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THE DETERMINANTS OF DIVIDEND POLICY ON

CHINESE HIGH-TECH FIRMS

BY

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Universiti Utara Malaysia

MASTER OF SCIENCE (FINANCE)

UNIVERSITI UTARA MALAYSIA

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SCHOOL OF ECONOMICS, FINANCE, AND BANKING
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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations that have been duly acknowledged.

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ABSTRACT

The purpose of this study is to investigate the relationship between dividend payout ratio in Chinese High-tech firms with profitability, firm size, growth opportunities, leverage and liquidity. The study used a sample of 226 firms listed on the Shenzhen stock exchange and Shanghai stock exchange. These firms were taken from high technology industry sector in China. In order to explain the relationships as stated above, ordinary least squares regression analysis is used to test the hypotheses. The study found that at the pooled data level for whole study period, profitability, growth opportunity, liquidity and firm size have significant positive correlation with dividend payout ratio(DPR). The variable leverage, however, has a strong negative correlation with dividend payout ratio. The findings however differ from term to term (short term, medium term and long term); results reflect that leverage is the common variables which have influence on DPR across various terms, where profitability, growth opportunity, liquidity and firm size are not significantly associated with DPR in short term (0-3 years). Similarly, profitability, liquidity and growth opportunity have no influence on the dividend payout ratio of the companies in the medium term (4-7 years). All variables have significant influence on DPR except growth opportunity.

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ABSTRAK

Kajian ini mengkaji hubungan antara nisbah pembayaran dividen syarikat yang berteknologi tinggi dan keuntungan, saiz firma, peluang pertumbuhan, penghutangan dan kecairan di China. Kajian tersebut menggunakan sampel 226 buah syarikat yang disenaraikan di *Shenzhen Stock Exchange* dan *Shanghai Stock Exchange.* Syarikat-syarikat ini dipilih dari sektor industri teknologi tinggi di China. Bagi menerangkan perhubungan yang dinyatakan di atas, kaedah analisis regresi kuasa dua digunakan untuk menguji hipotesis. Oleh itu, hasil kajian menunjukkan bahawa di peringkat data terkumpul untuk tempoh keseluruhan kajian, keuntungan, peluang pertumbuhan, kecairan dan saiz firma mempunyai hubungan positif dengan nisbah pembayaran dividen. Manakala bagi penghutangan, ia menunjukkan hubungan negatif dengan nisbah pembayaran dividen. Keputusan tersebut adalah berbeza dari segi tempoh masa (jangka pendek: 0-3 tahun, jangka sederhana: 4 - 7 tahun dan jangka panjang: 8 - 10 tahun). Hasil kajian menunjukkan bahawa penghutangan adalah pembolehubah biasa yang mempengaruhi nisbah pembayaran dividen dalam pelbagai segi, manakala bagi keuntungan, peluang pertumbuhan, kecairan dan saiz firma, adalah tidak berkaitan dengan nisbah pembayaran dividen dalam jangka pendek. Begitu juga, keuntungan, kecairan dan peluang pertumbuhan tidak mempengaruhi nisbah pembayaran dividen daripada syarikat-syarikat dalam jangka masa sederhana. Semua pembolehubah mempunyai pengaruh yang besar ke atas nisbah pembayaran dividen kecuali peluang pertumbuhan.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Since the dividend irrelevance theory was proposed by Miller and Modigliani in 1961, corporate dividend policy has been considered as important theoretical and empirical study over 40 years. Many questions have been raised by previous researchers such as why firms need to pay dividends to shareholders, when firms should pay dividend, why investors like to pay attention on dividend payment, what are major factors that cause dividend payment increase or decrease. “The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that don’t fit together” (Black, 1976). The firms make profit from its business and the profit will be distributed to shareholders in certain proportion which is name as dividend. In 2003, China Securities Regulatory Commission made policy that companies can’t financing again unless the cash dividend is paid to shareholders. Hence, how to make dividend policy become the vital decision for managers of firm and it is the most controversial topic in finance as well(Allen & Michaely, 1995).

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China’s high-tech industry has rapid growth in past 30 years ago. According to OECD statistic, the china’s export volume of high-tech products grew 33% from 1995 to 2008, and value of export increased to 416 billion US dollar from 10 billion. The high-tech export, which is made up about 29.05% of china’s total export, which has grown faster than other industry. In 2006,China had surpassed Japan ,EU-2 and the US7 as the largest exporting country with 16.9% of global market share in high-tech products in 2006(Xing, 2014).

China’s share market is relatively young compare to other main exchange stock in the world. While Shanghai Exchange Stock(SSE) was only reopened in 1990 after being

closed in 1949 and Shenzhen Exchange Stocked(SZSE) also opened in1991, which making China stock in existence only for 26 years. By comparison, the US stock is in existence for 223 years, with New York Exchange Stock(NYSE) was found in 1817, London stock exchange was found in 1698, Tokyo stock exchange was found in 1878, Bursa Malaysia Berhad was found in 1964. But, China's share market was growing fast in past 10 years. According to China securities statistic in 2015, China's market capitalization is raking NO 2 after US stock market as a large number of companies set up in past 10 years. According to KPMG analysis, there are 1501 firms listed on Shenzhen stock exchange and Shanghai stock exchange from 2006 – 2015. Thus compare to developed markets, Chinese listed companies are younger and in a stage of developing, they are prefer focus on capital accumulation and business expansion (Zhenglin , Shao & Yungang, 2004; Wang, & Wandler, 2011). Graph 1.1 shows on the statistics of the total number of companies listed on Shenzhen stock exchange and Shanghai stock exchange from 2006 – 2015.

Source: Wind Info and KPMG analysis

Figure 1.1

Statistics of the total number of companies listed on Shenzhen stock exchange and Shanghai stock exchange from 2006 – 2015.

In the past few decades，a lot of finance scholar used comprehensive theories to find out the factors that can affect dividend policy decision. A number of study have discussed how the managers make dividend policy by surveying though managerial views (Baker & Powell, 2000; Dhanani, 2005; Naser, Nuseibeh, & Rashed, 2013). Most of the researchers believe that dividend clientele, agency, signaling, transaction cost, pecking order, bird in the hand, tax preference, catering theory can explain why firms pay dividend to their shareholders. Among them, signaling and agency theory are two popular mainstream modern dividend policy theories. Signaling theory emphasizes the effect of information transfer of the dividend to outside investors. It argued that management of the firm has more important information about performance of the firm and the future investment decisions than outside investors. But, yet there is no consensus for signaling theory. Kwan (1981) and Healy & Palepu (1988) proposed that dividend pay-out can transfer signal to investors and shareholders. Mean company may transfer positive signal to investors if dividend pay-out rate is high. In contrast, investors will not think firms perform well if dividend pay-out is less or no dividend. However, Benartzi, Michaely, & Thaler (1997) study what determinant of US dividend policy with companies listed on NYSE and AME. Results indicated there is an obvious correlation between dividend and previous surplus level. But it has little correlation between dividend payout and future earnings level.

A lot of researchers have found number of factors that affect managers make dividend payout policy. These factors include profitability, firm age, firm size, growth opportunities and leverage (Lintner, 1956; Pruitt & Gitman, 1991; Aivazian, Booth, & Cleary, 2003; Pourheydari, 2009; Baker & Powell, 2000). However, many study examine dividend policy without particular sector or industry. only few study examine

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dividend policy in China. Hence, we will focus on China's high-tech industry this time which is that one of the most important industry in China.

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1.2 Problem statement

China's economy was growing fast in the past 30 years with 10% on the average per year. In 2010, China surpassed Japan to be global second largest economy and to be second only to US. One of reason why China's economy growing so fast is high speed development of high-tech industry. Hence, China is also involved in dividend policy studying maybe differ from other countries. In this regard, dividend policy in high-tech industry play vital roles in supporting economy growth of the country. In supporting to economy growth, government have encouraged high-tech industry development since 1990. A large number of high-tech firms emerged in this period. On another hand, China is planning to transform from "made in China" to "design by China" (China's white book on economy 2015). Hence, dividend policy on high-tech industry is becoming more and more important in China.

High-tech companies need to spend huge capital on developing new products and sharping its technology. Therefore, most companies choose to list their firm on the stock market for financing. Thus, it is important for high-tech firms to make right dividend policy to maximum shareholder's interest (Allen & Michaely, 1995). In addition, most Chinese high-tech firms are younger compare to American high-tech firms. Most Chinese firms with high growth rather focus on capital accumulation and expansion than pay dividend to shareholders (Zhenglin , Shao & Yungang, 2004; Wang, & Wandler, 2011). According to previous study about dividend policy in china, only 47% of Chinese listed firm pay dividend from 1993 to 2006 (Wei & Xiao, 2009). Currently, there are only few study about dividend policy of listed Chinese companies, and most of the study focus on developed market like US, UK. Glen, Karmokolias, Miller, & Shah, (1995) found that the firms in emerging market pay more attention on dividend payout rate than what they do on level of dividend paid. Thus, dividend

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payments tend to be more volatile in emerging markets than in developed countries. This result also being supported from study of dividend policy in China (Wang, Manry, & Wandler, 2011b). The authors found dividend payout ratio in China is in between payout ratio of emerging market and developed market. However, the authors did not explain about the factors which affect dividend payout ratio in China. Huang, Shen, & Sun (2011) found profitability are significant positively influence on dividend payout ratio in China. Thus, the purpose of this study is to examine the factors that influence the dividend policy in China's high-tech industry. Meanwhile, we also interested to know how many percentage of Chinese listed firm pay dividend for more than 5 years and less dividend payout than 5 years.

