Factors affecting the dividend payment policy of the listed companies on the Ho Chi Minh Stock Market

Nguyễn Thị Huyền*

Banking Academy,

No. 12 , Chua Boc street , Dong Da District , Hanoi , Vietnam

1. Introduction

Accounting to 2015, Vietnam stock market has launched for 15 years, and started to operate officially about 10 years (2005-2015). It can be claimed that Vietnam stock market has grown energetically with the 660 listed enterprises as of 07th May 2014, including 301 companies listed on Ho Chi Minh stock exchange (HOSE) and 359 ones listed on Hanoi stock exchange (HNX) (State Security Commission of Vietnam (SSC), 2014). After the global economic crisis in 2008 causing recession, the listed joint stock companies have gradually adapted to the global integration by applying effective policies. Dividend policy is one of effective ways to create attractiveness for both domestic and international investors.

Dividend policy decides to distribute the enterprise's profit in which business makes the choice whether use earning after tax to reinvest or pay out dividends to shareholders. In term of corporate, profit after tax, considered as the lowest cost of funding source, is kept to support capital for company in reinvesting, expanding scale, and approaching to a larger project for development of business networks. However, this maintaining a major proportion of retained earnings also makes company's shares become less attractive. In contrast, shareholders are always desirable to a significant dividend payout ratio because it is their income from capital gains of the stock. Generally, company's shares having the high dividend payment rate will attract more investors. Thus, a dividend payment policy whether is high or low is a difficult problem and is not an exact answer yet.

*Author. Tel: 0904.782.747

Emai: nghuyen1104@gmail.com

Vietnam stock market is taken place into group of countries with the young ones in which is very volatile, and has small scale businesses, so investors get difficult to access easily and transparently information. Currently, financial market is imbalanced with a very high proportion about 80% of banking market, while the stock and insurance markets account for only about 20% (Governor of SBV-Nguyen Van Binh). The imbalance of the capital market will make the financial market distorted since banking credit has financed short, medium and long term, hence, the costs of capital from the banks of the enterprise for manufacturing, trading become higher. Therefore, dividend policy plays an important role as a signal to attract investors, thereby helping businesses access to medium and long term capital with lower costs.

There are a lot of given studying results about dividend policy in developing markets or emerging markets.

Husam-Aldin Nizar Al-Malkawi (2008) researching on the dividend payment policy of the Jordanian companies pointed out four factors affecting this policy, including: the profitability of the business, the financial leverage, the number of operating years, and the internal holding rate of managers.

Twaijry (2007) studied about Malaysia emerging markets and indicated that dividend policy business was affected by the dividend policy in the past and the future. Dividends was also influenced by profit which the greater company size, the higher the dividend payment. However, operating time and activities sector did not impact on the dividend payout ratio.

Moreover, Ahmed and Javid (2009) learned about the dividend payment policy of non-financial companies on the stock market Karichi in period from 2001 to 2006. They supported Linter's theory that dividend policy goals of the enterprise based on earnings per share (EPS) in the current and previous year. The profitability, the market liquidity, and the percentage of internal ownership had positive impact on the incidence of dividend payments while the market capitalization and the business scale had negative one on the dividend payout rate.

Similar to research about the listed companies on the stock Karichi in 2005-2010 period times, Mahira (2012) demonstrated that only two factors: corporate income tax and business scale in the six factors which was put into the regression model influenced same direction to the dividend payment policy of the enterprise.

Therefore, this study will contribute on the process of finding which drives corporate dividends policy in Vietnam, especially focusing on the manufacturing, business and trading services enterprises on HOSE in the stage after economic crisis in 2008. Accordingly, the paper will use econometric models to test the factors that affect the payout ratio of businesses in 2008-2013 periods. In addition, research also provide information about the theory of dividend payments in 2nd section, the dividend policy of the listed companies on the HOSE in 3rd part, and the research results evaluated in 4th one. The research focuses on studying the impact of factors on the dividend payout ratio of enterprises, including: free cash flow, company size, sale growth, profitability, financial leverage, return on equity (ROE), earnings per share (EPS), cash dividends on EPS, current ratio and collateral. Due to limitations of data collection, the model has been tested on 156 companies on HOSE from 2008 to 2013.

