, during financial crisis, firms with high earning volatility will prefer finance their debt through equity rather than borrow money from financial intermediaries. The reason is the firms can choose to give dividend payment through finance by equity for this period (Niu, 2008).

H_0 = There is no relationship between share price volatility (SPV) and earnings volatility (EV).

H_3= There is a relationship between share price volatility (SPV) and earnings volatility (EV).

Decisions: reject H_0 if significant level less than 10 percent, otherwise do not reject H_0.

Reject H_0 indicate that there is a relationship between share price volatility (SPV) and earnings volatility (EV).

According to Hussainey et al (2010), earnings volatility will have positive impact on movement the share price. Thus, the higher earnings volatility, the higher is the share price volatility.

3.4.5 Dividend Payout Ratio

Dividend payout ratio is used to test on the impact of dividend policy on the volatility of the share price (Zakaria et al, 2012; Nazir et al, 2010). It is also one

of the ratios used to determine the profitability of the firms. Dividend payout ratio is calculated by dividend per share divided by earnings per share.

According to Jecheche (2012), there is a negative impact on growth with dividend policy. Dividend payout will deduce the opportunity of growth in a firm because firms need to keep some of the net income which is known as retained earnings for the reinvestment purpose. Therefore, amount of dividend payout will affect the growth opportunity of the firms directly. Besides that, there is a relationship between leverage and dividend payout due to asymmetric information (Hashemijoo et al, 2012). For this thesis, we measure dividend payout based on dividend per share divided by earning per share.

$$DPR = \frac{DPS}{EPS}$$

DPR: dividend payout ratio

DPS: dividend per share

EPS: earnings per share

i: from year 2005 to year 2010

High dividend payout ratio means the firms pay more on the dividend and save less for the retained earnings. It will cause the firms' opportunity to grow and investment decreases (Habib et al, 2012). Besides that, there may occur agency problems in dividend payout of the firms. There will be a problem if the dividend payout ratio is too low. Shareholders think that dividend payout is a signal of a company's wealth (Habib et al, 2012). When the dividend payout ratio is too low, shareholders think that there is a negative signal and sell off the shares and lead to decreases of the share price. Therefore, the dividend payout ratio should not be too high or too low.

H_0 = There is no relationship between share price volatility (SPV) and dividend payout ratio (DPR).

H_4= There is a relationship between share price volatility (SPV) and dividend payout ratio (DPR).

Decisions: reject H_0 if significant level less than 10 percent, otherwise do not reject H_0.

Reject H_0 indicate that there is a relationship between share price volatility (SPV) and dividend payout ratio (DPR).

According to Habib, Kiani, and Khan (2012) there is negative correlation between dividend payout ratio and share price volatility. In the other words, the share price will be decrease as the dividend payout ratio increase.

3.4.6 Growth

According to Harris and Maston (1994), growth plays an important role in explaining market to book ratio. They also found that there is a relationship between the beta of stock and market to book ratio. Besides that, Varaiya, Kerin, and Weeks (1987) shows that market to book ratio is used to measure firm's performance which in term of both efficiency and growth.

We use market to book ratio to measure growth which proposed by Adjaoud and Ben Amar (2010). Market to book ratio is calculated as market value of equity divided by book value of equity. Besides that, market to book ratio can be used as proxy for future investment opportunities. When there is higher market to book ratio, it indicates that higher growth opportunities which means that more efficient in holding cash in hand for the next investment.

$$\text{Market to book ratio} = \frac{Market\ Value\ of\ equity}{Book\ value\ of\ equity}$$

H_0 = There is no relationship between share price volatility (SPV) and growth.

H_5= There is a relationship between share price volatility (SPV) and growth.

Decisions: reject H_0 if significant level less than 10 percent, otherwise do not reject H_0.

Reject H_0 indicate that there is a relationship between share price volatility (SPV) and growth.

However, Rashid and Anisur Rahman, (2008) showed that growth will cause changes to the share price and dividend policy. The relationship between growth and share price is positive but indirectly. However, there are negatively correlated between growth and dividend policy. Growth can be indirectly influence share price due to it could be has inverse impact on dividend policy which could affect share price

3.5 Data Analysis

3.5.1 Multiple Regressions

Multiple regression is a statistical technique which allows people to learn more and predict about the relationship between several variables in the independent variables and dependent variable. The independent variables are size, earnings, volatility, leverage, growth, dividend payout, high leverage and low leverage while the dependent variable is share price volatility. In multiple regressions, the estimates of unknown parameters are the best which obtained from linear least square regression but multiple regression is very sensitive to the outliers and the linear model in multiple regression has shapes limitations.

According to Schmidheiny (2012), in fixed effects model, the individual specific effect considered as a random variable which will correlate with explanatory variables while for random effects model is a random variable which is uncorrelated with explanatory variables. Schmidheiny (2012) mentioned that the random effects model is more consistently estimated than the fixed effects model. If the individual specific effect is an unrelated effect, examiner will prefer to use random effects models and the test used is Hausman test. On the other hand, Hausman test just can be used when there is homoscedasticity and it cannot include any time fixed effects. According to Clarke et al. (2010), random effects estimator is used if there is uncorrelated effect with the explanatory variables.

3.5.2 Panel Data

According to Li, Peng, and Tong (2013), panel data is an individual's sample which follows over time and for each of the individual in the sample, it gives a multiple observations. Besides that, panel data consists of two difference scales which are time-series and cross sectional. Recently, panel data analysis is more famous with the validity of increasing. Moreover, according to Shao, Xiao, and Xu (2011), panel data or longitudinal data are converged from sample subject which includes research areas such as the population health, economics, sample surveys and others. Panel means the variable data in panel has two dimensional which are individual index (i) and time (t) (Kunst, 2010). Furthermore, Kunst (2010) mentioned that panel data is better than simple time series and cross-sections because it is more informative as follow historical.

Hsiao (2003) examined that panel data followed sample of individuals over time so that the multiple observations were based on individual sample. Panel data is differentiated into two effects which are fixed effects and random effects. Fixed effects models also known as analysis-of-variance model which includes least-squares dummy variable (LSDV) approach while random effects models include covariance estimation, generalized least squares (GLS) estimation and maximum likelihood estimation. Regression model able to evaluate the quantitative factors, analysis-of-variance model evaluate qualitative factors and analysis-of-covariance model evaluate both of the quantitative and qualitative factors. Based on Gujarati and Porter (2009, p.612), the advantages of using panel data are increase sample size relatively, suitable use for dynamics of change by repeating the observations of cross-sectional and it can examine more sophisticated behavioural models.

3.5.3 Hausman test

According to Baltagi and Liu (2007), Hausman test is based on the contrast between fixed effects (FE) and random effects (RE) estimators which are tested in the panel data. The advantage of using Hausman test is it can make the heteroscedasticity of unknown form become stronger. Hausman test is used to

evaluate the significance of an estimator and it helps to evaluate if a statistical model is correspondent. If there is significant, accept the null hypothesis, while if there is not significant, reject the null hypothesis which means one or both of the estimators is inconsistent. If fail to reject the null hypothesis, it means that FE and RE estimates are very close to each other or it means that the sampling variation is very large in the FE estimates. According to Perlman and Wu (2003), maximum likelihood estimator is inappropriate not because of the performance under Neyman-Pearson criterion, but is because of the wrong inferences in certain regions of the sample space and the different dimensions in the composite hypothesis. According to Chmelarova and Hill (2010) and Hahn, Ham, and Moon (2011), if $\alpha < 10\%$, that is significant level, it known as fixed effect and accept the Ho. In contrast, when $\alpha > 10\%$, that is insignificant level also known as random effect and reject the Ho.

H_0 = Random Effect Model (REM) are consistent and efficient

H_1 =Fixed Effect Model (FEM) will be consistent and efficient

Decision:reject H_0 if significant level of Hausman test is less than 10 percent, otherwise do not reject H_0.

3.5.4 Multicollinearity

Gujarati and Porter (2009, p.321) provide that multicollinearity is referring to some or all independent variables of a regression model have linear relationship among themselves. Multicollinearity can happen either in time series data, cross-sectional data or panel data. To know whether the regression model contains multicollinearity, Variance Inflation Factor (VIF) is used. Variance Inflation Factor is the method to measure the degree of multicollinearity in a regression model.

The formula of Variance Inflation factor is as below:

Variance Inflation Factor, $VIF_{X1, X2}$

$$\frac{1}{1 - R^2}$$

If VIF is undefined, there is perfect multicollinearity. If VIF equals to 1, there is no multicollinearity. If VIF is defined, there is imperfect multicollinearity. In the case of VIF is defined (imperfect multicollinearity), VIF can be categorized into two situation, VIF more than or equals to 10 means there is serious and high multicollinearity. Whereas VIF between 1 and 10 means the multicollinearity is not serious and it is also known as low multicollinearity. Multicollinearity can be solved by increasing the sample size, redesign the model, eliminate an explanatory variable or combine the explanatory variables that have relationship. A correlation which above 90 percent is indicates there is collinearity between two variables (Hair, 1998).

3.5.5 Autocorrelation

Autocorrelation exists when there is correlation or relationship among the error terms. To detect on autocorrelation, Durbin-Watson test is used. This test is proposed by Durbin and Watson. Breusch-Godfrey LM Test is also used to test the autocorrelation. The null hypothesis is there is no autocorrelation in the model. The alternative hypothesis is there is an autocorrelation in the model. According to Prusty (2010, p.55), Durbin-Watson Test between 1.4 and 2.6 indicates no autocorrelation problem.

H_0: There is no autocorrelation problem.

H_1: There is an autocorrelation problem.

Decision: Do not reject H_0 when Durbin-Watson Test is between 1.4 and 2.6. Durbin- Watson Test between 1.0 and 1.4 is inconclusive.

3.5.6 Heteroscedasticity

Heteroscedasticity exists when the variance of the error terms in a model are not constant. The reported results are adjusted for cross-section SUR (PCSE) Standard Errors & Covariance estimator to correct the heteroscedasticity problem. By using Eviews, we can control heteroscedasticity problem.

3.5.7 Normality

The normality test can be done using Jarque-Bera test. The null hypothesis is the error term is normally distributed whereas the alternative hypothesis is the error term is not normally distributed. Compute the test statistics using the formula as stated below:

$$JB = \frac{n}{6}\left[S^2 + \frac{1}{4}(K-3)^2\right]$$

Where S = skewness K = Kurtosis n = sample size

Compute the critical value. Then, conclude whether the error term is normal. To more precisely and accurately on the result, Eviews must be used to run on the Jarque-Bera test.