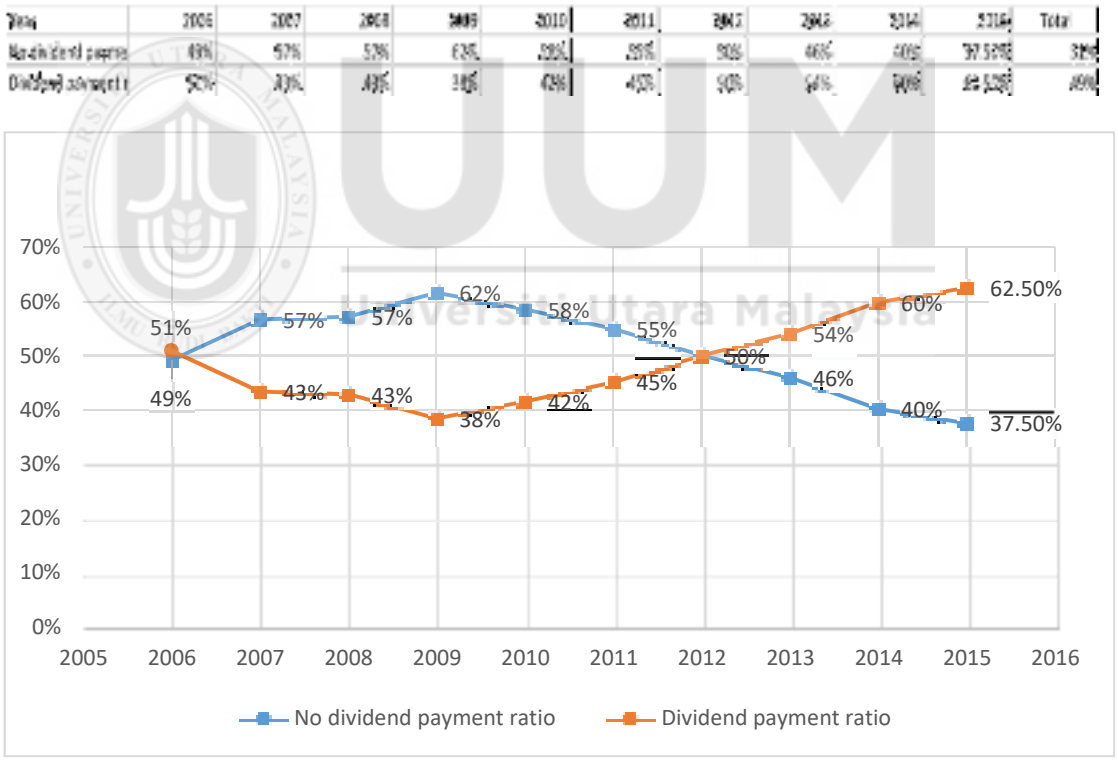

Figure 1.2 Ratio of willing to pay dividend over total sample firms from 2006 to 2015.

Graph 1.2 shows the ratio of firms which pay dividend over total sample firms from 2006 to 2015. There are only 49% firms like to pay dividend in period from 2006 – 2015, mean less half high-tech firms will pay dividend to shareholders, which much

less firm would like to pay dividend compare with developed market. The reason cause Chinese high-tech firms not like to pay dividend maybe that dividend policy was applied in Chinese firms quite late. From 2006 – 2007, the number of firms which pay dividend was decreasing maybe it affected by world financial crisis.

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1.3 Research Objectives

There are three objectives in this study:

1. To identify the percentage of China's listed high-tech firms which pay dividend from 2006 to 2015.
2. To identify how many high-tech firms which paid dividend for 0 – 3 years, 4 -7 years and 8 – 10 years from 2006 to 2015.
3. To identify whether leverage, profitability, growth opportunity, liquidity and firm size have impact on the dividend payout ratio for China's high-tech firms.

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1.4 Research Questions

This study will answer following questions:

1. How much percentage of China's listed high-tech firm paid dividend to shareholders from 2006 to 2015?
2. How many high-tech firms have paid dividend for 0 – 3 years, 4 -7 years and 8 – 10 years from 2006 to 2015?
3. Does leverage, profitability, growth opportunity, liquidity and firm size have impact on dividend payout for China's high-tech industry?

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1.5 Significance of Study

The significance of the study are as follow:

1. This study will help corporate manager of high-tech firms to identify whether they should pay dividend to shareholder or not.
2. This study will help government policymaker to understand the determinant of dividend policy in high-tech industry. It maybe can be reference to them make decision.
3. This study will provide more detailed information for investors or shareholder who interested on stock of high-tech companies. It also can provide which companies has good dividend payment in past 10 years.
4. Furthermore, this study can contribute knowledge for researchers and academic on dividend policy of Chinese high-tech industry. In addition, this study can help them understand whole picture of Chinese high-tech industry.

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1.6 Limitations and Scope

This study aims to identify the factors that impact on dividend payout ratio in Chinese high-technology firms from 2006 until 2015. The independent variables of this study are firm size, opportunity, liquidity, leverage and profitability

There are some limitations in this study:

1. Due to most China's high-tech companies are still young, thus most companies never paid dividend, it will influence on validity.
2. Due to time constrain, thus it's impossible to choose which company is qualified to be sample, if the size of sample is limited, the value of variable will be affected too.
3. Most listed Chinese firm are state controlled, thus it will increase uncertainty for result.
4. Some companies are not providing full final report, with limit size of sample, so the finding of this study cannot generalize to all high-tech companies.
5. In the annual report, firms may provide a positive information about the financial performance to their investors as possible, that may cause different result.

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1.7 Organization of Study

This study consists of five chapters, chapter one is introductions and background, and briefly introduce dividend policy and its background in Chinese high technology industry. This chapter also introduce the main problem of dividend policy in current research, the objective and research questions of this study, the significant, scope and limitation of this study. Chapter two is the literature review, which provides overview of current dividend policy, theories and the factors may affect dividend payment policy. Chapter three is about the research framework, research design, hypotheses, measurement of variables, data collection, sampling and data screening. Chapter four is about empirical analysis and findings of the study. Chapter five presents summary of result, make conclusion for this research, and recommendation for future research.

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Chapter two

Literature review

2.1. Introduction

This chapter will discuss some existed theories related to this study and review previous empirical studies. Mainly, this chapter makes detail explanations about dividend policy and the factors that may affect the dividend payment of the firm. There are 5 sections under this chapters: section 2.2 definition of dividend, section 2.3 traditional dividend theories, section 2.4 modern dividend theories, section 2.5 dividend policy in China, and section 2.6 variables with related dividend policy.

2.2 Definition of dividend

Dividend is a form of payment that distribute earning to shareholder of firm. Dividend can be distributed by two form: cash dividend and stock dividend. Cash dividend is a type of payment that firm pay dividend to shareholder in cash, while stock dividend is another form of payment by share.

Dividend policy is a size and pattern of cash or share distribution to shareholders over time (Lease et al., 2000). General speaking, dividend can be explained in narrow sense and broad sense. In a narrow sense, dividend policy is the ratio between the retained earnings and dividend payments. And in a broad sense, dividend policy has also included: the dividend announcement day, dividend payment ratio, dividend payments related funding problems.

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2.3 Traditional dividend theory

2.3.1 Dividend Irrelevance Theory

Dividend Irrelevance Theory stated dividend policy has no effect on share price or market value of firm (Miller & Modigliani, 1961). According to opinion of Miller and Modigliani (MM), dividend irrelevance theory is not working unless it based on 4 assumptions: (1) no transaction cost, (2) no taxes, (3) no flotation cost and (4) perfect capital market. Under such market environment, factors can affect firm value only the profitability and the ability of the management team.

2.3.2 Bird in The Hand Theory

Gordon.M.J. developed Bird In hand theory in 1963 and it state that some investors prefer cash in their hand rather than capital gain in future. firms with lower rating will cause firms are more difficult to raise funds from the capital market. Thus, firms expect to get higher rating from rating institutions. Gordon.M.J. (1959) stated that investors prefer current dividends due future capital gains are more risky and this shows there is positive relationship between current dividend payment and firm market value. Walter (1959) got consistent result in his research in same year. Bhattacharya (1979) suggest that stock price will be affected by the dividend payments. Mean the share price will decrease as dividend payment increase. Therefore, increasing dividend payment can reduce the future net cash flow. But it doesn't increase value of the company. Baker & Powell (2000)'s study indicates that it failed to clearly show "a bird in the hand" theory can explain dividend payment from the view of available empirical data.

