

# **FIRM-LEVEL FACTORS AFFECTING DIVIDEND PAYOUT IN LOGISTICS SECTOR IN CHINA AND THAILAND**

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## **Abstract**

**Objective** – The objective of this study was in order to the listed firms in logistics sector in China and Thailand can be better to understanding what firm-level factors affecting dividend payout of listed firms in logistics sector, how each factor affects the dividend payout of listed firms in logistics sector, and have any differences in factors affecting dividend payout of listed firms in the logistics sector between the two countries. In addition, the existing shareholders of the listed firms in the logistics sector in China and Thailand that will able to better understand the determinants of the dividend payout.

**Methodology** – A quantitative study was adopted for collecting available second data from China finance information and SETSMART database of Thailand. The study uses 25 listed firms and 7 listed firms in logistics sector of China and Thailand during 2006-2014 as samples respectively, using the methods of the pooled least squares (Pooled OLS), pooled estimated generalized least squares (Pooled EGLS), seemingly unrelated regression model (Cross-section SUR) and T-test for analyzing data.

**Finding** – There was difference between the dividend payout of firms in the logistics sector of China and Thailand during 2006-2014. The result shows all firm-level factors significant in dividend payouts in logistics sector in China and the others factors significant in dividend payouts in logistics sector in Thailand except ownership concentration (CONC).

**Keywords** - Dividend payout, Firm-level factors, Logistics sector, Factors

**Paper type** - Research paper

## **1. Introduction**

Through many researchers' empirical studies finds the higher dividend payout of firm should be to prove that the firm has a higher profit (Koul and Orsag, 2012; Bebczuk, 2004; Harry et al., 2006; Komrattanapanya and Suntraruk, 2013; Shi and Ouyan, 2004).

A leading construction firm from Thailand is seeking investment in building of the Dawel Deep-Sea Port. That is important circulation port for Thailand and the others country of ASEAN. This large project will develop a new shipping route which is greatly needed to maintain a thriving regional route. It will provide the logistics industry with an excellent route for the import and export of goods' from the countries of ASEAN (Chinachart, 2012). In addition, China is the most powerful economy emerging from that region in Asia (Worldfolio, 2014). With the expansion of its market scale and strong purchasing power, a new competitive stage is created for China. Under the environment a large investment opportunity is created in logistics industry of the China free trade area.

Based on the empirical studies founds each industry has related with different results of dividend payout (Gill et al., 2010; Harry et al., 2006). Therefore, this paper studies the firm level factors as profitability (Koul and Orsag, 2012; Gill et al., 2010; Anil and Kappor, 2008), sales growth (Samuel and Marfo-Yiadom, 2011; Kania and Bacon, 2005; Kim and Gu, 2009; Al-Kuwari, 2009), debt level (Chen et al., 2005; Gugler and Yurtoglu, 2003; Stacescu, 2006; Bena and Hanousek, 2006; Kowalewski et al., 2007), ownership concentration (Harada and Nguyen, 2011; Maury and Pajuste, 2002), the scale of firm (Warfield et al., 1995; Klein 2006; Jensen and Mecking, 1976; Holder et al., 1998; Komrattanapanya and Suntrauk, 2013; Fanta et al., 2013; Haidir and Utama, 2011), liquidity (Anil and Kapoor, 2008; Kim and Gu, 2009; Al-Shubiri, 2011), investment opportunities (Kim and Gu, 2009; Komrattanapanya and Suntrauk, 2013; Al-Shubiri, 2011; Anil & Kapoor, 2008) respectively, in which affected the dividend payout in logistics sector of China and Thailand. Analysis of dividend of the logistics sector in China and Thailand, trying to use the method of mathematical statistics to analyze firm-level what factors influence the dividend payout decision of these factors plays a great role. Finally, according to the make dividend policy decision and exiting investors of listed firms better to understand determine of the dividend payout while to gives the feasible suggestions.

## **2. Literature review**

### **2.1 Profitability**

Baker et al. (1985) conducted a questionnaire survey by 318 listed corporations on the New York stock exchange and found: in the manufacturing, wholesale and retail trade and public utilities in three industries, the profitability is most important factor influencing dividend policy is the expectation future earnings.

Shi and Ouyang (2004) was a study to show how a high cash dividend in the firm of XiNing Special Steel was used. They made a decision to use a series of convertible bonds as a financial decision for refinancing. This study showed how utilizing a high cash dividend in China's securities market could be used by XiNing as a method through a special high cash dividend as an adjustment of return on net assets as a percentage to achieve a high dividend and meet bond requirements required by the

regulatory authority of China. (Kong, 2003; Yuan and Su, 2004) arrived at the same conclusion.

Bebczuk (2004) studied dividend policy of listed firms in Argentina from 1996 to 2002 and confirms that profitability can definitely have a positive effect on dividend policy.

Kozul and Orsag (2012) used the method of cross section regression to study firm-level factors influencing dividend policy in 5 European countries, in which are Australia, Japan and United States of America respectively. The empirical studies found that profitability was statistically significant in each analyzed country with a positive effect on dividend level.

Gill et al. (2010) did an empirical study and found each industry has a different dividend policy. For example the analysis in the manufacturing industry in US showed that profitability had a negative effect dividend payout. Harry et al. (2006) empirical studies also confirmed the same results. But the Anil and Kappor (2008) empirical study found there was no relationship between them.

## 2.2 Sales growth

The sales growth rate is an important index to measure the condition of business and market share forecasting ability, enterprise management and business development trends, it also an important prerequisite for enterprises to expand the capital increment and stock capital. When the index is high, it will indicate good growth and allow the enterprise to market itself faster and better to its prospects. A high index is required in order for a company to secure operating funds for future development and allow funds be retained as internal cash to cover the future funds demand needed for growth and development (Koul and Orsag, 2012, Gill et al., 2010; Samuel and Marfo-Yiadom 2011). It is also used as a strong indicator the company can use to make a decision on the size of their dividend.