1. Literature review

Lintner's theory dividend payout policy

John Lintner, making foundation for the study of dividend policy, published his research in 1956 which was based on a 600 US listed companies survey. In his view, a stable dividend policy would be a good signal for the market about the business activities as well as stable future cash flows. The managers believed that reducing dividends would create negative and undesirable influences for the company's shares; therefore, enterprises would consider carefully for increase or decrease in dividends during a long term period of an unsustainable growth (decline) to avoid unexpected fluctuations in dividends, thereby maintaining and achieving rate dividend payout target. Based on his studies, Lintner built function setting dividend payout ratio target as follows:

$$D^* = ri.Pit\ it \quad (1)$$

$$Dt - Dt\text{-}1 = one + ci.\ (D^*\ it - Di\ (t\text{-}1)) + UIT \quad (2)$$

According to Lintner's theory given above, the target payout ratio of company would be affected by the last dividend payout ratio and profit after tax of the company during the studying period.

Gordon's theory of "The bird in hand"

In 1963, Gordon claimed a theory that dividends reduced the risks for investors, and was named as "The bird-in-the-hand" by Miller and Modiglian's theory. According to his study, the investors were concerned about risk and preferred dividends received in the present to company's promising prospect with high capital gain in the future. Hence, Gordon indicated that change in the company's dividend payout ratio would change investors' risk level when investing in stocks of company. A high dividend payment corporate would reduce the risk or limit uncertainty about future income flows for shareholders, thus attracting more investors, and vice versa. Overall, the psychological behavior of the shareholders would affect dividend policy of the enterprise.

Transaction costs theory

Beside of the psychological risk aversion, transaction costs is known as a factor leading investors consider whether selling stocks for capital gains or holding for periodic dividends payment. When companies pay low or nothing for dividends, investors tend to sell their shares for a profit that arises from the transaction costs and brokerage. These costs become expensive with individual stocks and small volume, so the income from capital gains cannot completely replace the dividends income as the theory of Miller and Modiglian. Obviously, investors would expect to earn a high dividend payout ratio to reduce costs. (Mueller, 1967; Alli et al., 1993)

Agency costs theory

Agency cost is also one of the factors affecting on the dividend payments rate. This theory was given by Jensen and Meckiling in 1976 through the conflict of interests between the managers and the shareholders. When the company pays a high dividend payout ratio, cash flow in business administration will be limited. The company must issue additional shares on the market for raising capital to expand the business. Thus, the number of shareholders increase and company's capital from outside managements is used more efficiently, and the interests of shareholders are enhanced. Investors will react positively with information about the high rate of payment dividends.

Signal theory

Also referring to the role of corporate management; however, signal theory stands on a different perspective to explain the dividend policy of the enterprise. According to this theory, dividend policy was supposed as a signal to the market managers and investors (Bhattacharya (1980), John Williams (1985)). When the signal of high dividend ratio that contains many positive contents of the operations, earnings, and future cash flow of the business is spread, investors will response respectively upon receiving this signal. A positive signal can make investor desire company’s stocks.

Catering theory

A new theory about meeting the investors’ needs of dividends (catering theory) was given by Baker and Wurgler in 2004. The research indicated that investors would be willing to invest in shares of companies if the corporate governance met their requirements. According to this theory, the company's stock price would raise with satisfying any reasonable or unreasonable dividends requirements of investors. In other word, a no dividend payment company will launch the dividends payout when they noticed that the company paying dividend would have a higher price in the market. This theory was based on the theory of psychological behavior of investors and tested by Baker and Wurgler.

Tax preference theory

Dividend policy in tax environment differs from that in perfect market. According to this theory, the enterprise should not pay high dividends because they reduce the investors' income and the company value (Miller and Scholes, 1978). In particular, the difference between tax on dividends income and capital gains in the US would affect the behavior of the shareholders. Tax on dividend income is higher than capital gains as usual. For instance, in the United States from 1961 to 2003, in order to save tax for its shareholders, the company paid a low dividend payout ratio and repurchase stocks (Brennan, 1970; Elton and Gruber, 1970; Kalay, 1982; Miller and Rock, 1985; ...).

Dividends payout theory in terms of issuing costs

That remaining a high dividend policy reduces the amount of retained earnings to reinvest, so makes company find additional funding sources from outside when they have larger capital requirements. However, this raising capital by issuing new shares increases the cost of capital by issuing cost. Therefore, the corporate governance tends to keep retain earning to reduce the cost of capital.