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2.3.3 Poor tax theory

Litzenberger & Ramaswamy (1979) proposed the poor tax theory according to tax effect. This theory brings tax burden theory and relax the hypothesis of MM theory, mean assume no tax is in contrast with the income tax. Both companies and individuals have income tax in real life. Generally speaking, tax rates of capital gains will lower than the dividend income tax rate. Therefore, in order to reduce taxes, shareholders may prefer capital gains. Even assuming that both the income tax rate is the same, as the time value exist, pays RM10 in future better than pay RM1 now. Thus, the shareholder may still tend to capital gains.

2.4 Modern dividend theory

2.4.1 Clintele Effect Theory

On the basis of traditional dividend policy theory, some modern dividend policy theory was developed. Such as clientele effect theory, which according to the investors marginal tax rates. Investors is divided into two types, investors with high marginal tax rates (high income group) tend to be capital gains. In contrast, investors with lower marginal tax rates (pension funds) tend to cash dividend. The theory is that the company should distinguish between different investors according to their preferences tend to conform to the group of dividend policy. Black & Scholes (1974) study found that investors weigh up the potential in accordance with the certain standard after receiving dividends the cost effectiveness of some of these investors tend to high dividend and the other part will tend to be low dividends. The theory of categorizing investors according to the dividend preference: dividend preference, dividends neutral type and dividend disgust. Each company's shares will attract a specific preference of investors in certain extend.

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2.4.2 Signaling Theory

M&M proposition assumed the information of firm are symmetric. But, in fact there is asymmetric information between the company internal and external. They proposed that the company's managers have more accurate information on firm's performance, investment decisions and firm's current earnings than investors from outside firms. Benartzi et al. (1997) applied signal theory to examine whether the change of the past and the future earnings changes will affect dividend payout. But they found that there is no relationship between dividend and company future earns. (Chen 2009) also failed to find dividend as a signal of stability of firm's future earns.

2.4.3 Agency Theory

Agency theory is one of the most vital theory in finance that was developed by (Jensen & Meckling, 1976). Agency theory was defined as 'a contract under which one or more persons (who known as principal) deal with another person (who known as agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent'. Agency relationship refers to the relationship between the three of the following: shareholders and creditors, management and shareholders, minority shareholders and controlling shareholder.

i. Shareholders and creditors

Jensen & Meckling (1976) found that the companies exploit the rights and interests of creditors by some ways. These ways include: lower investment, increased dividend distribution and the debt financing. Kalay & Michaely (2000)study the principal-agent relationship between shareholders and creditors. They found that if company pay a higher rate of dividend payment but it has less investment opportunity, it may result in excessive investment cost. In contrast if the company has good investment

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opportunity, but the dividend payment rate is low may effectively reduce the cost of companies on financing.

ii. Shareholders and management

Berle & Means (1932) stated that the management will not perform their duty for company in the best way. Thus they proposed the theory that company management and ownership is highly fragmented in modern company management. Rozeff (1982) stated that there are two benefits if company pay dividend: it can improve corporate performance. On the another side, the payment of cash dividend can effectively lower retain earning of companies and control excessive investment.

iii. Majority shareholder and minority shareholders

La Porta, Lopez-De-Silanes, & Shleifer (1999) study 27 companies listed on developed markets. There are 68.59% of sample companies exist majority shareholders. Claessens, Djankov, & Lang (2000) used 3000 listed companies sample in East Asia region. They found most companies exist majority shareholders. Shleifer & Vishny(1986) found that the stock price rising will bring benefits to all the shareholders. The company majority shareholder and minority shareholders tend to monitor the supervise management of business in specific way. Denis & McConnell (2003) found that the higher the ownership concentration, the stronger ability of majority shareholders have. As the major shareholders have absolute advantage in the company, they can control whole resources of firm and make decision.

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2.4.4 Pecking Order Theory

Pecking order theory is another important theory in finance, it was developed by Myers & Majluf and Myers in 1984. Pecking order theory defined as a stage of financing with firm's retained earnings first, then followed financing is debt financing and the last stage is external equity financing by issuing new share (Gitman & Zutter, 2002). Fama & French (2001) and Al-Malkawi (2007) found a positive relationship between profitability and dividend and this is consistent with the pecking order theory. Al-Malkawi (2007) and Mollah (2011) identified a positive relationship exist between firm size and dividend payment as larger firms have advantages to access capital market for external financing.

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2.5 Dividend policy in China

Compare to developed markets, Chinese listed companies are younger and in a rapid growth developing with a focus on capital accumulation and expansion (Shao & Lin, 2004; Wei & Xiao, 2009).

In China, cash dividend is taxable income to shareholders, while stock dividend is not taxed. In the absence of cash dividends, shareholders must sell stock as a way to extract its tax should be part of the accumulation of wealth in the form of capital gains; In addition, there is no capital gains tax in China. Therefore, stock dividends may provide a convenient tool for managing capital gains to extract individual shareholders.

Two third of companies are controlled by state in china, either directly or indirectly. So state has ability to determine its dividend policy of the firms it controlled. Wang, Manry, & Wandler, (2011) used firm data from the Chinese stock market from 1998 to 2008, to examine stock dividend policy in china. The paper found that both the dividend amount and dividend likelihood of cash dividends are declining in state ownership

Baiyao (2011)examines and compares the level and stability of dividend policy in China and the USA. The sample space is pooled by selected US firm from 1991 to 2007 and selected Chinese firms from 1991 to 2007. It found same result for both countries that dividend pay-outs are positive with size, and negative with growth and debt level. While dividend pay-outs are positive with cash in US firms, the relationship is reversed in China firm. Retained earnings and dividend pay-out are ambiguous relationship for Chinese firms. But the level of retained earnings significantly positive relationship with dividend policy in US firms.

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2.6 Variables with related Literature Review

There are a lots of factors may affect firm's dividend policy making. This paper includes six factors that may affect dividend policy in the Chinese high-tech industry. Those factor include liquidity, profitability, growth opportunity, firm size and leverage.

2.6.1 Liquidity

Liquidity is used to measure whether the company has ability to cover its payment obligations with its current assets. The firms with higher liquidity or have higher current assets are more likely to pay higher dividends to firm's shareholders than firms with lower liquidity position. Ho (2003) and Kim & Zeng (2009) revealed that there was a significant positive relationship between dividend payout and liquidity. Their findings support signaling theory. Alli, Khan, & Ramirez (1993) pointed out that opportunity has more influence on dividend payout than current earnings because current earning does not mean a firm's ability to pay dividends. Firms which have a bad or unstable liquidity position are less likely to pay dividends than firms which have good or stable liquidity position (Amidu et al, 2006; Anil et al, 2008; Gupta and Banga, 2010). However, Gill, Biger, Tibrewala, & Palmer (2010) failed to find that there was significant positive correlation between opportunity dividend payout. Their results support that opportunity is not key factor that influence dividend policy making. Meanwhile, Ayub & Mehar (2005) found a significant negative correlation between liquidity and dividends payments. Ayub et al (2005) and Al-Najjar & Hussainey (2009) stated that liquidity is not factor affect dividend payment, mean that firms with good or bad liquidity position will not influence on dividend payout to shareholders. Their findings are consistent with (Imran, 2011) study. Some researchers pointed out that there was negative relationship between liquidity and dividend payout; it means firms'

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current asset position will be reduced if firms pay high cash dividends and it may lead to low liquidity position (Baker & Powell, 2000; Myers, M., & Bacon, 2004; Kania & Bacon, 2005. Al-Najjar et al 2009). Kapoor, Anil, & Misra (2010)and Adu-Boanyah, Ayentimi, & Frank (2009) found that there was an insignificant negative relationship between liquidity and dividend policy.

2.6.2 Leverage

Firm leverage ratio is considered as one of the key factors that affect firms pay dividends to shareholders or not (Jensen, 1986; Crutchley & Hansen, 1989; Aivazian, Booth, & Cleary, 2003). They showed that firms with a high leverage ratio are more likely to pay less dividends. Low level of leverage will increase the firm's capability to have remaining profit to pay dividends. Hence, leverage has significant negative influence on dividend payment. Kowalewski, Stetsyuk, & Talavera (2008) also proved that firms with high leverage are pay lower dividends then firms with low leverage. Moreover, Rozeff (1982) revealed that firms with a low level of debt prefer to have high dividend payout ratios in order to minimize the transaction costs associated with external financing. Meanwhile some researchers found an insignificant but negative association between financial leverage and dividend payout (Al-Najjar et al, 2009; Al-Ajmi et al 2011; Islam et al. 2012).

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2.6.3 Firm size

The companies with large size usually have better way to enter capital market and easier to raise its fund from capital market with lower cost and less restrictions compare to small firms. Thus the firms with large size more like to pay higher dividend to shareholders (Deshmukh, 2003).

Baskin (1989) found that firm's size, leverage, dividend distribution and growth opportunities have impact on dividend payout. The key factors that impact on dividend decision are the expected future earnings, size of the firm and other factors. Juhmani, (2009)study relationship between firm size and dividend with sample included 35 listed companies in Bahrain Stock Exchange from 2006 to 2007, he used the descriptive statistical to analysis data. He found dividend payout has significant relationship with the company size, profitability, and previous year's dividend in Bahrain Stock Exchange.