Komrattanapanya and Suntrauk (2013) using Tobit regression analysis did an empirical study that shows the factors that influence dividends payouts in Thailand. In this this study he found that too much growth could have a negative effect on dividends from his analysis results. Koul and Orsag (2012); Gill et al. (2010); Samuel and Marfo-Yiadom (2011) also confirms that excessive growth could have a negative effect on dividend policy.

The Kania and Bacon (2005) has the view that higher sales growth is an indicator that the company can pay higher dividends. Others in their empirical studies confirm that the relationship between higher sales growth and ability to pay higher dividends is insignificant. (Kim and Gu, 2009, Al-Kuwari, 2009; Anil and Kapoor, 2008).

### 2.3 Debt

Lv and Wang (1999) using the factor analysis method listed the payment data of cash dividends of all 372 listed corporations listed on the Shanghai and Shenzhen exchanges for the years 1996-1998 were studied. The results show that the shareholder's equity ratio and dividend payment is directly proportional to the level of state-owned shares and legal person shares: when the controlling shares were state owned the dividend payouts were adversely high and when the controlling portion was legal persons the dividends were adversely low. The payment of poorly performing firms tended to adopt long-term debt as a way to pay stock dividends in order to meet the demands of shareholders.

An empirical study by Chen et al. (2005) confirms the debt positive effect dividend policy. Contrarily, the study results confirm the debt and dividend policy has a negative correlation (Gugler and Yurtoglu, 2003; Stacescu, 2006; Bena and Hanousek, 2006; Kowalewski et al., 2007).

Kozul and Orsag (2012) view the use of debt control as a reason to decrease dividends distributed to shareholders and allow the management to retain more cash for the future operation and retirement of debt.

### 2.4 Ownership concentration

In the Wei (2000) empirical study of 1167 samples from 389 companies, showed that the observed value of listed companies in China's dividend policy, were ownership structure and agency problems. The study found that the proportion of state shares and legal person shares proportion was higher and had the higher probability of a listing corporation dominating the dividend; state shares and legal person shareholders preferred cash dividends, stock dividends and the circulation of stock as the shareholder preference.

Yuan (2001)'s study on the Shanghai stock exchange and Shenzhen stock exchange A share list of firms from 1994 to 1997 shows the annual dividend plan by regression analysis. The results indicated that dividend distribution impacted listed companies' as a special ownership structure and governance structure in China.

The Hu (2002) study found that the proportion of shares in circulation had a large influence on dividend distribution. If the proportion of shares in circulation was small, the more possible it was to pay dividends, and the larger proportion of tradable shares, the more inclined a firm was to distribute stock dividends. In addition, when the company had good investment projects or was in a high growth period, the firm would trend to distribute stock dividends or no dividend. When the company needed external financing, they would take the cash dividend.

Kozul and Orsag (2012) view the ownership concentration as an agency problem that the small shareholders' rights can be ripped away from them. The study reportedly shows that the ownership concentration can have a negative effect on dividend policy. Maury and Pajuste (2002), Harada and Nguyen (2011), Bena and Hanousek, (2006) through their empirical study also confirms the same results.

## 2.5 The scale of the firm

The explanatory variable firm size is defined as log of beginning year assets and has statistics significant with a dependent variable by Warfield et al. (1995) and Klein (2006).

Jensen and Mecking (1976) put forward the agency theory. The shareholders cannot know the specific operations of the firm, but they can through dividend distributions see the financial situation of the firm. And then in order to control agency costs, larger firms prefer to pay dividends.

The Holder *et al.* (1998) empirical study results showed that the larger firms have more ability to get capital from external financing than do small firms. It depends on the size of the firm, and defined as a logarithm of total assets. It shows that the bigger company will be able to obtain financing much easier than the small company. Therefore the possibility of that company issuing a high priced dividend is much greater. They point out that the larger firms have the ability to use lower costs than smaller firms to get access to market capital easier, and obtain funds from financing outside. Therefore, large firms prefer to pay out larger dividends than smaller firms.

Komrattanapanya and Suntrauk (2013) is an empirical study that shows factors influencing dividend payouts in Thailand and uses the natural logarithm of current market capitalization as a size of the firm to study the relationship between dividend payouts. It shows in its results that it confirms that the size of the firm significantly influences the dividend payouts of Thai listed firms.

Different sizes of firms have different dividend payouts. Fanta et al. (2013); Haidir and Utama, (2011) defined the size as logarithm (log) of bank's total assets. The empirical investigation confirms it has a high significance with explained variables. In addition, Wang et al. (2011) empirical stock dividend policy in China found that using the natural log of total assets as a scale for a firm to use as a size of firm to study and got the result that indicates there is a highly negative significance with dividend policy.

## 2.6 Liquidity

Jensen (1986) put forward a free cash flow hypothesis, also known as the theory of the agency cost of free cash flow. It indicated a financing structure that through the

constraint of cash flow, the manager would be restrained from spending more cash flow on unnecessary expenses and thus reduce the manager's control right. That happened and provided a positive effect for the firm, and thus affected a firm's value.

Alli et al. (1993) through empirical analysis found that dividends cannot totally convey all the information about a company's fiscal expenditures. If there is a slack period where finances are negative there may be a correction with the dividend payout. The empirical data also reveals that the higher the cash flow, the lower the systematic risk of the firms. This is a signal of high quality when it comes to paying out dividends.

The higher a firm's liquidity ratio is the more cash the firm has to distribute to the shareholders and operation for investment. When assets liquidity is not good, the company will choose to not pay out cash dividends, which can reduce the assets liquidity of the company, and the affect the operation of the company (Kania and Bacon, 2005; Adil et al. 2011).

Anil and Kapoor, (2008) empirical investigation defined dividend and liquidity as a positive correlation. But other research studies found that a company's liquidity can have a negative effect on dividend payouts (Kania and Bacon, 2005; Adil et al., 2011). These studies showed no relationship between liquidity and dividend payouts (Kim and Gu, 2009; Al-Kuwari, 2009; Gill et al., 2010; Al-Shubiri, 2011; Samuel and Marfo-Yiadom, 2011).