H_0 = The error terms are normally distributed.

H_1 = The error terms are not normally distributed.

Decision: If p-value less than 0.10, H_0 is rejected. Otherwise, do not reject H_0.

According to Gujarati and Porter (2009, p.340), Central Limit Theorem (CLT), when the sample size is big enough which is more than 100 observations, the error terms are assumed to be normally distributed.

3.6 Conclusion

Data that is required will be collected and we will use SPSS or Eview to run and analyze the data and the result will be shown in chapter 4.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

In this chapter we will be going to discuss the results and interpret them. 62 consumer product companies in Malaysia have been chosen as our sample. We obtain the data from datastream in Universiti Tunku Abdul Rahman. The duration of the data is from year 2005 until 2010. Furthermore, in this chapter we will cover the descriptive analysis, normality test, multicollinearity test, autocorrelation test, unit root test, Hausman Test, empirical results, and period of crisis.

Result and Discussion

4.1 Descriptive analysis

Table 6: Summary Descriptive Statistic of All Variable

Sample firms: N=62 No. of Observation: 372	Mean	Median	Max	Min	Std. Dev.	Skewness	Kurtosis
SPV	23.58	0.57	1506.22	0.007	120.34	8.36	83.98
LEV	0.25	0.20	4.07	0.000	0.31	7.16	81.05
SZ	5.26	5.19	7.06	4.23	0.51	0.72	3.34
EV	0.07	0.06	0.46	-0.35	0.08	-0.13	6.52
DPR	0.23	0.19	3.50	-18.00	1.18	-11.51	168.39
GROWTH	1.37	0.80	18.40	-1.54	2.06	4.71	30.06

Note 1: The duration of sample firms' panel data is six years, from year 2005 until 2010. Number of firm=62 firms, Number of panel data observation for six years=372; the followings are denotes for Independent Variables LEV=Debt ratio, SZ= Size of firm, EV=Earnings Volatility, DPR= Dividend payout ratio, and GROWTH=Market-to-book Ratio. Dependent Variable=Share Price Volatility (SPV).

Based on the result that we obtained from Table 6, Share Price Volatility (SPV) has the minimum of 0.007 and has the maximum 1506.22. The Share Price Volatility has a mean of 23.58 and a standard deviation 120.34. According to Sadorsky (2012), they analyze share price volatility from oil market, clean energy companies, and technologies companies. They obtain sample data of dollar weighted index of 54 companies. The daily closing prices of Wilderhill Clean Energy Index (ECO) has minimum of -14.47 , maximum of 14.52 , mean of -0.023 and standard deviation 2.193. The NYSE Arca Technology Index (PSE) has minimum of –8.12 , maximum of 10.84 , mean of 0.029 and standard deviation 1.629.While the nearest contract to maturity on the West Texas Intermediate crude oil futures contract (OIL) has minimum of –16.55 , maximum of 16.41 , mean of 0.047 and standard deviation 2.50.

Based on the result that we obtained from Table 6, Debt ratio (LEV) has the minimum of 0.00 and has the maximum 4.07. The Debt ratio has a mean of 0.25 and a standard deviation 0.311028. The formula that we used to compute debt ratio is liabilities divided total asset. According to Ameer (2010) the minimum debt of their study is zero and they have a maximum debt ratio of 0.048. Besides, they have an average of 0.095 and a standard deviation of 0.11. They study on 112 firms for the period of 2003 to 2007 in the developed countries.

As we can see from the Table 6, Size of firm (SZ) has the minimum of 4.24 and has the maximum 7.06. The Size of firm has a mean of 5.27 and a standard deviation 0.52. In the finding of Chan, Chang, Huang & Huang (2011), Size of firm has the minimum size of 0.17, maximum size of 1286.93, mean of 18.01 while standard deviation is 71.36. The authors aim to investigate how corporate governance affects the share price volatility and whether will it be affected by the political crisis, they use 23 trading days from March 22 to April 21 as our research period, and they observe the movement of the share price before the Taiwan Presidential Election Day and after the day.

Next, Earning Volatility (EV) has the minimum of -0.35 and has the maximum 0.46. The Earning Volatility has a mean of -0.07 and a standard deviation 0.09. According to Dichev & Tang (2008) the Earning volatility has a minimum of -0.51 and maximum of 0.29. On the other hand the mean is 0.03 and standard deviation of 0.07. The research is to investigate the relationship between earning volatility and earnings predictability, sample that they obtained from Compustat annual industrial with the number of 22,113 firms and during year 1988 to 2004.

As the finding shown in the Table 6, Dividend payout ratio (DPR) has the minimum of -18.00 and has the maximum 3.50. The Dividend payout ratio has a mean of 0.23 and a standard deviation 1.18. As the finding of study from Kenyoru, Kundu & Kibiwott (2013) the minimum of Dividend payout ratio is -0.06 and the maximum of 2.37. The mean of Dividend payout ratio is 0.41 and standard deviation of 0.41. Their research is to study the relationship between dividend policy and share price volatility for those companies listed in Nairobi Stock Exchange, from year 1999 until 2008.

Lastly, Market-to-book Ratio (GROWTH) has the minimum of -1.54 and has the maximum 18.40. Market-to-book Ratio has a mean of 1.38 and a standard deviation 2.06. Refer the finding from Ameer (2010) Market-to-book ratio has minimum of 0.00, maximum of 6.23 , mean of 1.38 , and standard deviation of 1.12.

4.2 Normality test

Table 7: Normality Test

	Jarque-Bera	Decision
All firms (2005-2010)	14741.53***	Not normal
Pre-Crisis (2005-2006)	2303.774***	Not normal
During-Crisis (2007-2008)	240.2541***	Not normal
Post-Crisis (2009-2010)	1916.549***	Not normal
High Leverage	2033.1345***	Not normal
Low Leverage	16692.46***	Not normal

Note 1: The asterisks ***, **, and * represent significant at 1 percent, 5 percent, and 10 percent confident levels respectively.

As shown in the Table 7 above, we know that all the Jarque-Bera statistic have shown unfavourable result, which is not normal. All the results have the P-value of 0.0000. The null hypothesis of Normality Test of our study is H_0 = The residual sample is normally distributed. H_1 = The residual sample is not normally distributed. The decision rule of Normality Test is reject H_0 if the P-value lesser than $\alpha = 0.01$, otherwise do not reject. Since the P-value (0.0000) of all Jarque-Bera statistic residual samples is lesser that α (0.01), therefore reject H_0. The normality test conclusion of All firms, Pre-Crisis, During-Crisis, Post-Crisis, High Leverage and Low Leverage are not normal distribution.

In conclusion, all the residual sample normality test of the model (All firms, Pre-Crisis, During-Crisis, Post-Crisis, High-Leverage and Low Leverage) shown in Jarque-Bera statistic is not normal. Even though the result that we obtained from the Normality Test is not normal, however according to Gujarati & Porter (2009), the central limit theorem (CLT) can be applied when the average or mean is sufficiently large number of 100 observations of independent random variables, each with a well-defined variance, will be about normally distributed. Since all of the models (All firms (obs=372), Pre-Crisis (obs=124), During-Crisis (obs=124), Post-Crisis (obs=124), High-Leverage (obs=120) and Low Leverage (obs=258)) have more than 100 observations, then we assume all the model is normally distribution.

4.3 Multicollinearity

4.3.1 All Firms

Table 8: Multicollinearity of All Firms

	SPV	DR	SIZE	EV	DPR	GROWTH
SPV	1.000000					
DR	-0.066994	1.000000				

SIZE	0.374147	-0.033940	1.000000			
EV	0.320762	-0.011784	0.381413	1.000000		
DPR	0.088611	-0.055978	0.079753	0.201401	1.000000	
GROWTH	0.795425	-0.114333	0.473872	0.468938	0.120161	1.000000

VIF $= 1/(1-R^2)$

$= 1/(1- 0.888342)$

$= 8.9559189$

We detected the multicollinearity problem through the correlation analysis of E-views. According to Table 8, we conclude that every independent variables and dependent variable internal correlation to each other. However, we found that there is no multicollinearity problem in our model between all independent variables and share price volatility since all less than 90%. Besides that, the VIF is equal to 8.9559189 which less than 10. Therefore, we can conclude that there is no serious multicollinearity problem occurs in the model.

4.3.2 Pre-Crisis (2005-2006)

Table 9: Multicollinearity of Pre-Crisis

	SPV	**DR**	**SIZE**	**EV**	**DPR**	**GROWTH**
SPV	1.000000					
DR	-0.087772	1.000000				
SIZE	0.376310	0.001682	1.000000			
EV	0.327530	-0.368999	0.299907	1.000000		
DPR	0.060760	0.019906	-0.010021	0.198294	1.000000	
GROWTH	0.789416	-	0.446561	0.439053	0.079533	1.000000

		0.185104				

VIF = $1/(1-R^2)$

= 1/ (1- 0.257936)

=1.34759266

The results from Table 9 show that there do not have any multicollinearity problem among every independent variables and dependent variable when pre-crisis. The VIF for this model is 1.34759266, so it proved that there is no multicollinearity problem in the model.

4.3.3 During Crisis (2007-2008)

Table 10: Multicollinearity of During Crisis

	SPV	DR	SIZE	EV	DPR	GROWTH
SPV	1.000000					
DR	-0.137231	1.000000				
SIZE	0.407037	0.024360	1.000000			
EV	0.411963	-0.341549	0.415663	1.000000		
DPR	0.175961	-0.300130	0.238807	0.302673	1.000000	
GROWTH	0.863203	-0.190863	0.506005	0.553868	0.218675	1.000000

VIF = $1/(1-R^2)$

=1/ (1- 0.367674)

= 1.5814627

Based on the Table 10, there is no problem of multicollinearity in the model during the crisis. Since the VIF is equal to 1.5814627, there is no serious multicollinearity problem happen among independent variables and dependent variable.