Ho (2003) also argued that large companies are more like to pay dividends, while SME will pay less dividend and no dividend. Osman & Mohammed (2010) found the most important factors have impact on dividend policy in Saudi Arabia they are firm size and profitability. Firm age, government ownership and leverage have significant effect on the dividend policy of non-financial firms. Imran (2011)) studied 36 firms that are listed on Pakistan's Stock Exchange from 1996 until 2008, he argues that earning per share, previous dividend pay-out yield, sales growth, profitability and the size of the firm are the most vital factor of dividend policy.

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2.6.4 Profitability

Profitability has been explained as how is ability of firm to make profit from business activities, which used to measure whether the firm has strong ability to get profit or not. Profitability is also the most important factor and key reason directly impact dividend making decision. The firm with high profitability more like to pay higher to shareholders. It has been proved by huge numbers of researchers to identify the significant relationship between profitability and dividend pay-out (Naceur, 2006; Matthias A. Nnadi, 2008; Foroghi, Karimi, & Momeni, 2011; El-Ansary & Gomaa 2012).

The pecking order theory can explain relationship between profitability and dividend payout, usually the firm with less profitability will not like to pay dividend because cost of issuing debt and equity financing, ceteris paribus. The firm with high profitability like to pay dividend and generate retained earnings to financing investment.

Issa (2015)studied relationship between dividend pay-out and profitability, opportunity, firm size, growth opportunities, business risk and market to book value with sample of 284 firms listed on the Kuala Lumpur Stock Exchange (KLSE) from different sectors, they found Beta, profitability are the common variables which have impact on dividend pay-out across various sectors except in technology sector which is not significantly associated with dividend pay-out.

However, Bogna (2015) found that there is a significant negative correlation between profitability and dividend payout. This show that it does not mean that firms with higher profitability will pay more dividends to shareholders. Meanwhile Chen and Steiner (1999), Kania & Bacon (2005), Kapoor, Anil, & Misra (2010)and Islam et al. (2012) also show that profitability of firms has negative impact on dividend payout .

2.6.5 Growth opportunity

Myers (1997) defined growth opportunities as the proportion of firm value represented by assets-in-place, the lower the fraction of firm value accounted by assets-in-place, the greater the fraction are the firm's growth opportunities. Mason and Merton (1985) Points out that the growth of companies is relatively more capacity expansion project, new product line, the acquisition of other companies and the maintenance existing assets.

Al-Malkawi* (2007) found a negative relationship between growth and dividend distribution, shows that the enterprise in the growth stage investment opportunities, financing these opportunities from the internal funds, the firms must retain more and pay little or no dividends. These findings can be used to support pecking order theory. Patra et al (2012) used Generalized Method of Moments to estimate factor that influence firm's dividend pay-out and they found opportunity, size, and liquidity increase probability to pay dividend, while growth opportunity, risk and financial leverage decrease probability to pay dividend.

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CHAPTER THREE

METHODOLOGY

3.1 Introduction

The present chapter expound the methodology adopted in the study to investigate the relationship between the dividend payout ratio and the chosen variables to achieve the objectives of this study. It introduces the theoretical framework, hypotheses development, research design, data collection, model specification and multiple regression and measurement of variables.

3.2 Theoretical Framework

The framework demonstrates that the relationship between the determinant of high-tech firm's dividend policy. There are six independent variables that are firm specific variables. The dividend payout ratio is dependent variable. Figure 3.1 illustrates the theoretical framework of the study.

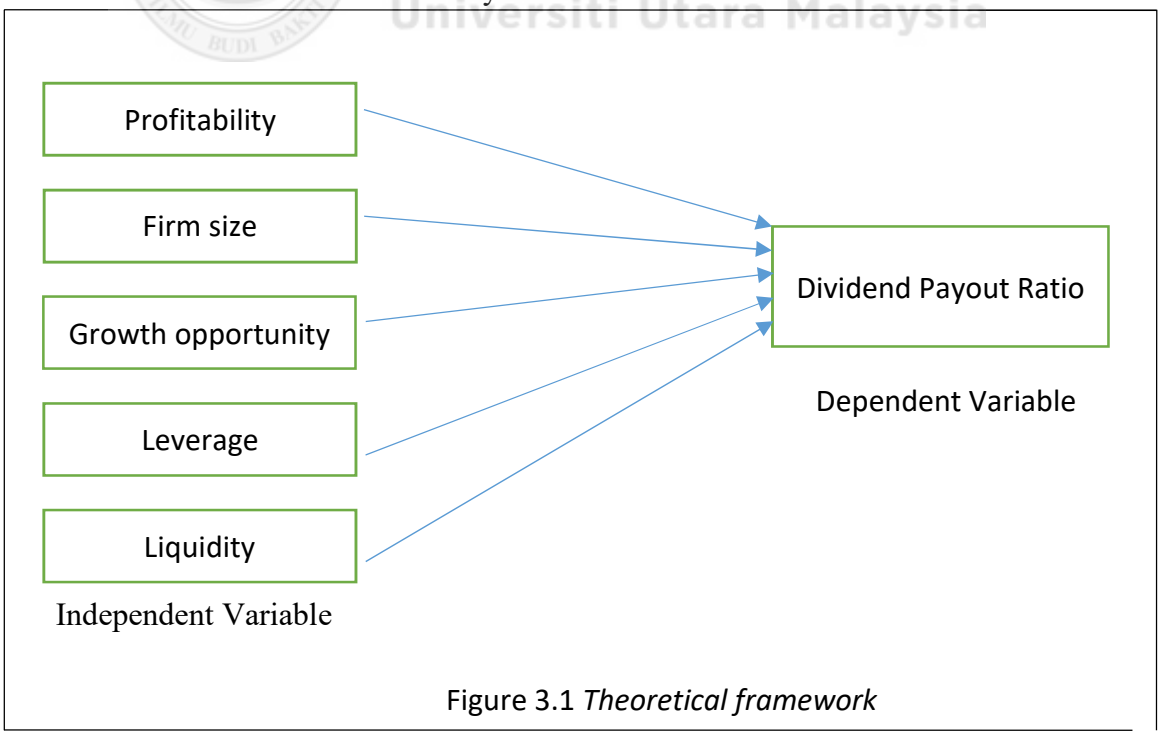

Figure 3.1 *Theoretical framework*

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3.2 Hypothesis Development

In this section, we will discuss the relationship between the independent variables and dependent variable. Meanwhile, we are also interested to know how many Chinese high-tech firms and how many percentages of them like to pay dividend from 2006 to 2015. In this study, we developed hypotheses based on past literature. The findings of this study will help us to make decisions on whether to accept or reject the null or alternate hypothesis.

3.2.1 The dependent variable

Dividend payout Ratio

Dividend payout ratio (DPR), defined as the ratio of dividend per share to earnings per share, is considered as the dependent variable in the present study.

3.2.2 The independent variables

Profitability

Amidu & Abor (2006) took sample of 22 firms listed on Ghana from 1998 to 2003, to measure the profitability that is determined by return on assets and return on equity as parameters. He pointed that (ROE) return on equity and (ROA) return on assets have positive strong relationships with dividend payout ratio.

Gill, et al. (2010) used samples of 226 firms listed on US exchange stock in 2007. They found (ROE) return on equity and (ROA) return on assets are significant determinant of dividend payout.

Guizani & Kouki (2011) found that there is a positive association between return on assets (ROA) and dividend payouts. Meanwhile, AL-Kuwari (2010) stated

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government ownership and profitability of firms raise the possibility of paying dividends.

H1: There is significant relationship between dividend payout ratio and profitability.

Growth Opportunity

Myers (1997) defined growth opportunities as the proportion of firm value represented by assets-in-place, the lower the fraction of firm value accounted by assets-in-place, the greater the fraction are the firm's growth opportunities. Mason and Merton (1985) Points out that the growth of companies is relatively more capacity expansion project, new product line, the acquisition of other companies and the maintenance existing assets.

H2: There is significant relationship between growth opportunity and dividend payout ratio.

Leverage

Wang, at al.(2011) used samples of 879 Chinese companies, to measure relationship between leverage and dividend payout. They found leverage has significant effect on dividend paid. Malik, et al. (2013) used panel data of 100 financial and non-financial Pakistan companies during 2007 – 2009. They found leverage has positively correlation with dividend payout ratio. Other empirical study also found there is significant relationship between dividend payout and leverage (Higgins, 1972; Myers, et al. 1984; Zhenglin, et al 2004).

H4: There is significant relationship between leverage and dividend payout ratio.

Firm size

The companies with large size usually have better way to enter capital market and easier to raise its fund from capital market with lower cost and less restrictions compare to small firms. Thus the firms with large size more like to pay higher dividend to shareholders (Deshmukh, 2003).

Juhmani, (2009) study relationship between firm size and dividend with sample included 35 listed companies in Bahrain Stock Exchange from 2006 to 2007, he used the descriptive statistical to analysis data. He found dividend payout has significant relationship and firm size.