## 2.7 Investment opportunities

When the company's investment opportunities are more, but disposable cash flow is relatively small, the shareholders can tolerate a lower cash dividend payment rate (Jensen and Meckling, 1976).

In order to increase investment, the firm needs to control dividend payout and retain internal finance capabilities (Rozeff, 1982).

Masulis and Trueman (1988) put forward many opportunities for a firm's profit, it will not pay dividends and to use up all the internal funds, but mature firms will pay dividends, because investment opportunities have not exhausted all the internal funds. The firm in appropriate circumstances will be to retain earnings for investment opportunity.

In the Chen and Zhao (2000) study using multiple regression analysis, single factor analysis, classification and statistics analysis, results showed that a firms' stock price and its cash and stock dividend had a definite positive correlation.

With the strong investment opportunities in the market place, a firm has to make

sure their internal financing is utilized as well. Otherwise the firm may be forced to abandon these internal projects when there is a fund shortage. At the same time, if a firm holds on to enough of its cash flow, it can be used to develop more profitability with its investment opportunities (Khaoula and Edith, 2007).

Trough Komrattanapanya and Suntrauk (2013), Kim and Gu (2009) studies found that investment opportunities can have a negative effect on dividend policy. As the firm is presented with more investment opportunities it may payout less in dividends. At the same time if the firm has fewer investment opportunities it will payout more in dividends. But the Al-Shubiri (2011) study found that investment opportunities produce a positive effect on dividend policy in Jordanian industrial markets.

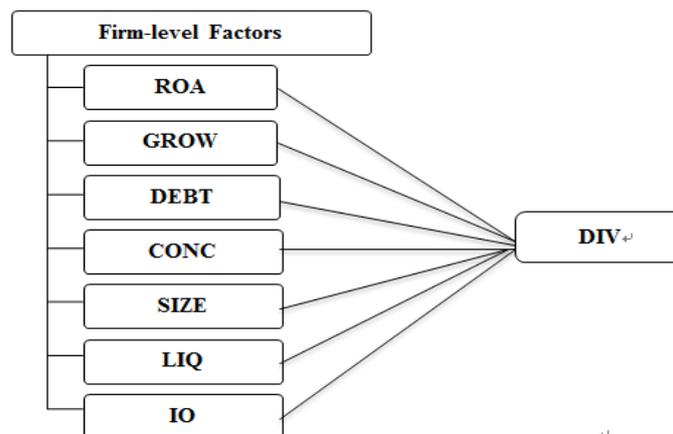
The Anil and Kapoor (2008) and Gill *et al.* (2010) study put forward that the investment opportunities are not an important factor affecting dividends in the study of the Indian information technology sector.

## 2.8 Dividend payout

The researchers (Miller and Modigliani, 1961) assuming a market has perfect performance, information symmetry on taxes and such. Under a perfect market, shareholders should receive the benefit from dividends and or capital gains. But there is a state of operation where shareholders and the firm cannot operate in a perfect market for real.

## 2.9 Conceptual framework and hypothesis

Based on the literature review, the firm-level factors affect dividend payout or not, a conceptual framework is designed by the author.



**Figure 1** The framework of the research

Based on the objectives of this study, there have 3 hypotheses:

**H1.** The profitability (ROA), sales growth (GROW), debt (DEBT), ownership concentration (CONC), the scale of firm (SIZE), liquidity (LIQ) and investment opportunity (IO) affect dividend payout in listed logistics firms in China.

**H2.** The profitability (ROA), sales growth (GROW), debt (DEBT), ownership concentration (CONC), the scale of firm (SIZE), liquidity (LIQ) and investment opportunity (IO) affect dividend payout in listed logistics firms in Thailand.

**H3.** There are differences in factors affecting dividend payout of listed firms in logistics sector between China and Thailand.

### 3. Methodology

#### 3.1 Sampling strategy and measurements of variables

**Table 1** Selection criteria in the logistics sector for the China samples

<b>China</b>	
<b>Criterion</b>	<b>Number of listed firms</b>
<b>The firms listed that are in the Traffic, Transport and Warehousing industries.</b>	<b>58</b>
<b>Listed firms for the management and operation of high speed roads.</b>	(-11)
<b>Listed Airline firms.</b>	(-6)
<b>Listed firms for rental cars.</b>	(-2)
<b>Listed firms for passenger transport.</b>	(-1)
<b>Listed firms for the management of highways and bridges.</b>	(-1)
<b>Firms listed for the management and operation of railways.</b>	(-3)
<b>Listed firms for management and operation of airport</b>	(-2)
<b>Final sample (goods transportation &amp; logistics)</b>	<b>32</b>

**Table 2** Selection criteria in the logistics sector for Thailand samples

Thailand	
Criterion	Number of listed firms
Listed firms in the transportation & logistics industry.	18
Listed firms for passenger service.	(-3)
Airline listed firms.	(-3)
Listed firms for the management and operation of airports.	(-2)
Listed firms for shipbuilding.	(-1)
Listed firms for management and operation of highways.	(-1)
Final sample (goods for transportation & logistics).	8

Based on the available second data from China financial information and SETSMART database, the study defined the samples as follows:

**Sample (1):** consists of 25 listed firms in the logistics sector in China during 2006-2014. The total annual data is 225 firms in the logistics sector in China.

**Sample' (2):** consists of 7 listed firms in the logistics sector in Thailand during 2006-2014. The total annual data comes from 63 firms in the logistics sector in Thailand.