4.3.4 Post Crisis (2009-2010)

Table 11: Multicollinearity of Post- Crisis

	SPV	DR	SIZE	EV	DPR	GROWTH
SPV	1.000000					
DR	-0.051298	1.000000				
SIZE	0.381895	-0.082529	1.000000			
EV	0.297779	0.229496	0.433314	1.000000		
DPR	0.278001	-0.222182	0.400336	0.410766	1.000000	
GROWTH	0.792269	-0.077818	0.490647	0.449780	0.404671	1.000000

Note 1: SPV=Share price volatility, DR=Debt ratio, SIZE=Size of Firms, EV=Earnings Volatility, DPR=Dividend payout ratio, and GROWTH= Market-to-book ratio

VIF $= 1/ (1-R^2)$

$=1/ (1- 0.542734)$

$= 2.1869109$

When post crisis, the result shown that there is no issue of multicollinearity in the model. We can conclude that there is no serious multicollinearity issue among independent variables and dependent variable since the VIF is equal to 2.1869109.

4.3.5 High Leverage

Table 12: Multicollinearity of High Leverage

	SPV	SIZE	EV	DPR	GROWTH
SPV	1.000000				
SIZE	0.464261	1.000000			
EV	0.569014	0.582979	1.000000		
DPR	0.498943	0.479072	0.541408	1.000000	
GROWTH	0.927828	0.531977	0.658737	0.544416	1.000000

VIF $= 1/(1-R^2)$

$=1/(1-0.914469)$

$= 11.691997$

Since the Growth has 92.78% which greater than 90%, so we conclude that there is a multicollinearity problem among growth and share price volatility. The VIF is 11.691997 which larger than 10. It proves that it will be serious multicollinearity problem for including Growth variable in this model. Therefore, we decide to drop growth variable in this model to avoid multicollinearity problem.

VIF $= 1/(1-R^2)$

$=1/(1-0.308075)$

$= 1.445243$

After drop the growth variable, the VIF is equal to 1.445243. As a result, we conclude that there is no multicollinearity problem after drop growth variable.

4.3.6 Low Leverage

Table 13: Multicollinearity of Low Leverage

	SPV	SIZE	EV	DPR	GROWTH
SPV	1.000000				
SIZE	0.316110	1.000000			
EV	0.303187	0.444270	1.000000		
DPR	0.075932	0.066526	0.186985	1.000000	
GROWTH	0.360732	0.484689	0.424504	0.095065	1.000000

Note 1: SPV=Share price volatility, SIZE=Size of Firms, EV=Earnings Volatility, DPR=Dividend payout ratio, and GROWTH= Market-to-book ratio

VIF $= 1/ (1-R^2)$

$=1/ (1- 0.747057)$

$= 3.953459$

According to Table 13, there is no multicollinearity problem in the model due to all variables are less than 90%. The VIF is equal to 3.953459, thus we conclude that there is no serious multicollinearity issue in the model.

4.4 Autocorrelation test

Table 14: Autocorrelation test

	Durbin-watson	First order Durbin-watson	Decision
All firms (2005-2010)	0.92	2.46	No autocorrelation
Pre-Crisis (2005-2006)	1.54		No autocorrelation
During-Crisis (2007-2008)	1.14		Inconclusive

Post-Crisis (2009-2010)	2.06		No autocorrelation
High Leverage	1.18	1.43	No Autocorrelation
Low Leverage	1.99	2.31	No autocorrelation

Note 1: The reported results are obtained from Durbin Watson Test, and it is used to test the cross-correlation amongst signals and itself (autocorrelation). Note 2: The rule of thumb of Durbin-Watson is between the ranges of 1.4 to 2.6, while if greater than 1 but lower than 1.4 and greater than 2.6 but lower than 3 are the ranges of inconclusive.

By referring the Durbin-watson result in the Table 14 most of the models have shown unfavourable result in Durbin-watson test. The models which have autocorrelation problem are All firms, During Crisis, and High Leverage. However, after detecting the autocorrelation problem we include the lag one for the error and then we test for the first order Durbin-watson test. The results for most of the model shown no existence of autocorrelation problem, exclude the During Crisis. Due to each of the Crisis periods (Pre-Crisis, During-Crisis, and Post-Crisis) has only 2 years and it is insufficient to run the first order Durbin-watson, therefore During-Crisis falls in the range of inconclusive. We cannot justify whether there is autocorrelation problem existing in During-Crisis or not. Null hypothesis is there is no autocorrelation problem; alternative autocorrelation problem is there is autocorrelation problem. Since the results do not have sufficient evident to reject null hypothesis, therefore we can conclude that there is no autocorrelation in the models. Hence, most of the model has no autocorrelation problem. In addition, Gujarati & Porter (2009) quoted that there is no perfect test for detecting the presence or structure, or both, of autocorrelation problem. So, Durbin-watson test is only a benchmark or reference for us to identify the existence of autocorrelation, this test might not be able to explain the problem well.

4.5 Unit Root Test

Table 15: Unit root test

	LLC	IPS	ADF	PPF	DECISION
ALL FIRM	-15.0178***	-22.6212***	385.919***	455.850***	Stationary
PRE-CRISIS	-17.8066***	-15.5450***	221.959***	266.465***	Stationary
DURING CRISIS	-18.6579***	-16.4300***	242.956***	256.036***	Stationary
POST CRISIS	-14.2422***	-12.8096***	176.780***	192.264***	Stationary
HIGH	-8.57416***	-8.62921***	88.4891***	90.1361***	Stationary
LOW	-13.8917***	-18.3818***	270.181***	311.237***	Stationary

Note 1: LLC=Levin, Lin &Chu t*, IPS=Im, Pesaran and Shin W-stat, ADF=ADF-Fisher Chi-square, and PPF=PP-Fisher Chi-square. Note 2: The asterisks ***, **, and * represent significant at 1 percent, 5 percent, and 10 percent confident levels respectively.

According to Table 15, all the independent variables and dependent variable show stationary since the p-value is significant at level of 1%. The results also show that all independent variables and dependent variable are significant at level 1% when pre-crisis, during crisis, and post crisis. Therefore, we can conclude that the model is stationary in all situations at significant level of 1%.

4.6 Hausman Test

Table 16: Hausman test

	Hausman	Decision
All firms (2005-2010)	30.950954***	Fixed
Pre-Crisis (2005-2006)	60.919828***	Fixed
During-Crisis (2007-2008)	126.387195***	Fixed
Post-Crisis (2009-2010)	8.594625	Random
High Leverage	5.137431	Random

Low Leverage	40.392863***	Fixed

Note 2: The asterisks ***, **, and * represent significant at 1 percent, 5 percent, and 10 percent confident levels respectively.

H_0 = Random Effect Model (REM) are consistent and efficient

H_1 =Fixed Effect Model (FEM) will be consistent and efficient

Hausman test are use to detect that whether REM or FEM are appropriate and reliable for the model. We will reject the null hypothesis if the p-value is less than 0.05 (p-value < 0.05) and conclude that REM is not suitable for the model. Therefore, FEM will be the better choice for the model if null hypothesis is rejected. If p-value is insignificant at the level of 5%, we accept the null hypothesis and conclude that REM is more fitting in the model.

According to Table 16, all firm, pre-crisis, during crisis, and low leverage have significant value of Hausman test at 1%, thus we conclude that fixed effect is better. However for post crisis and high leverage sample insignificant, hence appropriate to use random effect.

4.7 Empirical results

4.7.1 Linear Regression of All Firms

In this Model estimation we use Panel Least Squares (PLS) method of estimator to estimate the panel data regression formed.

Dependent Variable: Share Price Volatility

Table 17: Linear regression of all firms

Model	Coefficient	t-test	Standard error
C	24.12	0.68	35.63
LEV	-7.58	-0.75	10.05
SZ	-5.58	-0.82	6.79
EV	-26.09*	-1.81	14.43
DPR	0.16	0.82	0.19

GROWTH	23.61***	3.41	6.93
R^2	0.89		
$\bar{R}^2$	0.86		
F-statistic	36.76***		
Hausman	Chi-Square= 30.95***		
DW	0.92		

Note 1: The reported results are adjusted for Cross-Section SUR(PCSE) standard errors & covariance estimator to correct the heteroskedasticity problem. Note 2: The asterisks ***, **, and * represent significant at 1 percent, 5 percent, and 10 percent confident levels respectively. Note 3: The followings are denotes for Independent Variables LEV= Debt ratio, SZ= Size of firm, EV= Earnings Volatility, DPR= Dividend payout ratio, and GROWTH= Market-to-book Ratio.

As shown in the Table 17 above, by apply Fixed effect model the Lev (debt ratio) has negative related to share price volatility and insignificant. The coefficient of leverage (LEV) is -7.58, which indicated that for every 1 percent of leverage increase will be resulting 7.58 percent of share price volatility to decrease, on average. In fact, from the study of Agrawal and Knoeber (1996) they discovered no relationship between leverage and firms' value, this is because there is no effect of insider shareholding, the firm's debts and activity in the market for corporate control, exclude external effects on the board. The reason why the leverage is insignificant, it is because of the different countries might have different culture. As we observed, the previous studies (eg: Mohamad, S., & Nassir, A. M. (1993) and Zakaria, et al (2012)) which are conducted in Malaysia have similar findings with us.

The firm size (SZ) has statistically insignificant in the model. There is a negative relationship between size and share price volatility. The coefficient for this independent variable is -5.58, and this indicate us that on average, every 1percent of size increase will have 5.58 percent of share price volatility. The result of firm size is confirmed with the Trade-off theory, the smaller the firm size the greater the share price volatility. However, it is insignificant this may due to the extreme values incur in the data.

Earning volatility (EV) is inversely correlated to the share price volatility and significant at 10 percent significant level. Other than that, the coefficient of earning volatility is -26.09. The result shows us that every 1 percent increase in earnings volatility will decrease 26.09 percent in share price volatility, on average. Although the result is not tally with the theory but the result is significant to explain the share price volatility, the rationale behind might be the moral hazard effect. The investors overconfident and willing to take more risks ignore the negative information.

Dividend payout ratio (DPR) has positive relationship to share price volatility and it is insignificant. The coefficient value of dividend payout ratio is 0.16. Therefore, for every 1 percent increment in dividend payout ratio will have 0.16 percent boost up in share price volatility, on average. The dividend payout ratio is not significant to explain the share price volatility; it might be due to investors do not so much relying on the signal from the dividend payout.