H5: There is significant relationship between dividend payout ratio and firm size.

Liquidity

Kim and Zeng (2009) used an example of 69 US's public traded hospitality companies in period of 2005. They found there was a positive correlation between dividend policy and liquidity. Ho (2003) used fixed effects regression model to examine panel data 2235 observations from 1992 to 2001 that listed on Australian stock market and Japanese stock market. They found there is no significant difference between Australian and Japan in liquidity that have positive relationship with dividend payment. However, some previous research failed to find there is significant correlation between liquidity and dividend payout (Kapoor et al. 2010 and et al. 2009).

H6: There is significant relationship between dividend payout ratio and liquidity.

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3.3 Research Design

This study is designed to examine the trend of dividend paid for Chinese high-tech firms and explain the relationship between dependent variable and six independent variables from 2006 to 2015. We categorized data with three groups according to years of dividend paid, which is short term (0-3 years), medium term (4-7 years) and long term (8-10 years). Hypotheses testing is used to decide whether there is a significant correlation between the dependent variable and independent variables. The independent variables include growth opportunity, leverage, firm size, profitability and liquidity while the dividend payout is the dependent variable

3.4 Variables Definition

1. Dividend payout – dividend payout is the certain amount of dividends paid relate to retaining earning to investors (dividend payout = dividend per share / earnings per share).

2. Leverage – leverage refers to the amount of borrowed capital being used to increase potential return.

3. Profitability – profitability is measured business performance and ability that firms generate their profits.

4. Liquidity – liquidity refers to the firm's ability to meet their current liability with its current asset.

5. Firm size – size of firm is measured in terms of how large the firm is. Total asset is a benchmark to measure size of firm.

6. Growth opportunity – growth opportunity can be measured firm's future growth opportunity; it's measured by (Total assets t- Total assets t-1)/ Total assets t-1.

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3.5 Measurement of Variables

1. Dividend Payout = Dividend per Share to Earnings per Share
2. Leverage = Total Debt to Total Equity
3. Profitability = Return on Equity (Net Income to Total Equity Ratio)
4. Liquidity = current assets/ currents liability
5. Firm Size = The Natural Logarithm of the Total Assets
6. Growth opportunity = (Total assets t- Total assets t-1)/ Total assets t-1

3.6 Data Collection

This study examines the trend of Chinese high-tech firms paid dividend from 2006 to 2015 and determinants of dividend policy of Chinese high-tech firms, listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange 2006 to 2015. The data used in this study were extracted mainly from DataStream. In addition, we also used journals, books, research papers, and dissertations.

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There are 624 high-tech firms was listed on Shenzhen and shanghai exchange stock until 2015. However, a lot of companies with missing data has been deleted, and the final sample consists of 224 firms with a total of 2240 observations. As previous chapter mention, most of Chinese high-tech firms are younger in comparison to other developed market. Thus there are few firms like to pay dividend. Graph 3.2 shows the number of Chinese high-tech firm paid dividend from 2006 to 2015.

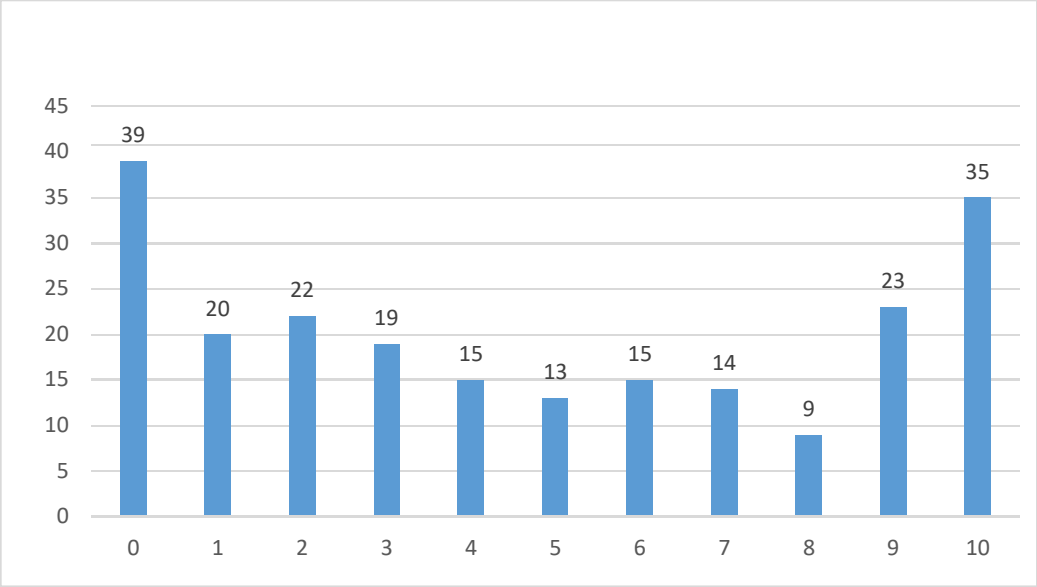

Figure 3.2 the firms of constantly dividend paid from 2006 to 2015

3.7 Sampling

In this study, we selected 244 high-tech firms which are listing in China. We used panel data covering the period from 2006 to 2015 for the 244 high-tech firms in China. We included firms that pay dividends and do not pay dividends. Table 3.1 shows the list of high-tech firms.

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The firms list of dividend paid with long term (8 – 10 years)

Name	Name	Name
SICHUAN CHENGFA AERO	SHAI.FOSUN PHARM.	XIAMEN FARATRONIC
JIANGXI HONGDU AVIATION	CHINA ANM.HUSBANDRY	AISINO 'A'
AVIC HELICOPTER 'A'	JINYU BIO-TECH.	SHANGHAI ZHIXIN
GUANGZHOU BAIYUNSHAN	ZHEJIANG MEDICINE	NARI TECH.DEV. 'A'
YUNNAN BAIYAO GROUP	JINLING PHARM	BEIJING ZHONG KE
LIVZON PHARM.GROUP	DONG-E-E-JIAO	HAN'S LASER TECH.
CHINA NAT.ACCORD MDC	JIANGZHONG PHARM.	GUIZHOU SPACE APPLIANCE
SHANGHAI PHARM HDG.'A'	CHINA RES.DBLE.-	BAOSHENG SCI. AND TECH
TASLY PHARMACEUTICAL 'A'	WUHAN HMNWL.HLTHCR	SIEYUAN ELECTRIC
JIANGSU KANION PHARMS.	BEIJING TONGRENTANG	UGC 'A'
CHINA NATIONAL MEDICINES	SHANDONG XINHUA PHARM	SHENGYI TECHNOLOGY
TIANJIN TIANYAO PHARMS.	FOUNDER TECH.GP	GUODIAN NANJING 'A'
ZHEJIANG HUAHAI PHARM.	SHENZHEN SED IND.	GUANGDONG GOWORLD 'A'
JIANGSU LIANHUAN PHARM.	WOLONG ELECTRIC GROUP	SHN.HUAQIANG IND.
ZHANGZHOU PIENTZEHUANG	JIANGXI LIANCHUANG	TBEA 'A'
JIUZHITANG 'A'	TELLHOW SCI-TECH	SHENZHEN KAIFA TECH.'A'
CHENGZHI 'A'	CHANGYUAN GROUP	FIBERHOME TELECOM.TECHS
ZHUZHOU QIANJIN PHARM.	BEIJING SL PHARMACEUTICAL	HENGTONG OPTIC-ELECTRIC
ZHEJIANG CONBA PHARM.	JIANGSU HENGRUI MEDICINE	ANHUI SUN-CREATE ELTN. 'A'
MAYINGLONG PHARM.GP.'A'	HENAN LINGRUI PHARM.	BRIGHT OCEANS INTER TELE
HUALAN BIOLOGICAL ENGR.	ZHEJIANG HISUN PHARM.	WUHAN YANGTZE COMM. 'A'
SHANGHAI KEHUA BIO ENGR.	TSINGHUA TONGFANG	SHANGHAI BELLING 'A'
DA AN GENE OF SUN YAT	DONG-E-E-JIAO	CITIC GUOAN INFO.IND.'A'
JIANGZHONG PHARM.'A'	ZTE 'A'	

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The firms list of dividend paid with medium term (4 – 7 years)		
Name	Name	Name
AVIC AVTN.ENN.CORP.	BEIJING TIANTAN BIOLOGICAL	JILIN SINO MICROEL.
HPGC RENMINGTONGTAI	JILIN AODONG PHARM.GP.	HUAGONG TECH.
KUNMING PHARMACEUTICAL	ZHEJIANG ZHENYUAN 'A'	BEIJING DYNAMIC POWER CO.
KANGMEI PHARM.'A'	APELOA 'A'	EASTCOMPEACE TECHNOLOGY
YABAO PHARM.GROUP 'A'	HANGZHOU SILAN MICROELS.	TONGLING JINGDA SPC
TIANJIN ZHONGXIN PHARM.	EASTERN COMMS. 'A'	GUANGDONG FENGHUA ADVD.
JOINCARE PHARM.GP.IND.	CHINA GREAT WALL CMP. SHN.	CITYCHAMP DARTONG
CHINA RES.SANJIU MED	UNISPLENDOUR 'A'	JIANGSU ETERN
GUIZHOU YIBAI PHARM.	CHINA SPACESAT 'A'	GREATWALL INFO.IND.
JIANMIN PHARM.GP.'A'	TIANMA MICROELS.	AVIC AIRCRAFT 'A'
SHANGHAI SHYNDEC PHARM.	HENAN PINGGAO ELEC.	HARBIN PHARMS.GP. 'A'
BAODING TIANWEI BAOBIAN	JILIN AODONG PHARM.GP.	