Life cycle theory

Regard of the impact of the dividend policy, life cycle theory (Lease et al (2000), Fama and Frech (2001)) showed that companies have a rational dividend policy for the operating situations in each stage of the business life cycle. In the first part of the business cycle, companies must use lots of outside capital; therefore, be under stringently external control. Moreover, managers also hold a high ownership proportion in this period, hence, interests of both managers and investors are similar respectively. Therefore, along with the increasing in production scale, the dividend payout ratio grows step by step. These factors will reduce agency costs. In the next stage when the business goes into stable, managers will be more cautious before adventuring projects. Besides, the ability of accessing information about the entire company will become slower due to the larger-scale. In this phase, the company will maximize shareholders' value by distributing its profits through dividend payments. In

the final stage of the cycle - low profitability, companies need to maximize the value of company through the liquidation to pay out all the shareholders. However, if managers continue to expand the scale in this period, the target dividend payout policy will differ to dividend policy that managers make (Chen, 2012).

2. Dividend policy of listed companies in Ho Chi Minh stock market

A lot of previous researcher have studied about what the factors are affecting to a corporate dividend decision. In this research, I focus on only 10 factors having effect on a Ho Chi Minh's corporate dividend policy as it find difficult to access the private company's information.

3.1.1. The firm's free cash flow

The agency cost theory found that firms should pay higher dividends to prevent managers from investing capital in inefficient projects and wasteful activities when having more free cash flow but there are not much more good investment. (Meckilig, 1976; Amidu và Abor, 2006; Mehta,2012,…)

Free cash flow has been measured by Cash and cash equivalents, end of year on the total assets.

Free cash flow = FCF/ Total assets

Hypothesis 1: Dividend payout is negatively associated with the firm's cash flow.

3.1.2. Collateralisable assets

When firms use loans, the business operation is controlled by the lenders. According to Chen and Dhiensiri's research in 2009, if firms have a lot of collateralisable assets, credit restrictions will be fewer as the risk of the loan with more collateralisable assets is lower than the one with no collateralisable assets. This will lead to a fewer agency problems between shareholders and bondholders when firms pay high dividend payments.

Collateralisable assets have been measured by fixed assets.

Collateralisable assets = Fix assets / Total assets

Hypothesis 2: Dividend payout is positively associated with collateralisable assets.

3.1.3. Size

According to previous researches made by Alli et al. (1985), Chay and Suh (2009), Ahmed and Javid (2009), Mehta (2012); the bigger size firms have, the higher dividend policy they pay and vice versa. As big companies can access easily with many sources from the capital markets and hence, this will lead to raise funds with lower issuing costs and higher agency costs. Therefore, if firms have large size, they will be pay high dividend, ceteris paribus.

There has a lot scales to measure a firm's size (such as sales, total assets, the capitalize market value, the equity value and so on) but in this research area, the measure used is total assets (Joseph, 2001).

Size = Total assets

Hypothesis 3: Dividend payout is positively associated with the firm's size.

3.1.4. Growth

When firms have many opportunities to invest and potential to expand the company's size, the managers will tend to retain more profit to reinvest as this capital has lower costs than the others such as borrowing from outside or issuing new stocks. That means firms must reduce or not pay the dividend and vice versa. In contract, the agency theory showed that when the firm have a strong cash flow but having no efficient investments, the firms will pay the high dividend ratio in order to avoid wasting of money by the managers. (Meckiling, 1976; Rozeff, 1982; Amidu và Abor, 2006; He et al, 2009; Mailik et al., 2013,…)

The growth has been measured by the sales growth ratio.

Sale growth = the current sales/ the previous sales.

Hypothesis 2: Dividend payout is positively associated with the firm's growth.

3.1.5. The financial leverage

The financial leverage shows the total debts over the total liabilities and owners' equity. The higher debts the firms use, the more control by creditors and the more financial risk they may face. Therefore, if the firms have higher financial leverage, the dividend ratio may be lower. This was researched by a lot of economists such as Rezeff, 1982; Myers, 1984; Jensen, 1986; He et al., 2009; Mehta, 2012 and so on. The firms must spend money and assets to creditor before paying dividend to shareholders. Besides, firms keeping the high debts ratio may reduce the dividend ratio if they do not want to face to high costs when increasing funds outside.

The financial leverage has been measured by the totalliabilities over the equity.

Hypothesis 5: Dividend payout is negatively associated with the financial leverage.