Firm growth (GROWTH) has positive impact to share price volatility and it has statistically significant at significant level of 1 percent. Therefore, the coefficient value of growth is 23.61, which means that every 1 percent increase in growth will have 23.61 increases in share price volatility, generally. According to Rashid and Anisur Rahman, (2008) growth will be lead to the changes of the share price and dividend policy and then the impact is positive but indirectly. The author explained the growth has positive but indirect effect to share price volatility might because of it has negative impact on dividend policy which could affect share price.

Besides, the constant of the model is positively correlated to share price volatility but insignificant. The coefficient value of the constant is 24.12. This indicated that if every independent variable held constant, the minimum share price volatility will be 24.12 percent.

The coefficient of determinant (R^2) of the model shown in Table 17 is 89 percent. The coefficient of determinant is used to evaluate the degree of correlation between dependent variable and independent variables. The rule of thumb of the range is between -1 to 1. This means the model has very close to 1, therefore it has very high correctness to explain the share price volatility.

In order to be more accurate to examine whether this model is suitable in explaining the dependent variable of our study (share price volatility), we also examine the adjusted R-squared ($\bar{R}^2$). As shown in the Table 17, we identify that the adjusted R-squared is 86 percent. As a conclusion for he adjusted R-squared has very high accuracy in explaining the share price volatility.

4.7.2 Period of Crisis

Table 18: Period of Crisis

MODEL	PRE-CRISIS (2005-2006)	DURING CRISIS (2007-2008)	POST CRISIS (2009-2010)
(Constant)	-106.0884 (41.62736)	-149.6149 (39.23093)	24.56782 (97.29235)
LEV	-1.017194 (15.82019)	-7.330333 (5.374090)	1.195305 (9.837064)
SZ	20.93090*** (8.050148)	30.08893*** (7.317749)	-13.65268 (19.08307)
EV	1.597435 (13.21621)	10.22336 (18.65494)	-55.96389 (55.21643)
DPR	-0.004793 (0.355071)	1.392579 (1.416610)	3.560799 (8.778346)
GROWTH	8.435415*** (1.260089)	10.26142*** (0.971103)	57.79305*** (57.79360)
R^2	0.257936	0.367674	0.542734
$\bar{R}^2$	0.226492	0.340880	0.523358
F-statistics	8.203178***	13.72251***	28.01106***
Hausman test	Chi-squared =60.919828	Chi-squared =126.387195	Chi-squared =8.594625
DW	1.536134	1.138243	2.060233

Note 1: The asterisks ***, **, and * represent significant at 1 percent, 5 percent, and 10 percent confident levels respectively.

4.7.2.1 Leverage

Based on Hausman Test, pre-crisis and during-crisis is more suitable to apply fixed effect model, and post-crisis is more suitable for random effect model. There is a negative and insignificant correlation between the share price volatility (SPV) and leverage (LEV). When pre-crisis, the coefficient of leverage is -1.017194 which mean that every 1% increase on the leverage (debt), share price volatility will decrease 101.72% on average. Then, coefficient of the leverage during the crisis is -7.330333. In the other words, every 1% increase in leverage will lead share price to decline for 733.03% on average. However, when post crisis there is a positive but insignificant relationship between debt and fluctuation of the share price. Leverage has the coefficient of 1.195305 which represent that for every 1% increase on debt will cause share price volatility increase 119.53% on average. Hence, it shows that the economic condition does not influence the consumer product companies share price volatility through incur in high and low leverage.

4.7.2.2 Size of Firm

There is a positive and significant relationship between size of firm (SZ) and share price volatility (SV) for the pre-crisis and during crisis. The coefficient of size of firm when pre-crisis is 20.93090. Other than that size of firm in during-crisis has coefficient of 30.08893which mean that the larger the size the higher share price volatility in pre-crisis and during-crisis. This shows that the problem incur resulted from crisis has high impact on large firm. Conversely, size of firm has negative and insignificant impact to share price volatility when post crisis. Moreover, size of firm with coefficient of -13.65268 means that an increase in firm size will result in an increase in share price volatility. This might because of the pre-crisis and during-crisis, company might encounter a lot of problems; therefore it could result in high share price volatility. Meanwhile, for post-crisis the problem might be decrease due to company have better management so less fluctuate in share price volatility.

4.7.2.3 Earnings Volatility

Next, independent variable of earning volatility (EV) positively but insignificantly affect the fluctuation of the share price when pre crisis and during the crisis. The Tables 18 shown that coefficient of earnings volatility are 1.597435 for pre-crisis and 10.22336 during the crisis. For any increment on the earning volatility, share price volatility will increase during the crisis. This finding indicated that regardless of the signalling of surprise from the earning volatility, investor may not be reacted according to it. Therefore earning volatility is positive but insignificant relevant to share price volatility. On the other hand, the coefficient of the post crisis earnings volatility is -55.96389. The result has shown that the post crisis earnings volatility is negatively and insignificantly impact to the fluctuation of the share price. That's mean increase in earnings volatility of post crisis, the share price volatility will decrease. This might be explained that after the crisis investor tend to ignore the earning volatility signal when investment decision making. As a conclusion, the earnings volatility variable is insignificant affecting the share price volatility for the three periods.

4.7.2.4 Dividend Payout

Dividend payout (DPR) will be negatively and insignificantly affect the share price volatility during pre-crisis. We found that dividend payout had coefficient of -0.004793 which mean that for every 1% increase in the dividend payout, the share price volatility will decrease 0.48% on average. During crisis and post crisis, dividend payout will has positive but insignificant impact on the share price volatility. The coefficient for during crisis is 1.392579 and 3.560799 for post crisis. Based on the finding, we can interpret that an increase in dividend payout will result in an increase in share price volatility. The dividend payout policy is insignificant when pre-crisis, during crisis, and post crisis due to different industry in different country has slightly different dividend payout policy. According to Rashid et al (2008), some countries may be shareholder

wealth maximization thus the dividend payout policy will be significant on affecting the share price volatility.

4.7.2.5 Growth

Based on the Table 18, we found that growth is significant and positively affecting the share price volatility for those three periods. The coefficient for pre-crisis, during crisis, and post crisis are 8.435415, 10.26142, and 57.79305. For every 1% raise on the growth, share price volatility will increase 843.54% on average when pre-crisis. During crisis, every 1% increase on growth, share price volatility will rise for 1026.14% on average. Every 1% increase in growth will lead share price volatility to increase for 5779.31% on average when post crisis. This shows that when company increase in investment (growth) they may incur in high risk, thus it could resulted the company share price have high volatile.

4.7.2.6 R^2

According to Table 18, the coefficients of determinants (R^2) when pre-crisis and during crisis are quite low which are 0.257936 and 0.367674. Thus, we conclude that there is quite low correctness to explain on the share price volatility. While the coefficient of determinants when post crisis is 0.542734. Hence, there is quite stable correctness to explain on the share price volatility.

F-Statistics

As shown in Table 18, we conclude that all models are significant at 1% when pre-crisis, during crisis, and post crisis.

4.7.3 High Leverage and Low Leverage

Table 19: High leverage and low leverage

MODEL	LOW LEVERAGE	HIGH LEVERAGE
(Constant)	-46.94905	-361.1237

	(20.95802)	(182.4440)
SZ	10.04389** (4.309264)	58.98293* (34.97721)
EV	22.24784** (9.098344)	845.9057*** (179.9765)
DPR	5.661801* (5.661801)	125.6844** (55.40724)
GROWTH	2.020235* (1.048671)	- -
R^2	0.747057	0.308075
$\bar{R}^2$	0.691385	0.289541
F-statistics	13.41896***	16.62241***
Hausman test	Chi-squared =40.394823***	Chi-squared =5.137431
DW	1.985719	1.179790

Note 1: The asterisks ***, **, and * represent significant at 1 percent, 5 percent, and 10 percent confident levels respectively.

4.7.3.1 Size of Firm

Based on the Table 19, the result for low leverage is more suitable using fixed effect model while high leverage more suitable for random effect model. Result shows that size of firm has positive and significant relationship with share price volatility for low leverage level and high leverage. The coefficient for low leverage and high leverage are 10.04389 which significant at 5%; and 58.98293 which significant at level of 10%. This indicates that an increase in both high leverage and low leverage will cause the share price volatility increase. The size of firm variable is

estimated to be significant correlated to share price volatility because larger firm may involve in many investment which could affect the movement of the share price. In the other words, the amount of the investment involve will affect the share price. A good and potential investment will lead the share price increase, but a riskier investment may lead to the decline on the share price. The larger the firms will involve more long term investments activities so the fluctuation on the share price will increase.

4.7.3.2 Earnings Volatility

Next, earnings volatility variable is estimated to significantly and positively affecting the share price volatility. It's coefficient for low leverage companies and high leverage companies are 22.24784 and 845.9057. For every 1% increase in earnings volatility of low leverage companies will lead share price volatility to increase 2224.78% on average. At the same time as every 1% increase in the earnings volatility of high leverage, the share price volatility will raise 84590.57% on average. Earnings volatility is referring to the profitability of the firms. Profitability is an important element that will affect the share price movement. Therefore, the earnings volatility will be significant correlated with share price volatility.

4.7.3.3 Dividend Payout Policy

Then, dividend payout policy is positive and significantly correlated with share price volatility. The coefficient for low leverage companies and high leverage companies are 5.661801 and 125.6844. For every 1% increase in dividend payout of low leverage companies will lead share price volatility to increase 566.18% on average. While every 1% increase in the dividend payout of high leverage, the share price volatility will raise 12568.44% on average. When companies pay dividend, the company share price change is high. This could happen because dividend payout can bring signal to investor the higher dividend company may the lesser focus on future investment. Investor which more focus on long term performance may

think increase pay dividend is not a good news, hence share price volatility increase.

4.7.3.4 Growth

Lastly, growth of the low leverage companies has positively and significantly impact on the share price volatility at 10%significant level. The coefficient for low leverage companies is 2.020235. Every 1% raise in the growth will lead to share price volatility increase for 202.02%. The growth variable for high leverage level companies has drop from the model due to multicollinearity problem.

4.7.3.5 R^2

The coefficient of determinants of low leverage company is 0.747057 which consider high correctness to explain the share price volatility. However, the coefficient of determinants of high leverage company is 0.308075. Hence, we conclude that there is rather low correctness to explain the share price volatility. The F-statistics for low leverage level companies and high leverage level companies are significant at 1%. Therefore, we conclude that the models used to estimate on the impact of share price volatility are true.