The firms list of dividend paid with short term (0 – 3 years)		
Name	Name	Name
SWAN FIBER 'A'	SHAANXI FENGHUO ELTN. 'A'	CPT TECH.(GROUP) 'A'
AVIC AERO-ENGINE CNTLS.	SHAI.POTEVIO 'A'	SHAI.FEILO ACOUSTICS 'A'
SOUTHWEST PHARM. 'A'	XI'AN HONGSHENG TECH.'A'	CHINA SCTY.&.FIRE 'A'
HANGZHOU TIANMUSHAN	SHAI.ET.CHIN.CMP.'A'	INESA INTEL.TECH 'A'
JIANGSU SIHUAN BIOENG.	ROUTON ELECTRONIC 'A'	SHN.ZHONGHENG HUAFA 'A'
ZHONGYUAN UN.CELL	JIANGSU ZHONGTIAN TECHS.	SHANGHAI LINGANG HDG.'A'
SHENZHEN CAU TECH.'A'	JIANGSU CHANGJIANG ELTN.	SHAANXI BAOGUANG VACUUM ELT
SHANDONG JINTAI GROUP 'A'	BEIJING XINWEI TECH.GP. 'A'	CHENGDU XUGUANG ELTN.'A'
NORTH CHINA PHARM. 'A'	SHENZHEN SDG INFORMATION 'A'	NORTH ELECTRO-OPTIC 'A'
TONGHUA DONGBAO PHARM.	INSPUR ELT.INFO.IND	INFORE ENVM.TECH.GP.'A'
FAR EAST SMARTER EN.'A'	YINYI REAL ESTATE 'A'	ANHUI TONGFENG ELEC. 'A'
GUANGXI FUTURE TECH.'A'	NINGBO BIRD 'A'	BGRIMM TECH.CTD. 'A'
ANHUI FENGYUAN PHARM.'A'	FOCUS MDA.INFO.TECH.'A'	GALAXY BIOMED.INV.'A'
BEIHAI GOFAR MARINE OLOGICAL	JIANGSU HONGTU HI.TECH 'A'	SICHUAN JIUZHOU ELEC.'A'

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Cont. The firms list of dividend paid with short term (0 – 3 years)		
Name	Name	Name
HUADONG MEDICINE 'A'	GOHIGH DATA NETWORKS TECH.'A'	LANZHOU GT.WALL ELECT. 'A'
GRAND AUTOMOTIVE ORD	DATANG TELECOM 'A'	ACHENG RELAY 'A'
GUANGXI WUZHOU ZHONGHENG	STELLAR MEGAUNION 'A'	HENAN ANCAI HI-TECH 'A'
HUBEI YANGFAN HOLDING	GRINM ADVD.MATS.'A'	HUANGSHI DONGBEI ELECT. APP.'B'
HUAPONT-NUTRICHEM 'A'	SICHUAN HUIYUAN OPTICAL COMM	NORTHEAST ELECT.DEV. 'A'
ZHEJIANG JINGXIN PHARM.	PCI SUNTEK TECH.'A'	SANAN OPEL.'A'
ELION CN.EN.'A'	TELLING TELECM.HLDG.	IRICO DISPLAY DEVC. 'A'
TIELING NEWCITY IHDG.'A'	NANJING PANDA ELEC.	CHINA-KINWA HI.TECH.'A'
SHENZHEN NEPS.BIOENG.	JIANXIN MINING 'A'	DASHENG TIMES CULTR. 'A'
SHANDONG SHANDA WIT	NANJING PUTIAN TELECOM. 'B'	GUIZHOU CZN.TIANZHENG HLDG.'A'
TIBET RHDPHAR.HLDG. 'A'	TIANJIN XINMAO SCTC.'A'	HUAMEI HOLDING (ZHEJ.) 'A'
HENAN TALOPH PHARM.STK. 'A'	BOE TECH.GP.'A'	DONGXU OT.TECHNOLOGY 'A'
HUBEI GUANGJI PHARM. 'A'	TDG HOLDING	INNER MOI.TIANSHOU TECH. &DEV.
TUS-GUHAN GROUP 'A'	LEAGUER STOCK 'A'	SHENZHEN SEG 'A'
ZHENXING BIOPHM.& CHM.	GUANGDONG MACRO	GENIMOUS TECH.'A'
NORTHEAST PHARM. 'A'	RENHE PHARMACY 'A'	DONGFANG ELECTRONICS
XIAN QUJIANG CULTR.TSM.	SHANDONG LUKANG 'A'	SHAANXI LIGENACE MINERAL
NANJING PHARM.'A'	TONGHUA GOLDEN-HORSE PHARM	NANJING HUADONG ELTN.
BOHAI WATER INDUSTRY 'A'	TIANJIN BENEFO TEJING ELECTRIC	KANGXIN NMTS.'A'
SHENZHOU YIQIAO INFO.'A'	FUREN PHARM.GP.IND.'A'	GUANGDONG BOXIN INVESTG
GUANGYUYUAN CHS.HERBAL	CHANGCHUN HIGH NEW TECH.	SHENZHEN HUAKONG SEG 'A'
GINWA ENTER.(GROUP) 'A'	CHONGQING TAIJI IND. (GP.)	CHINA ZHENHUA (GP.)SCTC. 'A'
PKU HEALTHCARE 'A'	BOHAI WATER INDUSTRY 'A'	CHINA AEROSPACE TIMES ELTN.'A'
SEALAND SECURITIES 'A'	SHENZHOU YIQIAO INFO.'A'	ADDSINO
CHINA TIANYING 'A'	GUANGYUYUAN CHS.HERBAL MDCIN	DIGITAL CHINA INFO.SER. 'A'

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3.8 Techniques for Data Analysis

The software Statistical Package of Science Social (SPSS) and Eviews 9SV was applied to analyse data in this study. The analysis comprises descriptive statistics, correlation of variables, regression model analysis and analysis of variance (ANOVA).

3.9 Study Model

Pooled Ordinary Least Squares Regression Model will be applied in this study. The main purpose of this model is to test and analysis factors that affect the dividend policy in the Chinese high-tech industry. It examines which independent variable have an influence on the dependent variable. Besides, it is also used to interpret the correlation between the independent variables and dependent variable.

Equation:

$$Y = \beta_0 + \beta_1 X1 + \beta_2 X2 + \beta_3 X3 + \beta_4 X4 + \beta_5 X5 + \beta_6 X6 + \varepsilon\tau$$

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Where:

Y = Dependent variable which represents dividend payout

β0 = intercept term;

β = Coefficient Beta value;

independent variables:

X1 = leverage;

X2 = profitability;

X3 = liquidity;

X4 = Growth opportunity;

X5 = Firm size;

ετ = the random error term

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

In this study, we use different models to generate our results. This chapter comprises seven sub sections: section 4.1 Introduction. Section 4.2 Descriptive statistic. Section 4.3 Collinearity test. Section 4.4 Pearson correlation. Section 4.5 multiple-linear regression analysis. Section 4.5 Analysis of variance (ANOVA). Section 4.6 discussion and section 4.7 Discussion. 4.8 Conclusion.

4.2 Descriptive Statistics

Descriptive statistics is consisted by the mean, standard deviation, minimum and maximum. The standard deviation measures the amount of dispersion or variation from the average. The mean deviation represents the average of the sample. Table 4.1 – 4.3 presented the results of mean differences on the variables used to estimate the result. It provides a summary of descriptive statistics for the variables employed in this chapter particularly mean and standard deviation.

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Table 4.1 *Descriptive Statistics (pooled data 2006-2015)*

Descriptive Statistics				
	Minimum	Maximum	Mear	Std. Deviation
dpr	-15	60	0.182	1.3979
LEG	-5.48	16.69	0.645	1.1238
lnpro	-5.94	999	11.5007	118.32542
logcf	-2.47	6.28	4.996	0.815
LIQ	0.000	28.29	1.7458	1.35851
FS	-4.523	5.343	0.233	0.430

Table 4.1 shows the descriptive statistics for all the six variables with full period from 2006 to 2015 in this study. Based on the table above, the mean of dividend payout is 0.18 and the standard deviation is 1.39. The lowest dividend payout is -15 percent and the highest is 60 percent. The minimum and maximum values for leverage are -5.48 percent and 16.69 percent respectively while the mean is 0.65 times and standard deviation is 1.12 time. The minimum and maximum values of profitability are -5.49 percent and 999 percent respectively while the mean and standard deviation are 11.50 percent and 118.31 percent respectively.