3.1.6. Profitability

The pecking order theory (Myers, 1984) showed that the capital in firms finance investment must be firstly from internal finance, and if external finance is necessary, firms prefer to use debt before issuing shares to reduce transaction and other costs, saving tax. So, taking into account more profitable firms like pay maintain low dividend policy to avoid high costs of issuing debt and equity financing, ceteris paribus. On the other hand, some theories suggest that the profitability has positively relationship with the dividend payment. According to them, the high and stable profitable firms may have strong cash flow and that is why the managers pay more dividend for shareholders (Jensen et al 1992, Han et al 1999, Fama và French 2002,…).

The profitability has measured by the return on assets, the return on equity and the earning per share.

The return on assets (ROA) = Profit before tax/ Total assets

The return on equity (ROE) = Profit after tax/ Equity

Earing per share = Profit after tax / Total outstanding shares.

Hypothesis 6: Dividend payout is positively associated with the firm profitability.

3.1.7. Liquidity

The liquidity or cash flows position is another important determinant of dividend payouts. According to Amidu and Abor (2006), Mehta (2012), the firms are likely to pay higher dividends to shareholders than the firms with a liquidity crunch. Companies have to maintain the liquidity at the stable degree in order to keep the flexibility in their operation. That is, taking into account, the higher liquidity firms have, the stronger cash flow they have and that is why dividends they pay is high.

The liquidity has measured by the current ratio.

Current ratio = current assets / current liabilities.

Hypothesis 7: Dividend payout is positively associated with the firm liquidity.

3.1.8. The dividend payout ratio on the earning per share

Chay and Sub (2009) suggest that this factor has the positive relationship with the dividend payment ratio as the firms with a strong cash flow are capable of paying higher dividends as compared to the firms with weak cash flow.

DPR on EPS = the dividend payout ratio on the earning per share.

Hypothesis 8: Dividend payout is positively associated with the dividend payout ratio on the earning per share.

3.2. The research method

3.2.1. The research data

This research focuses on analyzing the cash dividend payout ratio of 156 listed companies on Ho Chi Minh stock market from 2008 to 2013. As the HOSE is in the process of improvement and development about both the operation and legal framework, the estimated of converting value of stock dividend into cash is inaccuracy and complexity. Therefore, in this section, cash dividend payout is only considered in

researching what the factors have relationship with the HOSE's dividend payout ratio from 2009 to 2013.

Besides, in Ho Chi Minh stock market, the banking and finance sector has not close relationship with the HOSE's dividend payout ratio. Moreover, the priority in this sector and the information asymmetry in Vietnam developing stock market, the cut or reduction in its dividend payment may have significant fluctuation on the market (Nguyen et al., 2013). Therefore, this research only concentrate on non-financial listed companies.

Up to 2009, Ho Chi Minh stock market has 184 listed companies and 172 listed companies in non-financial sector. However, there are 16 companies delisted on HOSE after the world economic crisis from 2009 to 2013. In summary, the number of companies taken into the research is 156.

3.2.2. The research method

There has 780 observations of 156 listed firms observed over 5 years during 2009-2013 in this investigating the determinants of dividend payout policy. The research data is arranged by panel data.

The first econometric model used to deal with panel data is Pooled Ordinary Least Square (Pooled OLS). This model tests how the independent variables affect on dependent variable with assumptions. In order to estimate the appreciation of independent variables, we in turn regress models and calculate the BIC value after excluding the independent variable with the smallest T-statistic value. Finally, we choose the Pooled OLS with the smallest BIC value.

However, in reality, Pooled OLS has lots of tight assumptions, so it find difficult to satisfy with all of them. Therefore, we can use the fixed effect model (FEM) and the random effect model (REM) to replace the Pooled OLS.

In order to choose between FEM and REM, we conduct to use a Hausman test developed by Hausman in 1978. According to his theory, the null hypothesis is "There

has no differences between two models". If this hypothesis is rejected, we choose FEM instead of using REM.

In addition, we test the individual effect of each sector on the dividend payout ratio by adding dummy variables into regression model.

3.3. Regression model and variable definitions

The model in this research can be written as:

$$\begin{aligned} DPR_{it} = {} & \beta_0 + \beta_1 FCF_{it} + \beta_2 ASSET_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} \\ & + \beta_7 ROE_{it} + \beta_8 EPS_{it} + \beta_7 ROE_{it} + \beta_8 EPS_{it} + \beta_9 CR_{it} + \beta_{10} DIVIDEND_{it} \\ & + \varepsilon_i \end{aligned}$$

The definitions of the variables are summarized in table 1.