4.8 Conclusion

The above are our research findings; in the coming chapter we will further discuss the findings and interpretation, limitation, and recommendations.

CHAPTER 5: FINDINGS DISCUSSION AND INTERPRETATION, LIMITATION, AND RECOMMENDATIONS

5.0 Introduction

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This chapter will presents all the summary of the results and some discussion on the major findings in chapter 4. Besides that, we will discuss on the limitation of the research and implication of the research. Some recommendation for the future researches will be provided in this chapter too.

5.1 Hypothesis Decision

Table: 20: Hypothesis decision

	All Firm	Pre-Crisis	During-Crisis	Post-Crisis	High Leverage	Low Leverage
H_1= There is a relationship between leverage (LEV) and share price volatility (SPV)	Accept	Accept	Accept	Accept	-	-
H_2= There is a relationship between share price volatility (SPV) and size of firm (SZ)	Accept	Reject**	Reject***	Accept	Reject*	Reject**
H_3= There is a relationship between share price volatility (SPV) and earnings volatility (EV)	Reject*	Accept	Accept	Accept	Reject***	Reject**
H_4= There is a relationship between share price volatility (SPV) and dividend payout ratio (DPR).	Accept	Accept	Accept	Accept	Reject**	Reject*
H_5 = There is a relationship between share price volatility (SPV) and growth.	Reject***	Reject**	Reject***	Reject***	-	Reject*

Note 1: The asterisks ***, **, and * represent significant at 1 percent, 5 percent, and 10 percent confident levels respectively.

Table 21: Relationship between Dependent Variable and Independent Variable

Hypothesis	Expected	All firm	Pre-crisis	During crisis	Post crisis	High leverage	Low leverage
H_1= There is a relationship between leverage (LEV) and share price volatility (SPV)	-	-	-	-	+		
H_2= There is a relationship between share price volatility (SPV) and size of firm (SI)	-	-	+	+	-	+	+
H_3= There is a relationship between share price volatility (SPV) and earnings volatility (EV)	+	-	+	+	-	+	+
H_4= There is a relationship between share price volatility (SPV) and dividend payout ratio (DPR).	-	+	-	+	+	+	+
H_5 = There is a relationship between share price volatility (SPV) and growth.	+	+	+	+	+	+	

Table 22: Pecking order theory and trade-off theory

Variables	Pecking order theory	Trade-off theory
Leverage (Lev)	√	√
Size (SZ)	X	√
Earnings volatility (EV)	√	X
Dividend Payout Ratio (DPR)	X	X
Growth	√	√

5.2 Major Findings

By referring the Table 20 and Table 21 we have concluded the hypothesis of all the independent variables (Leverage, Firm size, Earnings Volatility, Dividend payout ratio and Firm growth) against the dependent variable (Share Price Volatility) in all firms, pre-crisis, during crisis, post-crisis, high leverage and low leverage. The hypothesis that we have concluded is in terms of whether they are significant or not significant and either they are positive or negative relationship towards the dependent variable.

5.2.1 Leverage

Foremost, we found that leverage has insignificant effect against share price volatility in all models. Besides, the relationship between leverage and share price volatility shows majority in negative but in high leverage model is positive. This indicated that in all firms, pre-crisis, and during-crisis is negative relationship against share price volatility but insignificant. As the result shown in all firms, pre-crisis, and during-crisis model tally with expected relationship. Hashemijoo, Ardekani & Younesi (2012) and Mohamad & Nassir (1993) also have the same findings. However, in post-crisis model result has shown positive relationship this exactly match the pecking order theory and trade-off theory.

Bagley, Ghosh & Yaari (1998) mentioned that when companies have exhausted using the internal fund to finance, and they will increasingly using the debt financing (alternative way of cheaper financing), beyond a certain limit companies will borrow in a more expensive way which is issuing stock.

5.2.2 Size of firms

Next, size has positive and significant effect in most of the time excluded the all firms' model and post crisis model. Naveed & Ramzan (2013) result shown negative relationship and it supports with our finding in all firm and post-crisis model. The rationale behind is because large firms usually have lower risk, larger pool of resource, and sufficient information than smaller firms. Therefore, in normal economy condition there will be a negative relationship. As we observed, firm size has positive relationship against share price volatility in pre-crisis, during crisis, high leverage, and low leverage model. Therefore the size have confirm with the pecking order theory and trade-off theory. The positive relationship will indicate increase in size will increase the share price volatility. The larger the firm, they might be affect more the crisis in term of profit and cost. Hence, their share price will have effect during this time. Besides that, the larger the size of the firm regardless high or low leverage the firm share price volatility is high. This might be due to consumer product company had been severely affected by the crisis and lead to inflation (economy problem). So that consumer will reduce the purchasing power and eventually resulting higher risk for larger size consumer product companies. In conclusion, the larger the size of consumer product companies will have greater share price volatility.

5.2.3 Earnings Volatility

Earnings volatility has positive significant impact in high leverage and low leverage model. Our finding shows negative relationship in all firm and post-crisis model. However, our finding contrasts with the expected relationship but the earnings volatility is significant relevant to share price volatility. According to Shimizu (2003) moral hazard has happened in most of the Asian countries during financial crisis. More people are willing to take risk due to the moral hazard. Therefore, regardless the earnings volatility is lower but investors

react in abnormal decision in share market, this may be the reason why negative relationship between earnings volatility and share price volatility. On the other hand, our study constant with the previous researchers studied (eg: Hussainey, Mgbame & Chijoke-Mgbame (2010), BeaverWilliam (1968) and Ball and Brown (1968)), which is the positive relationship between earning volatility and share price volatility. This might due to economic factor (economic downturn) or accounting factor have effect on the earning volatility.

5.2.4 Dividend Payout Ratio

Dividend payout ratio is shown that positive but insignificantly affects share price volatility in the model of all firms, during-crisis, and post-crisis which consistent with Rashid et al (2008). According to Rashid et al (2008), dividend payout policy is not important in Bangladesh because the shares of listed public limited companies are not generally held. Besides that, the dominant shareholder control on the share in Bangladesh. In the model of pre-crisis, result shows that is negative relationship but insignificant to share price volatility. Hence, even the result match with the expectation and tally with the study from Habib, Kiani & khan (2012), but our findings indicated that the share price volatility might not be affected by dividend payout ratio. Nevertheless, our finding shows that there is a significant and positive correlation between dividend payout ratio and share price volatility in high leverage and low leverage model. This might because regardless the company either is a high leverage or low leverage, the investors may be taken the dividend payout ratio as the "guideline" when investment decision making. The higher the dividend payout ratio might bring positive signal to investor, hence investors boost trading and share price have more volatile. In other words, the higher the dividend payout ratio will stimulate the higher share price volatility.

5.2.5 Growth

Lastly, growth is proven that positive and significant correlated with share price volatility in all model. However, many researchers found that there is insignificant relationship between growth and share price volatility (Nazir et al, 2010; Zakaria et al, 2012). The reason behind might because the growth of the

firms has negative influence on dividend policy, and dividend policy which has positive effect to share price volatility, thus there is a positive impact to share price volatility but indirectly (Rashid and Anisur Rahman, 2008).

5.3 Implication of study

Our study has provided a contribution for the policy makers, regulator, individual investor, future researchers and students. Due to the leverage variable does not have significant relevant towards the share price volatility, therefore this might be risky for investor since they cannot estimate the level of the company debt. Hence, the policy maker/regulator should address this issue to ensure all the information disclosure property to investor in during investment decision. They might try to implement policy/regulation to make sure all the major factor affect share price volatility is incorporated. Next, through this study, regulators can set some regulations that lessen the speculators activities that cause stock price to volatile vigorously. In addition, individual investors will have more knowledge regarding the stock price volatility and assists them to make decision in stock investment. Lastly, this study also brings implications to future researchers and students. Future researchers can have a more comprehensive view on share price volatility and ease them in future research. Business students can have a clear picture on the investment especially on the share price. This will help them to perform better in the investment activity once they graduate.

5.4 Limitation

We found out that there are some limitations when doing the research. Firstly, data collection is one of the challenges for us when carrying the research. We were using the data which covered six years from year 2005 until 2010. However, there are many

data of the consumer products industry not available in the Data Stream especially for the year 2005 until 2009 due to Bursa Malaysia merged the main board and second board company with a set of unified listing requirements. Therefore, we not able to generate more companies as sample for our research to ensure the data are accurate. Only 62 companies from 132 companies were successfully to generate as the sample for our research.

Moreover, according to the Expert Group (2009) the crisis effect can persist for three years or more than that. One of the reasons is that the jobs opportunities have not yet recover and the total wage bill cannot be change so quickly. However, our study only captures or examines the effect of crisis impact based on two years duration. This might not enough to investigate the effect well. Besides, the impact of crisis might vary due to the dependent of the foreign capital sectors and for investment, as well as how large is their profit from exports ActionAid (2009). For instance, if the country is heavily relying on the foreign capital, then the losses for the particular country will be bigger; therefore it may suffer longer for the crisis. In addition, ActionAid (2009) mentioned that there is a different in terms of crisis recovery between rich developing countries and poor developing countries. In short, our study might not able to capture well the crisis effect due to the omission of these issues.

Lastly, time constraint is another limitation for this study. We accomplish this study in approximately five months, and this affect the quality of the works. We believe that a well quality works require a sufficient time to complete, in order to have a more comprehensive view on the research objective. In our study, we had tried our best to examine the research objective and fulfil the problem statement, however we may unable to include the other unforeseen issues which significant affect the result.

5.5 Recommendations for the Future Researches

Firstly, future researchers are encouraged to collect data from different software and website to get more complete data. The data needed may be available in other website

for example, World Bank. It could ensure the sample size of the data would not reduce too much due to unavailable data.

Besides that, our research is only focus on the consumer products industry so we recommend future researches to expand the area or concentrate on other industry. Future researches are recommended to do research on the overall share market in Malaysia too. The sample size of the research larger will lead to more accurate results.

Other than that, our research concentrate on the effect of leverage, size of firm, earnings volatility, dividend payout, and growth to the share price volatility. Thus, future researches can add other variable to test the relationship toward share price volatility such as dividend yields, interest rate, inflation, information, and profitability of firm. It could help policy maker to determine on the essential variables that affect the share price and take action on it.

Lastly, we would like to suggest future researches who are keening to have more profound understanding regarding the crisis effect and how does it impact the share price volatility to refer more factors which determine the crisis period. This will be effectively enhancing the accuracy to capture the crisis effect.