The mean and standard deviation of liquidity are 1.74 percent and 1.36 percent respectively while the lowest value is 0 percent and the highest value is 28.29 percent. The minimum value for firm size is -4.524 million while the maximum value is 5.343 million. The mean for firm size is 0.233 million with a standard deviation of 0.430.

Table 4.2 *Descriptive Statistics (short term 0-3 years)*

	N	Mean	Std. Deviation
dpr1	1180	0.1521	1.9074
LEG1	1180	1.378	12.30
LIQ1	1180	1.5821	1.83712
FS1	1180	0.202	2.149
logcf1	1180	4.6498	0.957
INpro1	1180	-2.8707	1.35473
Valid N (listwise)	1180		

group=1

Table 4.2 shows the descriptive statistics for all the six variables with short term in this study. Based on the table above, the mean of dividend payout is 0.15 percent and the standard deviation is 1.91 percent compared to value of 0.18 and 1.40 respectively for full period. The mean and standard deviation values of leverage are 1.38 times and 12.30 times respectively compare to 0.65 times and 1.12 times respectively for all

period. The profitability value of mean is 4.65 percent in short term compare to 11.50 percent in full period and the profitability of standard deviation is 0.96 percent compare to 118.33 in full period.

Table 4.3 *Descriptive Statistics (medium term 4-7 years)*

	N	Mean	Std. Deviation
DPR2	350	0.2803	0.80624
LEG2	350	0.9818	6.06447
LIQ2	350	1.7007	0.75162
FS2	350	0.569	1.581
logcf2	350	5.2509	0.54921
INpro2	350	-2.6131	0.86533
Valid N (listwise) group=2	350		

Table 4.3 shows the descriptive statistics for all the six variables with medium term in this study. Based on the table above, the mean of dividend payout is 0.28 percent and the standard deviation is 0.81 percent compared to value of 0.18 and 1.40 respectively for full period. The mean and standard deviation values of leverage are 0.98 times and 6.06 times respectively compare to 0.65 times and 1.12 times respectively for all period. The profitability value of mean is -2.61 percent in medium term compare to 0.86 percent in full period and the profitability of standard deviation is 0.96 percent compare to 118.33 in full period.

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Table 4.4 *Descriptive Statistics (long term 8-10 years)*

	N	Mean	Std. Deviation
dpr3	900	0.3492	0.75689
LEG3	900	0.4582	0.46878
LIQ3	900	2.5575	2.64285
FS3	900	0.489	1.065
logcf3	900	5.2624	0.56266
INpro3	900	-2.4078	0.77149

Table 4.4 shows the descriptive statistics for all the six variables with long term in this study. Based on the table above, the mean of dividend payout is 0.35 percent and the standard deviation is 0.76 percent compared to value of 0.18 and 1.40 respectively for full period. The mean and standard deviation values of leverage are 0.46 times and 0.47 times respectively compare to 0.65 times and 1.12 times respectively for all period. The profitability value of mean is -2.41 percent in long term compare to 0.77 percent in full period and the profitability of standard deviation is 0.96 percent compare to 118.33 in full period.

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4.3 Collinearity Test

Table 4.5 Collinearity Statistics

	Tolerance	VIF
LEG	0.831	1.204
lnpro	0.935	1.07
LIQ	0.869	1.15
FS	0.969	1.032
logcf	0.924	1.082
a Dependent Variable: dpr		

In this study, we examined our explanatory variables to determine whether the variables have multicollinearity or not. Table 4.5 presents the results of the collinearity statistics. The results showed that there is no collinearity for each of the independent

variables due to the value of the variance influence factor (VIF) which is lower than 10 and the tolerance value is greater than 0.1. The highest value for VIF is 1.204 and the lowest value is 1.032. This finding suggests that multicollinearity has not been a problem in the study.

4.4 Pearson Correlation

Table 4.6: Correlations

	Dividend Payout	Leverage	Profitability	Liquidity	PR	FS	logcf
Y: Dividend Payout	1	-0.035	.208**	0.034	.087**	.070**	0.009
X1: Leverage	-0.035	1	.186**	-.243**	.056*	-0.003	0.049
X2: Profitability	.208**	.186**	1	-.051*	0.015	-.054*	-0.038
X3: Liquidity	0.034	-.243**	-.051*	1	-.102**	0.032	.147**
X5: Firm size	.070**	-0.003	-.054*	0.032	-.108**	1	.083**
X6: Growth opportunity	0.009	0.049	-0.038	.147**	-.188**	.083**	1
** Correlation is significant at the 0.01 level (2-tailed) * Correlation is significant at the 0.05 level (2-tailed).							

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Table 4.6 presents the bivariate correlations between leverage, profitability, liquidity, growth opportunity, firm size and dividend payout. Based on the results, we found that profitability and size of firm have significant and positive correlations with dividend payout. However, liquidity and growth opportunity have a positive correlation with

dividend payout but it was insignificant. On the other hand, leverage has a negative correlation with dividend payout but are insignificant. The results of Pearson correlation analysis revealed that there is multicollinearity as the P/E value is above than 0.8.

4.5 Multiple Linear Regression Analysis

Table 4.7: Coefficients (pooled data 2006 -2015)

Coefficient						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-0.142	0.096		-1.483	0.138
	Leverage	-0.066	0.016	-0.12	-4.261	0.000
	Liquidity	0.026	0.012	0.058	2.126	0.034
	Firm size	0.003	0.000	0.240	9.22	0.000
	Growth opprtunity	0.04	0.018	0.058	2.162	0.031
	Profitability	0	0.000	0.057	2.167	0.030
a Dependent Variable:		dpr				

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$$= -0.142 - 0.066X1 + 0.026X2 + 0.003X4 + 0.04X5 + 0.00X6$$

(-1.483) (-4.261) (2.261) (9.22) (2.162) (2.167)

*The figures in parenthesis above are t-statistics.

Based on the t-statistics, we found that all independent variables tested and which are significant in predicting the dividend payout in the Chinese high-tech industry. These include profitability, leverage, liquidity, firm size and growth opportunity. This indicates that all variables leverage, liquidity, profitability, growth opportunity and firm size are factors that influence dividend payout in Chinese high-tech industry for full period.

Table 4.8: Coefficients (short term 0-3 years)

Coefficient						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.127	0.143		-0.886	0.376
	LEG	-0.068	0.025	-0.114	-2.675	0.008
	lnpro	0.000	0.000	0.072	1.766	0.078
	LIQ	-0.007	0.029	-0.01	-0.243	0.808
	FS	0.000	0.001	0.024	0.629	0.529
	logcf	0.036	0.028	0.051	1.273	0.203
a Dependent Variable: dpr b Selecting only cases for which type = 1.00						

$$Y = -0.127 - 0.068X1 + 0.00X2 - 0.007\,X3 + 0.00\,X5 + 0.036\,X6 + \varepsilon$$

(-0,886) (-2.675) (1.766) (-0.243) (0.629) (1.273)

Based on the t-statistics, we found that there are two out of six independent variables tested are significant in predicting the dividend payout in the Chinese high-tech industry. These include leverage. Meanwhile, the results show that they are statistically insignificant for liquidity, firm size and growth opportunity. However, profitability has slight significant on dividend payout. This indicates that liquidity and firm size are not major factors that influence dividend payout in Chinese high-tech industry for short term.

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Table 4.9: Coefficients (medium term 4-7 years)

Coefficient						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.284	0.258		1.1	0.272
	LEG	-0.051	0.02	-0.131	-2.55	0.011
	lnpro	0.018	0.036	0.033	0.51	0.611
	LIQ	0.008	0.03	0.013	0.258	0.796
	FS	0.005	0.001	0.617	9.7	0.000
	logcf	-0.048	0.042	-0.057	-1.155	0.249
a. Dependent Variable:		dpr				
b. Selecting only cases for which type = 2.00						

$$Y = 0.284 - 0.051X1 + 0.018X2 + 0.008\,X3 + 0.005\,X5 - 0.036\,X6 + \varepsilon$$

(1.1) (-2.55) (0.51) (0.258) (9.7) (-1.155)

Based on the t-statistics, we found that there are three out of six independent variables tested are significant in predicting the dividend payout in the Chinese high-tech industry. These include leverage and firm size. Meanwhile, the results show that they are statistically insignificant for liquidity, profitability and growth opportunity. This indicates that liquidity, growth opportunity and profitability are not major factors that influence dividend payout in Chinese high-tech industry for medium term.