The Model is the equation for study of firm-level factors affecting dividend payouts in logistics sector in China and Thailand.

$$DIV_{i,t} = \alpha + \beta_1 ROA_{i,t} + \beta_2 GROW_{i,t} + \beta_3 DEBT_{i,t} + \beta_4 CONC_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 LIQ_{i,t} + \beta_7 IO_{i,t} + \epsilon_{i,t}$$

Where  $i$  means individual listed firms in the logistics sector;  $t$  means the natural logarithm of the current market capitalization time  $t$  (from 2006 to 2014);  $\alpha$  means the intercept of the regression equation in the logistics sector;  $\epsilon$  means the error term of the regression equation in the logistics sector;  $\beta_n$  means coefficients of independent variables,  $n=1, 2, 3, \dots, 8$ ;

**Table 3** The model's measurements of variables

<b>Symbols</b>	<b>Description</b>	<b>Measurement</b>
<b>DIV</b>	Aggregate dividends over value of total assets (in percentage)	Dividends payable/ Total assets
<b>ROA</b>	Return on Assets refers to a firm's profitability (in percentage).	Net Income/ Total assets.
<b>GROW</b>	Sales growth from 2006 to 2014 in China. (in percentage). Sales growth from 2006 to 2014 in Thailand. (in percentage).	(Net sales for current period-Net sales for the last period) / Net sales for the last period.
<b>DEBT</b>	Total debt ratio of firm (in percentage).	Total liability / Total assets.
<b>CONC</b>	The shareholding ratio of the largest shareholder of firm.	Percentage of ownership of largest shareholder.
<b>SIZE</b>	The scale of the firm.	The log of total assets.
<b>LIQ</b>	Current ratio (in times).	Total Current Assets/ Total Current Liabilities.
<b>IO</b>	Investment opportunities (in times).	Price to Book Ratio =The last stock trading price/ Book value per share.

### 3.2 Data Analysis

The study uses methods of descriptive statistics and inferential statistics to analyze respectively.

For method of descriptive statistics, first, the study uses the tables of minimum, maximum, median, mean and standard deviation to describe the statistics of the independent variables that identify profitability, sales growth, debt, ownership concentration, the scale of the firm, liquidity, investment opportunities and dependent variable that show the dividend payout ratio of listed firms in logistics sector in China and Thailand. Secondly, using the table and chart this study compares the dividend levels between the 2 countries.

For method of inferential statistics, first, the study uses the univariate comparison by T-testing to see whether the dividend payout ratio of China and Thailand are equal. Secondly, using the Pearson product-moment correlation coefficient (Pearson' r) to test and determine linear correlation with the dependent variable ratio of dividends to total assets (DIV) and independent variables which is return on assets, sales growth, debt ratio, ownership concentration of shareholding ration of the largest shareholder, the scale of firm, the current ratio and investment opportunities. Thirdly, for the research objectives of this study it will use the methods of linearly regression to run the model with the panel data. The model will run linear regression 2 times with 2 countries, using the methods of the pooled least squares (Pooled OLS) to run model for China, the methods of pooled estimated generalized least squares (Pooled EGLS) and seemingly unrelated regression model (Cross-section SUR) to run model for

Thailand.

## 4. Data Analysis and Results

### 4.1 Descriptive statistics

**Table 4** Descriptive statistics of sample in China

<b>Variables</b>	<b>Min</b>	<b>Max</b>	<b>Median</b>	<b>Mean</b>	<b>Sta.Dv.</b>	<b>Observation</b>
DIV (%)	0	11.71	0.01	0.2955	0.97516	225
ROA (%)	-60.70	120.21	6.26	6.8304	12.09342	225
GROW (%)	-63.37	3116.79	10.00	33.7629	217.03359	225
DEBT (%)	5.45	931.71	47.21	55.3671	69.10257	225
CONC (%)	6.93	79.64	41.90	41.0320	13.12657	225
SIZE	7.67326	10.97442	9.699295	9.692209	56.22058	225
LIQ (Times)	0.0091	55.7406	1.0485	1.650252	4.0149544	225
IO (Times)	-39.1053	132.1962	2.0514	2.289066	10.5043933	225

Following the Table 4 shows the first variable is the dependent variable ratio of dividends to total assets (DIV). The minimum value is 0, maximum value is 11.71, medium value is 0.01, mean value is 0.2955 respectively. This shows that over past 10 years, China's logistics sector has been in a state of rapid growth, but showing many problems at the same time. For example, the firm's organization may be low or be in a poor financial situation. Some firms will make a dividend policy but not paid dividends. So some firms making dividend policy but not paying dividends to shareholders leads to a much larger difference in their growth from the companies that make dividend payouts to its' shareholders.

Under the current logistics environment some organizations may not complete their organizational duties properly and with the rapid growth find that they have to exit the business because they failed to establish themselves correctly. Some firms go together quickly and then find business coming in to slow making it difficult to survive. This along with many firms and strong competition in the logistics sector can cause there to be a higher standard of deviation and the huge distance between minimum value and maximum value of ROA (return on assets), GROW (sales growth), DEBT (debt ratio), CONC (ownership concentration as shareholding ratio of the largest shareholder of firm), SIZE (the scale of firm), LIQ (the current ratio) and IO (investment opportunities) as explanatory variables. In addition, the mean and medium of GROW (sales growth) will have a large distance between them. This also will mean that the sales levels of firms in the logistics sector in China per year will have a large difference and be very unstable.

**Table 5** Descriptive statistics of sample in Thailand

<b>Variables</b>	<b>Min</b>	<b>Max</b>	<b>Median</b>	<b>Mean</b>	<b>Sta.Dv.</b>	<b>Observation</b>
DIV (%)	0	17.68	0.89	2.2988	3.73969	63
ROA (%)	-57.44	32.42	5.31	4.797937	14.2361	63
GROW (%)	-66.38	372.51	1.17	6.3605397	59.931307	63
DEBT (%)	5.65	98.6	40.51	42.9877778	20.5117131	63
CONC (%)	3.84	37.93	23.82	20.00015873	7.66860199	63
SIZE	8.54	10.71	9.42	9.677937	0.715695	63
LIQ (Times)	0.01	12.49	1.14	2.078095238	2.759417807	63
IO (Times)	0.15	15.78	0.82	1.398888889	2.546361801	63

The logistics sector in Thailand is still developing at a level above that of many countries of ASEAN. Due to the reason, some relatively mature firms of logistics sector in Thailand prefer to maintain a higher level of retained earnings; they maintain enough cash flow to develop new projects. In other words, many shareholders prefer to get profit from the benefits of other projects as well as profits from logistics.