5.6 Conclusion

In short, we found that there is only earnings volatility and growth is statistically significant to share price volatility. However when we focus into the crisis period, size has significantly related to share price volatility in pre-crisis and during crisis, and growth has statistically relevant to share price volatility in the whole crisis period. Moreover, we do investigate the high leverage and low leverage firms separately. The findings show that all the variable (exclude the growth) in high leverage, have statistically significant to share price volatility. On the other hand, all variable including size, earnings volatility, dividend payout ratio, and growth in low leverage have significant relevant to share price volatility.

Besides, we have also encountered some limitation in our study. Data collection difficulties, crisis effect issue, and time constraint problem are the limitation of our study. At last, we recommended future researchers to find out more data sources, expand the area or concentrate on other industry, consider other independent variables, and gather more information regarding crisis effect in order to have a more comprehensive study.

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APPENDICIES

Appendix 1: All Firms

i. Normality

Date: 06/26/13 Time: 12:27
Sample: 2005 2010

	SPV	ROA	SIZE	GROWTH	DR	DPR
Mean	23.58130	0.070096	5.267310	1.377140	0.245598	0.234851
Median	0.574190	0.065508	5.190519	0.805000	0.203502	0.195448
Maximum	1506.216	0.465835	7.061444	18.40000	4.069071	3.500000
Minimum	0.007225	-0.356941	4.236839	-1.540000	0.000000	-18.00000
Std. Dev.	120.3411	0.088285	0.515439	2.062874	0.311028	1.182444
Skewness	8.365977	-0.137634	0.724047	4.718938	7.161019	-11.51115
Kurtosis	83.98352	6.527133	3.343433	30.06316	81.05390	168.3980
Jarque-Bera	105993.5	194.0049	34.33134	12733.06	97611.74	432241.3
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	8772.242	26.07589	1959.439	512.2960	91.36241	87.36475
Sum Sq. Dev.	5372811.	2.891666	98.56613	1578.771	35.88989	518.7222
Observations	372	372	372	372	372	372

ii. Multicollinearity

	SPV	ROA	SIZE	GROWTH	DR	DPR
SPV	1.000000	0.320762	0.374147	0.795425	-0.066994	0.088611
ROA	0.320762	1.000000	0.381413	0.468938	-0.011784	0.201401
SIZE	0.374147	0.381413	1.000000	0.473872	-0.033940	0.079753
GROWTH	0.795425	0.468938	0.473872	1.000000	-0.114333	0.120161
DR	-0.066994	-0.011784	-0.033940	-0.114333	1.000000	-0.055978
DPR	0.088611	0.201401	0.079753	0.120161	-0.055978	1.000000

iii. Autocorrelation

Dependent Variable: ERROR
Method: Panel Least Squares
Date: 06/26/13 Time: 12:32
Sample (adjusted): 2006 2010
Periods included: 5
Cross-sections included: 62
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ERROR(-1)	1.118653	0.087189	12.83020	0.0000
C	5.602756	2.006902	2.791743	0.0057

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.416951	Mean dependent var	2.022485
Adjusted R-squared	0.270598	S.D. dependent var	40.97173
S.E. of regression	34.99192	Akaike info criterion	10.12738
Sum squared resid	302435.3	Schwarz criterion	10.88675
Log likelihood	-1506.744	Hannan-Quinn criter.	10.43094
F-statistic	2.848949	Durbin-Watson stat	2.455350
Prob(F-statistic)	0.000000		

iv. Unit root test

Group unit root test: Summary
Series: SPV, SIZE, ROA, GROWTH, DR, DPR
Date: 06/26/13 Time: 12:36
Sample: 1 372
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 6
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-15.0178	0.0000	6	2212
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-22.6212	0.0000	6	2212
ADF - Fisher Chi-square	385.919	0.0000	6	2212
PP - Fisher Chi-square	455.850	0.0000	6	2226

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

v. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	30.950954	5	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
ROA	-26.094592	-27.837296	237.986375	0.9101
SIZE	-5.582304	13.818397	178.818215	0.1468
GROWTH	23.610493	32.973909	3.082965	0.0000
DR	-7.578891	-9.164581	26.399437	0.7576
DPR	0.159022	0.357074	0.070256	0.4549

Cross-section random effects test equation:
Dependent Variable: SPV
Method: Panel Least Squares
Date: 06/26/13 Time: 12:23
Sample: 2005 2010
Periods included: 6
Cross-sections included: 62
Total panel (balanced) observations: 372

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	24.12322	94.80202	0.254459	0.7993
ROA	-26.09459	45.53216	-0.573102	0.5670
SIZE	-5.582304	18.01147	-0.309930	0.7568
GROWTH	23.61049	3.094434	7.629988	0.0000
DR	-7.578891	12.63606	-0.599783	0.5491
DPR	0.159022	2.141443	0.074259	0.9409

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.888342	Mean dependent var	23.58130
Adjusted R-squared	0.864180	S.D. dependent var	120.3411
S.E. of regression	44.35014	Akaike info criterion	10.58374
Sum squared resid	599915.1	Schwarz criterion	11.28956
Log likelihood	-1901.576	Hannan-Quinn criter.	10.86404
F-statistic	36.76614	Durbin-Watson stat	0.918044
Prob(F-statistic)	0.000000		

vi. Linear Regression of All Firm

Dependent Variable: SPV
Method: Panel Least Squares
Date: 06/26/13 Time: 12:25
Sample: 2005 2010
Periods included: 6
Cross-sections included: 62
Total panel (balanced) observations: 372
Cross-section SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-26.09459	14.42528	-1.808949	0.0714
SIZE	-5.582304	6.785881	-0.822635	0.4114
GROWTH	23.61049	6.931099	3.406457	0.0007
DR	-7.578891	10.04749	-0.754307	0.4512
DPR	0.159022	0.193065	0.823671	0.4108
C	24.12322	35.62984	0.677051	0.4989

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.888342	Mean dependent var	23.58130
Adjusted R-squared	0.864180	S.D. dependent var	120.3411
S.E. of regression	44.35014	Akaike info criterion	10.58374
Sum squared resid	599915.1	Schwarz criterion	11.28956
Log likelihood	-1901.576	Hannan-Quinn criter.	10.86404
F-statistic	36.76614	Durbin-Watson stat	0.918044
Prob(F-statistic)	0.000000		

Appendix 2: Pre-crisis

vii. Normality

Date: 06/26/13 Time: 13:18
Sample: 2005 2006

	SPV	SIZE	ROA	GROWTH	DR	DPR
Mean	15.24178	5.213667	0.068416	1.460887	0.224499	0.141172
Median	0.705625	5.103116	0.072161	0.970000	0.178202	0.289664
Maximum	590.4900	7.061444	0.286954	12.29000	0.775955	2.666667
Minimum	0.019600	4.276048	-0.356941	-1.540000	0.000000	-18.00000
Std. Dev.	74.45579	0.505380	0.091994	1.800561	0.189844	1.946792
Skewness	7.129824	1.154934	-1.050399	3.788316	0.530347	-7.721618
Kurtosis	54.07902	4.731143	7.720794	21.13467	2.313284	67.88219
Jarque-Bera	14530.75	43.05044	137.9461	1995.736	8.249363	22982.33
Probability	0.000000	0.000000	0.000000	0.000000	0.016169	0.000000
Sum	1889.980	646.4947	8.483565	181.1500	27.83792	17.50535
Sum Sq. Dev.	681870.8	31.41532	1.040929	398.7684	4.433014	466.1698
Observations	124	124	124	124	124	124

viii. Multicollinearity

	SPV	SIZE	ROA	GROWTH	DR	DPR
SPV	1.000000	0.376310	0.327530	0.789416	-0.087772	0.060760
SIZE	0.376310	1.000000	0.299907	0.446561	0.001682	-0.010021
ROA	0.327530	0.299907	1.000000	0.439053	-0.368999	0.198294
GROWTH	0.789416	0.446561	0.439053	1.000000	-0.185104	0.079533
DR	-0.087772	0.001682	-0.368999	-0.185104	1.000000	0.019906
DPR	0.060760	-0.010021	0.198294	0.079533	0.019906	1.000000

ix. Unit root test

Group unit root test: Summary
Series: SPV, SIZE, ROA, GROWTH, DR, DPR
Date: 06/26/13 Time: 13:23
Sample: 1 124
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 2
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-17.8066	0.0000	6	731
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-15.5450	0.0000	6	731
ADF - Fisher Chi-square	221.959	0.0000	6	731
PP - Fisher Chi-square	266.465	0.0000	6	738

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

x. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	60.919828	5	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE	0.804807	20.930899	57.160053	0.0078
ROA	7.715630	1.597435	6.409204	0.0157
GROWTH	4.773606	8.435415	0.227153	0.0000
DR	17.587247	-1.017194	93.239594	0.0540
DPR	-0.129509	-0.004793	0.001360	0.0007

Cross-section random effects test equation:
Dependent Variable: SPV
Method: Panel Least Squares
Date: 06/26/13 Time: 13:17
Sample: 2005 2006
Periods included: 2
Cross-sections included: 62
Total panel (balanced) observations: 124

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.385832	56.50307	-0.006829	0.9946
SIZE	0.804807	11.04377	0.072874	0.9422
ROA	7.715630	13.45650	0.573376	0.5686
GROWTH	4.773606	1.347211	3.543325	0.0008
DR	17.58725	18.53424	0.948906	0.3467
DPR	-0.129509	0.356981	-0.362790	0.7181

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.997119	Mean dependent var	15.24178
Adjusted R-squared	0.993784	S.D. dependent var	74.45579
S.E. of regression	5.870172	Akaike info criterion	6.681060
Sum squared resid	1964.158	Schwarz criterion	8.204922
Log likelihood	-347.2257	Hannan-Quinn criter.	7.300088
F-statistic	298.9535	Durbin-Watson stat	3.936508
Prob(F-statistic)	0.000000		

xi. Linear Regression of All Firm

Dependent Variable: SPV
Method: Panel EGLS (Cross-section random effects)
Date: 06/26/13 Time: 13:19
Sample: 2005 2006
Periods included: 2
Cross-sections included: 62
Total panel (balanced) observations: 124
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	20.93090	8.050148	2.600064	0.0105
ROA	1.597435	13.21621	0.120869	0.9040
GROWTH	8.435415	1.260089	6.694303	0.0000
DR	-1.017194	15.82019	-0.064297	0.9488
DPR	-0.004793	0.355071	-0.013499	0.9893
C	-106.0884	41.62736	-2.548526	0.0121