Table 4.10 Coefficients (long term 8-10 years)

Coefficient						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.922	1.501		1.947	0.052
	LEG	-0.079	0.038	-0.107	-2.083	0.038
	lnpro	-0.098	0.024	-0.218	-4.047	0.000
	LIQ	0.024	0.01	0.124	2.367	0.018
	PR	-0.481	0.247	-0.112	-1.945	0.052
	FS	0.002	0.000	0.18	3.703	0.000
	logcf	0.024	0.033	0.04	0.751	0.453
a Dependent Variable: dpr b Selecting only cases for which type = 3.00						

$$Y = 2.922 - 0.079X1 - 0.098X2 + 0.024\,X3 + 0.002\,X5 + 0.024\,X6$$

(1.947) (-2.083) (-4.047) (2.367) (3.703) (0.751)

Based on the t-statistics, we found that there are four out of six independent variables tested are significant in predicting the dividend payout in the Chinese high-tech industry. These include leverage, profitability, liquidity and firm size. Meanwhile, the results show that they are statistically insignificant for growth opportunity. This indicates that only growth opportunity is not major factor that influence dividend payout in Chinese high-tech industry for long term.

Table 4.10 shows that liquidity, firm size, and growth opportunity have a positive relationship with dividend payout. This indicates that high-tech firms will pay more dividends to shareholders when liquidity, firm size, and growth opportunity are higher. Meanwhile, leverage and profitability have an inverse relationship with dividend payout in the Chinese high-tech firms. It means higher leverage and profitability will lower the dividend payout.

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Table 4.11 Summary of the Regressions Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
0-3 years	0.17	0.03	0.033	4.53
4 - 7 years	0.617	0.381	0.371	2.43
8 - 10 years	0.788	0.621	0.617	2.13

a. Predictor Variables: (Constant), Profitability, Leverage, Liquidity, Firm size and FCF.
b - Dependent Variable: DPR.

R-sq indicates that the influence of independent variables on the dependent variables. It is found that the independent variables determine 3% of the DPR in short term (0-3 years), mean only 3% data can be explained. It is also found It is found that the independent variables determine 38.1% of the DPR in medium term (4-7 years). Meanwhile there are 62.1% of DPR can be determined by independent variables in long term (8-10 years).

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4.6 Analysis of Variance (ANOVA)

Table 4.12 Descriptive Statistics

Years of dividend payment	N	Minimum	Maximum	Mean	Std. Deviation
0 - 3 years	1180	-15	60	0.1521	1.9074
4 - 7 years	350	-2.31	10	0.2803	0.80624
8 - 10 years	900	- 0.30	13.30	0.35	0.76

Table 4.13 Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
0.237	2	2065	0.789

Table 4.14 Result of ANOVA

Y: Dividend Payout

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	14.802	2	7.401	3.798	0.023
Within Groups	4024.346	2065	1.949		
Total	4039.148	2067			

Table 4.12 shows the descriptive statistics for years of constantly dividend payment in short term payment 0-3years, medium payment 4-7 years and long term payment 8-10 years from 2006 to 2015. From the table, the minimum and maximum values of divided payout for 0 - 3 years were -15 percent and 60 while the mean and standard deviation were 0.15 percent and 1.91 percent respectively. Firms have a negative dividend payout due to losses in the net income in the year. Meanwhile, the minimum and maximum values of dividend payout for 3 – 7 years were -2.31 percent and 10 percent respectively while the average and standard deviation were 0.28 percent and 0.81 percent respectively. The minimum and maximum values of dividend payout for

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8-10 years were -0.30 percent and 13.30 percent respectively while the average and standard deviation were 0.35 percent and 0.76 percent respectively.

Table 4.13 presents the results of the test of homogeneity of variances. Levene's test probability dividend payout for years of constantly dividend payment was 0.789 which indicates that the p-value is greater than 0.05; Therefore, we can assume that the population variances for each group are relatively equal.

Table 4.14 reveals the results of ANOVA, it is clear that the p-value is less than 0.05, therefore it is statistical significant. The results of this study show that there is a difference in dividend payout between years of constantly dividend payment.

4.7 Discussion

The correlation analysis carried out helped in identifying the relationship between DPR and the others six driver variables included in the study; it profiled the relationship not only at high-tech industry level but also at the level of individual group which divided by years of constantly dividend payment.

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Pooled data showed that five of six variables viz., liquidity, profitability, firm size and growth opportunity indicate positive and significant correlations with dividend payout ratio (DPR). Meanwhile leverage has negative significant correlation with dividend payout ratio. This finding indicates that the six identified variables are the most significant driver variables of the dividend payout ratio in Chinese high-tech firms.

Analysis at the individual group indicates the following profile:

The correlation analysis in the dividend payment group demonstrated that two variables viz. leverage is correlated significantly with DPR; which that have weak correlation with DPR is profitability.

In the medium term which dividend payment constantly 4-7 years, two variables that have significant and positive correlation with DPR is firm size. Meanwhile leverage has negative significant correlation with DPR, others have very weak influence.

In the case of long term which dividend payment constantly 8-10 years, four variables that have influence on DPR are leverage, profitability, liquidity and firm size. One variables that have insignificant association is growth opportunity.

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4.8 Conclusion

Present study was to direct at identifying determinant variables of the dividend payout ratio of the listed Chinese high-tech firms. The findings of the empirical analysis carried out during the study using various tools & techniques, the determinant variables of DPR at the pooled data is presented in this section.

Table 4.20 Summary of correlations analysis

	Profitability	Growth opportunity	Leverage	Liquidity	Firm Size
all groups	√	√	√	√	√
short term(0-3 years)			√		
medium term(4-7 years)			√		√
long term(8-10 years)	√		√	√	√

The summary table of significant variables (Table 4.15) broadly reflects the outcome of the correlation analysis between independent variables and DPR. Table 4.15 reflects that firm size and leverage are the common variables which have influence on DPR across various group except in short term where it is found that the variable firm size is not significantly associated with DPR. Similarly, profitability and liquidity, which is significant determinant variable of DPR in long term, it has no influence on the dividend payout ratio of the companies in the short term and medium term.

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CHAPTER 5

CONCLUSION

5.1 Introduction

In this chapter, a summary of the findings is forwarded. It is then followed by implications of the study. A discussion on the limitations and recommendation for future research conclude the chapter.

5.2 Summary of findings

The main objective of this study is to identify the percentage of China's listed high-tech firms which pay dividend and how many firms paid dividend more than 8 years and less 4 years from 2006 to 2015. This paper also examines determinants of dividend policy for Chinese high-tech firms. The study improves upon the existing models from the literature of dividend policy in various ways among others are; the study presented new empirical findings on determinant of dividend policy among Chinese high-tech firms for the period between 2006 to 2015.

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The findings reveal that most Chinese high-tech firms not paid dividend in a 10-year period from 2006 to 2015. It concludes that high-tech less will to pay dividend, one of reason is Chinese firms are young and high-tech firms need more capital to expand their business after making profit. From data statistic, the Chinese high-tech firms which paid dividend decreased from 2006 to 2009. It was caused by the financial crisis in the world. However, the number of firms which paid dividend was constantly increasing from 2009 to 2015. According to signaling theory, increasing or constantly dividend payment can transfer positive signal to investors.

The analyses used secondary data derived from the annual reports of firms and data stream over a ten-year period from 2006 to 2015. Pooled Ordinary Least Squares (OLS)

model was used to estimate the regression equation and to determine which variable was affected payment decision in the Chinese high-tech firms. The regression model shows positive relationships between dividend policy and profitability, liquidity, firm size and growth opportunity. Meanwhile, the results also show negative associations between dividend policy and leverage.

The findings also reveal that profitability, liquidity, leverage, growth opportunity and size of firm are statistically significant factors which influence dividend decisions of high-tech firms in China. More profitable firms, larger firms, higher liquidity and growth opportunity were more likely to pay dividends to their shareholders. Besides, firms with higher liquidity was more likely to pay less dividends to their shareholders. However, only leverage has significant influence on dividend decision for the firms which paid dividend less four years in period from 2006 to 2015. Meanwhile leverage and firm size have significant influence on dividend decision for the firms which paid dividend 4 – 7 years from 2006 until 2015. All variables are significant influence on dividend decision for the firms which paid dividend above 8 years from 2006 to 2015 except growth opportunity.

In addition, leverage is statistical significant negative influence on dividend policy in different groups. Mean firms with a low leverage ratio prefer to pay more dividends. It was supported from previous literature (Crutchley et al, 1989; Jensen, 1992; Aivazian, et al, 2003; Liu & Hu, 2005).

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5.3 Limitation of the study

Several limitations were met in conducting this research. The first limitation is time constrained. This study is conducted within a three-month period, which is not enough to give a more in depth analysis. The second limitation of this study is that the samples only focused on the general high-tech industry, which are listed on Shanghai Stock Exchange and Shenzhen Stock Exchange. In fact, there are five sub-industries. The third limitation of this study is that stock dividend not involve in this study; therefore, the result not represent whole Chinese high-tech firms. In order to get more convincing and precise result a larger sample should be used.

5.4 Recommendations for future Research

The findings of the study are based on a sample of 224 companies listed companies grouped in three different periods on Shanghai Stock Exchange and Shenzhen Stock Exchange for period of 2006-2015. Future research may aim at covering data for longer period and more comprehensive data base on various sub-industry to arrive at more generic results. Future research also can be covering data for both dividend form (cash dividend and stock dividend).

Furthermore, there are many other variables that could be included for investigation in this study, such as age of firm, asset structure, tangibility, insider ownership, beta of the firm, growth opportunities, market price of share and so forth.

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