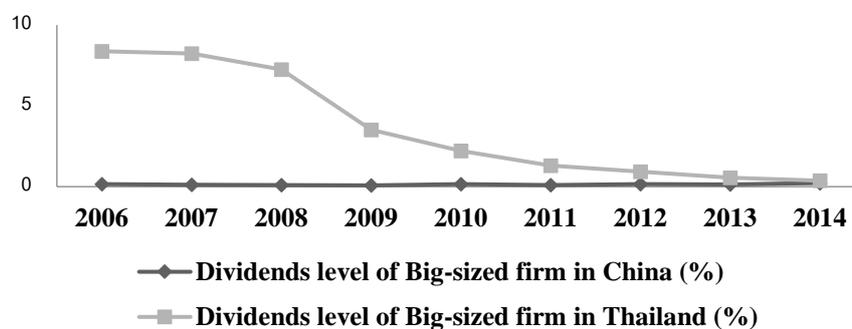
From the descriptive statistics of the sample in Thailand (Table 5) shows the ratio of dividends to total assets in percentage (DIV) as dividend level. Again, there is a large distance between minimum value and maximum value, and the median and mean have a large difference. The variables ROA (return on assets) and GROW (sales growth)'s minimum and maximum have a large distance, that means the profitability and sales growth situations have a big difference in the firms in the logistics sector in Thailand per year. The debt ratio (DEBT) descriptive statistics show the maximum value at 98.6, that although the logistics sector in Thailand is maintaining a rapid degree of development, there is also also a higher degree of liability for some firms. The median value and mean value of DEBT shows that all debt ratios of the firms to be over 40%. The minimum and maximum value of CONC (ownership concentration as shareholding ratio of the largest shareholder of firm) is 3.84 and 37.93 respectively. That indicates that the shares system is very different in the firms in the logistics sector in Thailand, but the shareholding ratio of the largest shareholder's average level is in 20%-24% range. The minimum value and maximum value of SIZE (log of total assets) are 8.54 and 10.71 that indicates strength with the wide variations in firms in the logistics sector in Thailand. The minimum value of LIQ (the current ratio) is 0.01 that means the current assets and the current liabilities are almost the same. The maximum, medium and mean values of LIQ (the current ratio) are 12.49, 1.14 and 2.1. That shows that the financial situations of the firms in the logistics sector in Thailand are quite different. The descriptive statistics of IO (investment opportunities) shows the investment opportunities in the market are under an environment of very rapid development and competition can make a big difference for each firm in the logistics sector in Thailand.

The study uses the mean of log of total assets as a means to size a firm and separate big-sized, small and medium-sized firm. According to the mean of log of

total assets of 25 firms in logistics sector in China and 7 firms in logistics sector Thailand, the study found that the mean log of total assets is 9.689087. So the study defines the following boundaries: Big-sized firm as that the log of average total assets of firm during 2006-2014 equal or more than 9.689087 (the log of average total assets  $\geq 9.689087$ ); Small and Medium-sized firm as that the log of average total assets of firm during 2006-2014 less than 9.689087 (the log of average total assets  $< 9.689087$ );

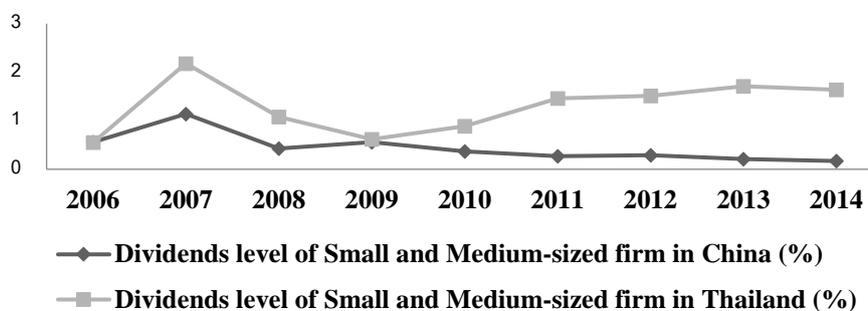
**Table 6** Descriptive scale of firms in China and Thailand

Country	Number of listed firm	
	No. of Big-sized	No. of Small & Medium-sized
China	12	13
Thailand	3	4



**Figure 2** Trend in dividends level of Big-sized firms in logistics sector in China and Thailand (Unit: %)

The Figure 2 show dividend levels of big-sized firms in logistics sector of China has leveled off during 2006-2014, and the dividends of big-sized firms in logistics sector in Thailand has downward trend in period of 2006-2014, By 2014 the dividends level of big-sized firms in logistics sector in China and Thailand had closed down. Overall, the logistics sector of Thailand paid out more in dividends than China during 2006-2014.



**Figure 3** Trend in dividends level of Small and Medium-sized firms in logistics sector in China and Thailand (Unit: %)

From the Figure 3, the dividend levels of small and medium-sized firms in China and Thailand almost the same in 2006. The levels in 2009 were very close. The other period years beside the period years of 2006 and 2009 the dividends levels were a disparity between small and medium-sized firms in the logistics sector in China and Thailand. Overall, the small and medium-sized firms in the logistics sector in Thailand paid more dividends than China.

#### 4.2 Inferential statistics

**Table 7** Group Statistics

Country	N	Mean	Std. Deviation	Std. Error Mean
<b>DIV (%) C</b>	225	0.2955	0.97516	0.06501
<b>T</b>	63	2.2988	3.73969	0.47116

Following the Table 7 shows the independent sample which is ratio of dividends to total assets (DIV) of 25 listed firms in logistics sector in China during 2006-2014 and ratio of dividends to total assets (DIV) of 7 listed firms in logistics sector in Thailand during 2006-2014 respectively. The paper suppose the null hypothesis (H0) is that there is no difference between the mean dividend payout ratio of firms in logistics sector of China and Thailand. And alternative hypothesis (HA) is that there is difference between the mean dividend payout ratio of firms in logistics sector of China and Thailand.