Effects Specification	S.D.	Rho
Cross-section random	45.67337	0.9837
Idiosyncratic random	5.870172	0.0163

Weighted Statistics

R-squared	0.257936	Mean dependent var	1.379502
Adjusted R-squared	0.226492	S.D. dependent var	8.103116
S.E. of regression	7.126633	Sum squared resid	5993.089
F-statistic	8.203178	Durbin-Watson stat	1.536134
Prob(F-statistic)	0.000001		

Unweighted Statistics

R-squared	0.342321	Mean dependent var	15.24178
Sum squared resid	448452.0	Durbin-Watson stat	0.020529

Appendix 3: During Crisis

xii. Normality

Date: 06/26/13 Time: 13:26
Sample: 2007 2008

	SPV	SIZE	ROA	GROWTH	DR	DPR
Mean	21.10270	5.289770	0.064858	1.197016	0.243616	0.282718
Median	0.470941	5.204905	0.058266	0.735000	0.216500	0.186004
Maximum	819.3906	6.588503	0.280526	13.92000	1.000000	3.500000
Minimum	0.014400	4.236839	-0.190788	-1.300000	0.000000	-1.933333
Std. Dev.	102.6360	0.495180	0.074212	1.757409	0.200393	0.489555
Skewness	7.043957	0.689645	0.168914	4.711776	0.731496	2.091317
Kurtosis	53.27432	3.105702	4.556542	30.48412	3.438726	20.15722
Jarque-Bera	14084.21	9.887011	13.10758	4361.599	12.05294	1611.300
Probability	0.000000	0.007130	0.001425	0.000000	0.002414	0.000000
Sum	2616.735	655.9315	8.042414	148.4300	30.20844	35.05697
Sum Sq. Dev.	1295701.	30.16003	0.677420	379.8838	4.939376	29.47864
Observations	124	124	124	124	124	124

xiii. Multicollinearity

	SPV	SIZE	ROA	GROWTH	DR	DPR
SPV	1.000000	0.407037	0.411963	0.863203	-0.137231	0.175961
SIZE	0.407037	1.000000	0.415663	0.506005	0.024360	0.238807
ROA	0.411963	0.415663	1.000000	0.553868	-0.341549	0.302673
GROWTH	0.863203	0.506005	0.553868	1.000000	-0.190863	0.218675
DR	-0.137231	0.024360	-0.341549	-0.190863	1.000000	-0.300130
DPR	0.175961	0.238807	0.302673	0.218675	-0.300130	1.000000

xiv. Unit root test

Group unit root test: Summary
Series: SPV, SIZE, ROA, GROWTH, DR, DPR
Date: 06/26/13 Time: 13:34
Sample: 1 124
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 2
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-18.6579	0.0000	6	731
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-16.4300	0.0000	6	731
ADF - Fisher Chi-square	242.956	0.0000	6	731
PP - Fisher Chi-square	256.036	0.0000	6	738

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

xv. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	126.387195	5	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE	11.518655	30.088929	26.038707	0.0003
ROA	1.719706	10.223360	10.873755	0.0099
GROWTH	7.428000	10.261423	0.069085	0.0000
DR	-7.503262	-7.330333	0.675085	0.8333
DPR	0.501992	1.392579	0.092894	0.0035

Cross-section random effects test equation:
Dependent Variable: SPV
Method: Panel Least Squares
Date: 06/26/13 Time: 13:25
Sample: 2007 2008
Periods included: 2
Cross-sections included: 62
Total panel (balanced) observations: 124

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-47.14531	47.37975	-0.995052	0.3239
SIZE	11.51865	8.921220	1.291152	0.2019
ROA	1.719706	18.94414	0.090778	0.9280
GROWTH	7.428000	1.006044	7.383372	0.0000
DR	-7.503262	5.436537	-1.380155	0.1729
DPR	0.501992	1.449027	0.346434	0.7303

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.999204	Mean dependent var	21.10270
Adjusted R-squared	0.998283	S.D. dependent var	102.6360
S.E. of regression	4.252767	Akaike info criterion	6.036432
Sum squared resid	1030.904	Schwarz criterion	7.560293
Log likelihood	-307.2588	Hannan-Quinn criter.	6.655460
F-statistic	1084.606	Durbin-Watson stat	3.936508
Prob(F-statistic)	0.000000		

xvi. Linear Regression of All Firm

Dependent Variable: SPV
Method: Panel EGLS (Cross-section random effects)
Date: 06/26/13 Time: 13:31
Sample: 2007 2008
Periods included: 2
Cross-sections included: 62
Total panel (balanced) observations: 124
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	30.08893	7.317749	4.111774	0.0001
ROA	10.22336	18.65494	0.548024	0.5847
GROWTH	10.26142	0.971103	10.56677	0.0000
DR	-7.330333	5.374090	-1.364014	0.1752
DPR	1.392579	1.416610	0.983036	0.3276
C	-149.6149	39.23093	-3.813697	0.0002

Effects Specification	S.D.	Rho
Cross-section random	49.56046	0.9927
Idiosyncratic random	4.252767	0.0073

Weighted Statistics

R-squared	0.367674	Mean dependent var	1.278090
Adjusted R-squared	0.340880	S.D. dependent var	7.461033
S.E. of regression	6.057327	Sum squared resid	4329.564
F-statistic	13.72251	Durbin-Watson stat	1.138243
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.351488	Mean dependent var	21.10270
Sum squared resid	840277.6	Durbin-Watson stat	0.005865

Appendix 4: Post Crisis

xvii. Normality

Date: 06/26/13 Time: 13:38
Sample: 2009 2010

	SPV	SIZE	ROA	GROWTH	DR	DPR
Mean	34.39941	5.298494	0.077015	1.473516	0.268678	0.280665
Median	0.451316	5.240232	0.067276	0.760000	0.207565	0.140718
Maximum	1506.216	6.604908	0.465835	18.40000	4.069071	2.777778
Minimum	0.007225	4.254524	-0.219115	0.090000	0.000000	-0.404651
Std. Dev.	165.5575	0.544379	0.097265	2.540844	0.463249	0.417515
Skewness	7.241710	0.396838	0.428925	4.668931	6.334610	2.489724
Kurtosis	59.32103	2.617972	5.502847	26.83325	48.48655	12.71393
Jarque-Bera	17472.77	4.008639	36.16744	3385.300	11519.26	615.6364
Probability	0.000000	0.134752	0.000000	0.000000	0.000000	0.000000
Sum	4265.527	657.0132	9.549913	182.7160	33.31605	34.80243
Sum Sq. Dev.	3371342.	36.45081	1.163629	794.0741	26.39576	21.44119
Observations	124	124	124	124	124	124

xviii. Multicollinearity

	SPV	SIZE	ROA	GROWTH	DR	DPR
SPV	1.000000	0.381895	0.297779	0.792269	-0.051298	0.278001
SIZE	0.381895	1.000000	0.433314	0.490647	-0.082529	0.400336
ROA	0.297779	0.433314	1.000000	0.449780	0.229496	0.410766
GROWTH	0.792269	0.490647	0.449780	1.000000	-0.077818	0.404671
DR	-0.051298	-0.082529	0.229496	-0.077818	1.000000	-0.222182
DPR	0.278001	0.400336	0.410766	0.404671	-0.222182	1.000000

xix. Unit root test

Group unit root test: Summary
Series: SPV, SIZE, ROA, GROWTH, DR, DL
Date: 06/26/13 Time: 13:43
Sample: 1 124
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 4
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-14.2422	0.0000	6	728
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-12.8096	0.0000	6	728
ADF - Fisher Chi-square	176.780	0.0000	6	728
PP - Fisher Chi-square	192.264	0.0000	6	738

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

xx. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.594625	5	0.1264

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE	-102.6414...	-13.652684	10189.379...	0.3780
ROA	21.379166	-55.963894	2960.128547	0.1552
GROWTH	87.801770	57.793597	132.059909	0.0090
DR	-53.627036	1.195305	2594.587053	0.2818
DPR	12.834256	3.560799	130.996063	0.4178

Cross-section random effects test equation:
Dependent Variable: SPV
Method: Panel Least Squares
Date: 06/26/13 Time: 13:37
Sample: 2009 2010
Periods included: 2
Cross-sections included: 62
Total panel (balanced) observations: 124

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	458.0269	550.4125	0.832152	0.4088
SIZE	-102.6414	104.3562	-0.983568	0.3295
ROA	21.37917	102.0150	0.209569	0.8348
GROWTH	87.80177	12.67886	6.925052	0.0000
DR	-53.62704	57.04236	-0.940127	0.3511
DPR	12.83426	20.41777	0.628583	0.5321

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.970801	Mean dependent var	34.39941
Adjusted R-squared	0.936992	S.D. dependent var	165.5575
S.E. of regression	41.55710	Akaike info criterion	10.59543
Sum squared resid	98438.56	Schwarz criterion	12.11929
Log likelihood	-589.9166	Hannan-Quinn criter.	11.21446
F-statistic	28.71434	Durbin-Watson stat	3.936508
Prob(F-statistic)	0.000000		

xxi. Linear Regression of All Firm

Dependent Variable: SPV
Method: Panel EGLS (Cross-section random effects)
Date: 06/26/13 Time: 13:40
Sample: 2009 2010
Periods included: 2
Cross-sections included: 62
Total panel (balanced) observations: 124
Swamy and Arora estimator of component variances
Cross-section SUR (PCSE) standard errors & covariance (d.f. corrected)
WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	-13.65268	19.08307	-0.715434	0.4758
ROA	-55.96389	55.21643	-1.013537	0.3129
GROWTH	57.79360	17.71769	3.261915	0.0014
DR	1.195305	9.837064	0.121510	0.9035
DPR	3.560799	8.778346	0.405634	0.6857
C	24.56782	97.29235	0.252515	0.8011

Effects Specification	S.D.	Rho
Cross-section random	95.37533	0.8404
Idiosyncratic random	41.55710	0.1596