**Table 8** Independent Samples Test

		Levene's Test for Equality Of Variances		t-test for Equality of Means		
		F	Sig.	Sig.(2-tailed)	95% Confidence Interval of the Difference	
					Lower	Upper
DIV(%)						
Equal variances assumed	Equal	94.994	.000	.000	-2.54850	-1.45806
Not assumed	Equal variance			.000	-2.95334	-1.05323

There are two results from two different t-tests. One assumes an equal variance and the other an unequal variance. Following the above table 8, the p-value is 0 and that has significance and implies the result can reject to the null hypothesis (H0). Therefore, it can determine if there was a difference between the mean ratio of dividends to the total assets of firms in the logistics sector of China and Thailand during 2006-2014.

Compare the mean of ratio of dividends to total assets and from the dividends level in Table 7, the author find that the dividends level in the logistics sector in Thailand is greater than in China.

**Table 9** Correlation Matrix between variables in Model - China: Pearson Indices

Variables	DIV	ROA	GROW	DEBT	CONC	SIZE	LIQ	IO
<b>DIV</b>	1							
<b>ROA</b>	.152*	1						
<b>GROW</b>	.173**	.036	1					
<b>DEBT</b>	.802**	-.128	-.001	1				
<b>CONC</b>	-.285**	-.043	-.061	-.275**	1			
<b>SIZE</b>	-.270**	-.008	.040	-.365**	.379**	1		
<b>LIQ</b>	-.070	.037	-.017	-.136*	-.092	-.028	1	
<b>IO</b>	-.121	-.068	.059	-.099	.039	.001	.013	1

\*\* . Correlation is significant at the 0.01 level (2-tailed)

\* . Correlation is significant at the 0.05 level (2-tailed)

The Table 9 shows the Pearson's correlation matrix for the variables used in the analysis. The result of the correlation shows that the ratio of dividends to total assets (DIV) shows a positive correlation with return on assets (ROA) in percentage, which is statistically significant at a 95% confidence level. The result of the correlation shows that the ratio of dividends to total assets (DIV) in percentage form has a strong positive correlation with the sales growth (GROW) in percentage. The statistic significance is 0.173\*\* and the p-value is less than the 0.01 level which indicates that with the high sales of a firm in the logistics sector in China they will be able to pay more dividends. The debt ratio (DEBT) in percentage also has a strong positive correlation with ratio of dividends paid to total assets (DIV). It is significant that with a 99% confidence level, a firm with a higher debt level will pay more dividends. The ratio of dividends to total assets (DIV) has a strong negative correlation with the ownership concentration as the largest shareholder of a firm (CONC) in percentage with the size of the firm (SIZE). The statistical significance is -0.285\*\* and -0.270\*\* respectively. That indicates that when the ownership concentration of shareholding is higher, the dividends payment is lower for a firm in the logistics sector in China. In addition, when a firm's scale is larger that firm will pay low dividends.

**Table 10** Result of pooled least squares Model (1)-China

<b>Cross-section fixed (dummy variables)</b>			
R-squared	0.909167	Mean dependent var	0.002870
Adjusted R-squared	0.891762	S.D. dependent var	0.009767
S.E. of regression	0.003213	Akaike info criterion	-8.493410
Sum squared resid	0.001724	Schwarz criterion	-7.949187
Log likelihood	882.3410	Hannan-Quinn criter	-8.273171
F-statistic	52.23563	Durbin-Watson stat	2.091900
Prob (F-statistic)	0.000000		

The result of fixed effects model (1) shows R-square is 0.909167, there is 90.9167% of variance in the ratio of dividends to total assets (DIV) explained by the independent variables (ROA, GROW, DEBT, CONC, SIZE, LIQ and IO). The F-statistics is 52.23563 and P-value is 0 less than 0.01 that means we have statistical significance. The Durbin-Watson statistic is 2.091900 that will shows that the autocorrelation is eliminated between the variables in Model.

Accordingly the results show that the model (1) fitting is excellent and the independent variables all have an effect on the dependent variable (DIV), so the regression for Model (1) becomes:

$$DIV_{i,t} = 0.063044 + 0.006675ROA_{i,t} + 0.000414GROW_{i,t} + 0.010756DEBT_{i,t} - 0.024037CONC_{i,t} - 0.005818SIZE_{i,t} + 0.000212LIQ_{i,t} - 0.0000529IO_{i,t}$$

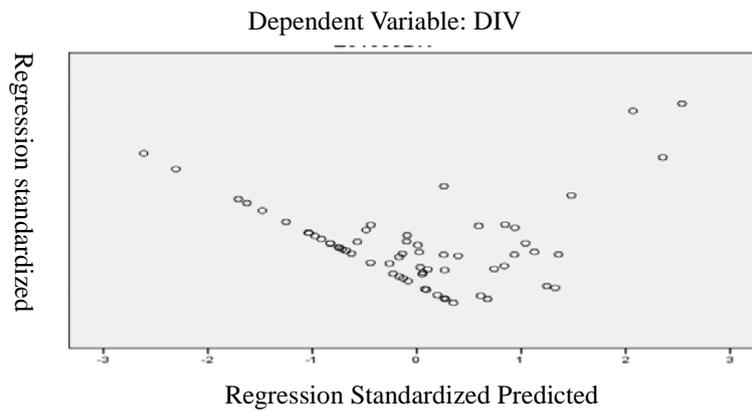
**Table 11** Correlation Matrix between variables in Model (2)-Thailand: Pearson Indices

Variables	DIV	ROA	GROW	DEBT	CONC	SIZE	LIQ	IO
<b>DIV</b>	1							
<b>ROA</b>	.630**	1						
<b>GROW</b>	-.097	.174	1					
<b>DEBT</b>	-.561**	-.565**	-.102	1				
<b>CONC</b>	.155	.389**	.079	.061	1			
<b>SIZE</b>	.145	.122	-.084	-.112	.171	1		
<b>LIQ</b>	.387**	.282*	-.123	-.608**	-.038	.039	1	
<b>IO</b>	.002	-.410**	-.151	.248	-.267*	-.295*	-.051	1

\*\* . Correlation is significant at the 0.01 level (2-tailed)

\* . Correlation is significant at the 0.05 level (2-tailed)

From the Table 11 shows the Pearson’s correlation matrix for the variables used in the analysis. The ratio of dividends to total assets (DIV) in percentage has a strong positive correlation with independent variables in model (2) which is a return on assets (ROA) in percentage and the current ratio (LIQ) in percentage respectively. There the P-values are 0.630\*\* and 0.387\*\*. In addition, the DIV in percentage has a strong negative correlation with the independent variable as debt ratio (DEBT) in percentage in model (2) where the P-value is -561\*\*.