Weighted Statistics

R-squared	0.542734	Mean dependent var	10.12868
Adjusted R-squared	0.523358	S.D. dependent var	61.10338
S.E. of regression	42.18532	Sum squared resid	209993.0
F-statistic	28.01106	Durbin-Watson stat	2.060233
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.624961	Mean dependent var	34.39941
Sum squared resid	1264384.	Durbin-Watson stat	0.342170

Appendix 5: High Leverage

xxii. Normality

Date: 07/24/13 Time: 18:31
Sample: 2005 2010

	SPV	SIZE	ROA	DPR
Mean	54.43019	5.664313	0.062418	0.223945
Median	0.551840	5.586046	0.059086	0.127373
Maximum	1506.216	7.061444	0.280526	1.785714
Minimum	0.017556	4.808137	-0.219115	-0.118681
Std. Dev.	207.5250	0.494455	0.079329	0.324672
Skewness	4.795576	0.560182	-0.040687	2.227437
Kurtosis	27.78607	2.892365	5.762513	9.029994
Jarque-Bera	3413.974	6.122866	36.91748	271.6659
Probability	0.000000	0.046821	0.000000	0.000000
Sum	6313.903	657.0603	7.240455	25.97766
Sum Sq. Dev.	4952664.	28.11585	0.723704	12.12240
Observations	116	116	116	116

xxiii. Multicollinearity

	SPV	SIZE	ROA	GROWTH	DPR
SPV	1.000000	0.464261	0.569014	0.927828	0.498643
SIZE	0.464261	1.000000	0.582979	0.531977	0.479072
ROA	0.569014	0.582979	1.000000	0.658737	0.541408
GROWTH	0.927828	0.531977	0.658737	1.000000	0.544416
DPR	0.498643	0.479072	0.541408	0.544416	1.000000

xxiv. Autocorrelation

Dependent Variable: ERROR1
Method: Panel EGLS (Cross-section random effects)
Date: 07/11/13 Time: 11:13
Sample (adjusted): 2006 2010
Periods included: 5
Cross-sections included: 20
Total panel (unbalanced) observations: 96
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ERROR1(-1)	0.175948	0.057017	3.085892	0.0027
C	-11.08105	15.75969	-0.703126	0.4837

Effects Specification	S.D.	Rho
Cross-section random	59.43406	0.3511
Idiosyncratic random	80.79783	0.6489

Weighted Statistics

R-squared	0.076931	Mean dependent var	-5.365051
Adjusted R-squared	0.067112	S.D. dependent var	92.24168
S.E. of regression	89.08031	Sum squared resid	745918.3
F-statistic	7.834253	Durbin-Watson stat	1.425693
Prob(F-statistic)	0.006221		

Unweighted Statistics

R-squared	0.144912	Mean dependent var	-10.01156
Sum squared resid	1396180.	Durbin-Watson stat	0.761686

xxv. Unit root test

Group unit root test: Summary
Series: SPV, SIZE, ROA, DPR
Date: 07/11/13 Time: 11:15
Sample: 1 116
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0
Newey-West bandwidth selection using Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-8.57416	0.0000	4	460
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-8.62921	0.0000	4	460
ADF - Fisher Chi-square	88.4891	0.0000	4	460
PP - Fisher Chi-square	90.1361	0.0000	4	460

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

xxvi. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.137431	3	0.1620

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE	48.435851	58.982927	529.971858	0.6468
ROA	703.778130	845.905695	13819.067...	0.2266
DPR	105.326779	125.684408	330.843129	0.2630

Cross-section random effects test equation:
Dependent Variable: SPV
Method: Panel Least Squares
Date: 07/11/13 Time: 11:12
Sample: 2005 2010
Periods included: 6
Cross-sections included: 20
Total panel (unbalanced) observations: 116

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-287.4413	254.6022	-1.128982	0.2618
SIZE	48.43585	46.19016	1.048618	0.2971
ROA	703.7781	278.6005	2.526120	0.0132
DPR	105.3268	57.86331	1.820269	0.0719

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.592610	Mean dependent var	54.43019
Adjusted R-squared	0.496238	S.D. dependent var	207.5250
S.E. of regression	147.2934	Akaike info criterion	12.99829
Sum squared resid	2017667.	Schwarz criterion	13.54426
Log likelihood	-730.9009	Hannan-Quinn criter.	13.21992
F-statistic	6.149195	Durbin-Watson stat	1.405199
Prob(F-statistic)	0.000000		

xxvii. Linear Regression of All Firm

Dependent Variable: SPV
Method: Panel EGLS (Cross-section random effects)
Date: 07/11/13 Time: 11:12
Sample: 2005 2010
Periods included: 6
Cross-sections included: 20
Total panel (unbalanced) observations: 116
Swamy and Arora estimator of component variances
Cross-section SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	58.98293	34.97721	1.686324	0.0945
ROA	845.9057	179.9765	4.700091	0.0000
DPR	125.6844	55.40724	2.268375	0.0252
C	-361.1237	182.4440	-1.979367	0.0502

Effects Specification	S.D.	Rho
Cross-section random	70.44880	0.1862
Idiosyncratic random	147.2934	0.8138

Weighted Statistics

R-squared	0.308075	Mean dependent var	35.33868
Adjusted R-squared	0.289541	S.D. dependent var	176.0915
S.E. of regression	148.4572	Sum squared resid	2468428.
F-statistic	16.62241	Durbin-Watson stat	1.179790
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.383288	Mean dependent var	54.43019
Sum squared resid	3054367.	Durbin-Watson stat	0.953463

Appendix 6: Low Leverage

xxviii. Normality

Date: 07/24/13 Time: 18:17
Sample: 2005 2010

	SPV	ROA	SIZE	GROWTH	DPR
Mean	9.602890	0.073576	5.087418	1.217641	0.239793
Median	0.591053	0.072613	5.023393	0.810000	0.267878
Maximum	290.3616	0.465835	6.475590	11.27000	3.500000
Minimum	0.007225	-0.356941	4.236839	0.090000	-18.00000
Std. Dev.	31.91499	0.091994	0.414837	1.392227	1.409464
Skewness	5.334767	-0.194697	0.738074	3.980151	-9.916820
Kurtosis	37.05211	6.637634	3.547452	23.51280	121.6371
Jarque-Bera	13582.78	142.7628	26.43966	5164.173	154326.8
Probability	0.000000	0.000000	0.000002	0.000000	0.000000
Sum	2458.340	18.83544	1302.379	311.7160	61.38709
Sum Sq. Dev.	259734.4	2.158024	43.88290	494.2656	506.5798
Observations	256	256	256	256	256

xxix. Multicollinearity

	SPV	SIZE	ROA	GROWTH	DPR
SPV	1.000000	0.316110	0.303187	0.360732	0.075932
SIZE	0.316110	1.000000	0.444270	0.484689	0.066525
ROA	0.303187	0.444270	1.000000	0.424504	0.186985
GROWTH	0.360732	0.484689	0.424504	1.000000	0.095065
DPR	0.075932	0.066525	0.186985	0.095065	1.000000

xxx. Autocorrelation

Dependent Variable: ERROR
Method: Panel Least Squares
Date: 07/11/13 Time: 11:02
Sample (adjusted): 2006 2010
Periods included: 5
Cross-sections included: 43
Total panel (unbalanced) observations: 213

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ERROR(-1)	-0.100841	0.090795	-1.110645	0.2683
C	0.780685	1.212516	0.643856	0.5205

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.042389	Mean dependent var	0.875219
Adjusted R-squared	-0.201263	S.D. dependent var	16.10592
S.E. of regression	17.65244	Akaike info criterion	8.761377
Sum squared resid	52661.84	Schwarz criterion	9.455728
Log likelihood	-889.0866	Hannan-Quinn criter.	9.041987
F-statistic	0.173974	Durbin-Watson stat	2.312802
Prob(F-statistic)	1.000000		

xxxi. Unit root test

Group unit root test: Summary
Series: SPV, SIZE, ROA, GROWTH, DPR
Date: 07/11/13 Time: 11:05
Sample: 1 256
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 3
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-13.8917	0.0000	5	1271
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-18.3818	0.0000	5	1271
ADF - Fisher Chi-square	270.181	0.0000	5	1271
PP - Fisher Chi-square	311.237	0.0000	5	1275

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

xxxii. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	40.394823	4	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE	10.043887	10.944050	4.621291	0.6754
ROA	22.247842	29.232417	27.921590	0.1862
GROWTH	2.020235	2.927598	0.210438	0.0479
DPR	5.661801	4.771743	0.027697	0.0000

Cross-section random effects test equation:
Dependent Variable: SPV
Method: Panel Least Squares
Date: 07/11/13 Time: 10:58
Sample: 2005 2010
Periods included: 6
Cross-sections included: 43
Total panel (unbalanced) observations: 256

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-46.94905	24.61147	-1.907609	0.0578
SIZE	10.04389	4.927514	2.038327	0.0428
ROA	22.24784	17.90252	1.242721	0.2154
GROWTH	2.020235	1.298521	1.555796	0.1213
DPR	5.661801	0.889512	6.365062	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.747057	Mean dependent var	9.602890
Adjusted R-squared	0.691385	S.D. dependent var	31.91499
S.E. of regression	17.72978	Akaike info criterion	8.752712
Sum squared resid	65698.09	Schwarz criterion	9.403585
Log likelihood	-1073.347	Hannan-Quinn criter.	9.014491
F-statistic	13.41896	Durbin-Watson stat	1.985719
Prob(F-statistic)	0.000000		

xxxiii. Linear Regression of All Firm

Dependent Variable: SPV
Method: Panel Least Squares
Date: 07/11/13 Time: 11:00
Sample: 2005 2010
Periods included: 6
Cross-sections included: 43
Total panel (unbalanced) observations: 256
Cross-section SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	10.04389	4.309264	2.330766	0.0207
ROA	22.24784	9.098344	2.445263	0.0153
GROWTH	2.020235	1.048671	1.926472	0.0554
DPR	5.661801	2.890599	1.958695	0.0515
C	-46.94905	20.95802	-2.240148	0.0261

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.747057	Mean dependent var	9.602890
Adjusted R-squared	0.691385	S.D. dependent var	31.91499
S.E. of regression	17.72978	Akaike info criterion	8.752712
Sum squared resid	65698.09	Schwarz criterion	9.403585
Log likelihood	-1073.347	Hannan-Quinn criter.	9.014491
F-statistic	13.41896	Durbin-Watson stat	1.985719
Prob(F-statistic)	0.000000		

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