**Figure 4** Scatterplot between DIV and predicted variables

Due to there being heteroscedasticity between explanatory variables (ROA, GROW, DEBT, CONC, SIZE and LIQ) and dependent variable (DIV). Therefore, there is heteroscedasticity in model (2).

**Table 12** Fixed effects Model (2)-Thailand

Cross-section fixed (dummy variables)			
Weighted Statistics			
R-squared	0.952100	Mean dependent var	0.530401
Adjusted R-squared	0.939391	S.D. dependent var	8.251406
S.E. of regression	1.018388	Sum squared resid	50.81859
F-statistic	74.91957	Durbin-Watson stat	1.594226
Prob (F-statistic)	0.000000		

After one-step weighting with panel data, using the method of the fixed effects model to the fixed different cross-section of the 7 firms, we make the 7 differences of cross-sections of firms in same cross-section in model (2). Using the method of cross-section of seemingly unrelated regression model for the cross-section seemingly unrelated between variables in model (2). Based on the method used, finally, the study uses pooled estimated generalized least squares (Pooled EGLS) to run model (2). All of the above operation processes run in Eview 6.0. The result shows in Table 12.

The results (Table 12) shows the R-square is 0.952100, the mean the 95.21% in variance of the dependent variable as a ratio of dividends to total assets (DIV) explained by independent variables (ROA, GROW, DEBT, CONC, SIZE, LIQ and IO). The F-value is 74.91957 and P-value is 0 less than 0.05. That means the model (2) is significant and applicable.

Accordingly the regression result, the Model (2) becomes:

$$DIV_{i,t} = 0.373666 + 0.139156ROA_{i,t} - 0.006267GROW_{i,t} - 0.057539DEBT_{i,t} - 0.033844SIZE_{i,t} - 0.003104LIQ_{i,t} + 0.003625IO_{i,t};$$

## 5. Conclusion

Based on the empirical research results, the study was found to confirm what firm-level achieved and how each factor affected the dividend payouts from 2 countries. ROA (return on assets), GROW (sales growth), DEBT (debt ratio), CONC (ownership concentration as shareholding ratio of the largest shareholder of firm), SIZE (the scale of firm), LIQ (the current ratio) and IO (investment opportunities) as firm-level factors affecting the dividend payout in the logistics sector in China. At the 1% significance level, the study found ROA, GROW and DEBT significant in dividend payouts in the logistics sector in China with the positive sign of a coefficient. At the same significance level, the study found CONC and SIZE significant in dividend payouts in the logistics sector in China with the negative sign of a coefficient. At a 10% significance level, LIQ is a positive correlation with a dividend payout in the logistics sector in China and IO is a negative correlation with a dividend payout in the logistics sector in China at a 5% significance level. **Therefore, the hypothesis 1 proves to be correct.** The study observes that there is an effect of ROA, GROW, DEBT, CONC, SIZE, LIQ and IO on the dividend payouts in the logistics sector in Thailand. At 1% significance level, the firm-level factors in which ROA and IO are in positive correlation with dividend payouts in the logistics sector in Thailand and GROW, DEBT, SIZE and LIQ are in negative correlation with dividend payouts in the logistics sector in Thailand respectively. In addition, CONC has no significance with dividend payouts in the logistics sector in Thailand. **Therefore, the hypothesis 2 proves to be rejected.** Based on the t-test to compare the mean of ratio of dividends to total assets in percentage between China and Thailand during 2006-2014, there are significant statistics. According to the mean of dividends level from the two countries it shows the mean ratio of dividends to total assets in Thailand is higher. That implies that listed firms in the logistics sector in Thailand pay more dividends between the two countries. **Therefore, the hypothesis 3 proves to be correct.**

## 6. Discussion

**According to the empirical investigation to discuss:**

Return on assets (ROA) means the profitability of a firm in which there is a positive correlation with dividend payout in the logistics sector in China and Thailand in this study. The empirical studies finds that profitability has positive effects on

dividend policy (Kong, 2003; Yuan and Su, 2004; Shi and Ouyang, 2004; Bebczuk, 2004; Kozul and Orsag, 2012). Gill et al. (2010) empirical study found each industry had different results and had different factors to utilize their profitability and create their dividend policy. The relationship between both can be a possible negative correlation or positive correlation. In addition, Anil and Kappor (2008) in their empirical study found there to be no relationship between them. Above all, the study thinks the profitability can be evidenced through dividend levels that represent the current financial situation of a firm. For different industries have different relationships between profitability of the firm and the dividend payment, the study has two views: the one is a firm will show a stable development in the market and pay high dividends, another one is to let the shareholders understand the firm operates well.

Sales growth (GROW) indicates the positive sign with dividend level in analyzed firms in the logistics sector in China (Kania and Bacon, 2005), but there is a negative significant correlation with dividend level of firms in logistics sector in Thailand (Koul and Orsag, 2012; Gill et al., 2010; Samuel and Marfo-Yiadom 2011). For the higher sales growth have a higher dividend level in China, this study views the logistics sector in China still in development, even if the firm has a potential business possibility with a good sales growth in future, but the firms in the logistics sector in China will be to pay more dividends to attract more potential investors (Kania and Bacon, 2005). The sales growth rate is an important index to measure the condition of a business and market share forecasting ability, enterprise management and business development trends. That's an important prerequisite for enterprises to expand their capital. The index of sales growth is higher in one which implies the growth enterprise in that market is faster, the prospects of the enterprise is better. In order to meet the firms operating funds for development the firm will be likely to retain their internal cash (Komrattanapanya, 2013; Koul and Orsag, 2012; Gill et al., 2010; Samuel and Marfo-Yiadom 2011). So the study thinks the reason that when a positive sales growth is in a correlation with a dividend level in which its sales growth would be at a decreasing level it refers to a firm that is potentially entering into a stage of expansion in its business that would need a positive cash earning power or large amount of financing to invest in a future project.

The debt ratio (DEBT) has a positive correlation with dividend level of firms in the logistics sector in China (Chen et al., 2005). And the debt ratio (DEBT) has negative correlation with dividend level of a firm in the logistics sector in Thailand (Gugler and Yurtoglu, 2003; Stacescu, 2006; Bena and Hanousek, 2006; Kowalewski et al., 2007). For the different results between China and Thailand, this study thinks the ratio is higher that expresses that the firm has more financial risk under circumstances of a high debt level to pay high dividends than it is when it is under great pressure just to pay higher dividends, Kozul and Orsag (2012) also viewed. But paying high dividends can be proving a firm is in a well-financed situation, so in order to reassure shareholders of a firm's position in the market, even under the high debt,

the firm will be paying more dividends. Here is the use of the theory of asymmetric information by Bhattacharya (1979).

The shareholding ratio of the largest shareholder of a firm (CONC) is in a negative correlation with dividend level of a firm in the logistics sector in China (Kozul and Orsag, 2012; Maury and Pajuste, 2002; Harada and Nguyen, 2006; Bena and Hanousek, 2006). That indicates when the ownership concentration of shareholding is higher and the dividend level of a firm between the two countries is lower. This paper thinks that the larger shareholder of the firm would be able to change the dividend policy, Wang et al. (2011) hold the same view.

Following the regression results confirms the scale of the firm (SIZE) has a highly negative significance with dividend level of firms in the logistics sector in China and Thailand. Based on the results above, this study views that dividend distributions can show the financial situation of a firm how the well a firm's operation is by the better the dividend levels. In another words, the larger firms paying more dividends shows that the control agency isn't showing a reduction in the amount of cash flow that the managers' waste in non-profit investment projects so that shareholders continue to see high levels of cash maintained that can be used for higher dividends (Jensen and Meckling, 1976; Rozeff, 1982). But generally, the small firms have higher risk than larger firms. The small firms attract more potential investors inside to pay more dividends (Kapoor et al., 2010), conversely, the larger firms need to reserve enough internal cash flow for insurance against the unexpected needs in future. Therefore, the larger firm pays lower dividends.

The current ratio (LIQ) has a positive significance of 10% in the dividend level of firms in the logistics sector in China (Kania and Bacon, 2005; Adil et al., 2011; Alli et al., 1993; Anil and Kapoor, 2008). That indicates that the higher the liquidity level is the higher the dividend level is for a firm. That has a highly negative significance at the 1% level in the dividend level of firms in the logistics sector in Thailand (Kania and Bacon, 2005; Adil et al., 2011). Which means the higher the liquidity is the less the dividend level is for a firm. According to the different results from two countries the study thinks that it is possibly related with the manager's rights (Jensen, 1986). If the manager has a larger right in a firm, and a better financing structure of free cash flow, the manager might spend the cash flow in unnecessary expenses only on ideas of themselves. There can be a problem of agency conflict (Jensen and Meckling, 1976; Easterbrook, 1984; Rozeff, 1982).

Following the results by this study, the investment opportunities (IO) can be in a negative correlation with the dividend level of firms in the logistics sector in China (Komrattanapanya and Suntruk, 2013; Kim and Gu, 2009; Jensen and Meckling, 1976), than that correlation of the dividend level of firms in the logistics sector in Thailand (Al-Shubiri, 2011; Chen and Zhao, 2000). Based on the results above, in the opinion of this study and according to the difference from sectors and countries, there

are different investment opportunities and different investment influence levels for different firms. For example, the Anil and Kapoor (2008) and Gill et al. (2010) put forward that investment opportunities are not necessarily an important factor affecting dividend policies. Those factors are better evaluated by the internal financial situations and esteemed shareholders' suggestions. There are larger opportunities and profitability's that can be obtained even if shareholders don't receive dividends. Other profits can be large enough that shareholders won't miss the non-payment of dividends.

## **7. Recommendations**

From this study we learn that from the perspective of the largest shareholder that when the dividend is lower the manager needs to be in close contact with the largest shareholders and maintain good relationships with them and stay in close contact by communicating on a regular basis so the largest shareholders understand the operations and considerations of the firm. The manager should see that the larger shareholders are well apprised of the current debt levels so adequate decisions can be made on the debt levels maintained, dividends paid out to the shareholders and other projects opportunities investments made.

The shareholders of firms in the logistics sector in Thailand should realize that greater investment opportunities pay higher dividends. Thus the reasons for maintaining larger cash flows to take advantage of opportunities when they become available so larger dividends can be paid.

By comparing the dividend levels in this study it confirms that Thailand pays more in dividends from the logistics sector than China. This leaves the investor with the choice to invest according to his or her demands from the logistics sectors of China or Thailand.

## **8. Limitation & Further Research**

Limitation for China with panel data, there is a limitation due to the data not being complete, the original objectives of the sample in China from 32 listed firms into 25 listed firms during 2006-2014. Additionally there is a problem with time series autocorrelation between the variables in model, after using methods to adjust the panel data, the observations were changed from 288 to 200. Limitation for Thailand with panel data, there are 8 firms that are applied, the one firm listed was deleted from sample, so that sample had to be redefined, after using methods to adjust the panel data, the observations were changed from 72 to 63. Based on the above, the researcher expanded the research range in which there is year longer in the logistics sector in China. Because the listed firms in the logistics sector in Thailand are lower, the researcher should be to expand the research range in the firms (e.g. firms that are not listed).

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