Table 1: Variable definitions

Variable	**Abbreviation**	**Definition**
Dependent variable		
Dividend payout ratio	DPR	Cash dividends / Par value
Independent variables		
Free cash flow	FCF	FCF / Total assets
Collateralisable assets	ASSET	Fixed assets / Total assets
Firm size	SIZE	Log of total assets
Firm growth	GROWTH	Current sales / last year sales
Financial leverage	LEV	Liabilities / Equity
Profitability	ROA	Profit before tax / Total assets
	ROE	Profit after tax / Equity
	EPS	Profit after tax / Total outstanding shares

Liquidity	CR	Current assets / Current liabilities
DPR on EPS	DIVIDEND	Cash divdiends / EPS

4. Analyzing data

4.1. The outstanding data analysis

According to this above descriptive statistic for dependent and independent variables used in the Pooled OLS, we can have some outstanding appreciations about 156 listed companies in Ho Chi Minh stock market. Table 2 shows that the average dividend payout ratio of 156 listed companies during 2008 and 2013 is 11.978% with the standard deviation of 11.814%. This means, on average, the listed companies in Ho Chi Minh stock market spend 11.978% the profit after tax to pay dividends. We also see that a fluctuation gap of the dividend payout ratio of listed companies in HOSE is quite large with the maximum value of 70% and the minimum value of 0%.

In addition, based on this table we can have other cognizance about the average value, standard deviation and fluctuation gap of 10 independent variables.

Table 2: Descriptive statistics for listed firms in HOSE

Variable	Obs	Mean	Std. Dev.	Min	Max
fcf	780	.3399736	3.847702	-.133864	97.76767
asset	780	1.522642	16.57641	.0003203	294.9771
size	780	11.94239	.6020455	8.786185	13.87951
growth	780	5.839568	91.09281	.0165164	2089.184
lev	780	1.673929	2.919718	-26.47752	35.4523
roa	780	.4253396	4.136802	-.5101118	86.65801
roe	780	.1408901	.4857375	-1.866966	11.86864
eps	780	3016.911	8179.73	-10332.38	204979
cr	780	2.094564	2.390639	.0121834	40.43715
dividend	780	4.806378	90.6879	-256.8534	2399.068
dpr	780	.1197821	.1181417	0	.7

Source: Table extracted from Stata/SE 12.0 software

Multicollinearity test

Based on this above correlation coefficient table, we can see that almost the independent variables have low correlation with the others, but the quite high correlations between FCF and ASSET, ASSET and ROA, ROE and EPS (in turn is 0.8708 ; 0.7401 ; 0.9098) may cause the multicollinearity in model. However, this sign has unsignificant effect on the regression model in general. Therefore, we can conclue most of the independent variables have no strong correlation and that is a good sign to test the model in next section.

Table 3 : The correlation coefficients among variables of listed companies in HOSE

	dpr	**fcf**	**asset**	**Size**	**growth**	**lev**	**roa**	**roe**	**eps**	**cr**	**dividend**
dpr	1										
fcf	-0.0105	1									
asset	-0.0022	0.8708	1								
size	0.0297	-0.2862	-0.3334	1							
growth	-0.0501	-0.0032	-0.0044	0.0466	1						
lev	-0.1346	0.0758	0.0563	0.1689	-0.004	1					
roa	0.0409	0.4844	0.7401	-0.3403	-0.0044	0.0066	1				
roe	0.1553	-0.0086	-0.0085	0.0313	-0.0025	-0.112	0.0029	1			
eps	0.2441	-0.0097	-0.0086	0.0582	-0.0089	-0.0399	0.0066	0.9098	1		
cr	0.1263	-0.0209	-0.0291	-0.1752	-0.0038	-0.162	-0.0202	0.0134	0.0295	1	
dividend	-0.0451	-0.0036	-0.0038	-0.1575	-0.0017	-0.0113	-0.0037	-0.005	-0.0179	0.0184	1

Source: Table extracted from Stata/SE 12.0 software

4.2. The regression model

4.2.1. The Pooled OLS model

In order to test the appropriation of the independent variables in model, we conduct to regress the models and calculate the BIC following above steps in section 3.2.2.

Table 6: The BIC value of each Pooled OLS model

The regression model	**AIC value**	**BIC value**	**The vaiable with the smallest T-statistic value**
10 original variables	-1204.46	-1153.207	FCF
9 variables (excluding FCF)	-1206.01	-1159.418	ASSET
8 variables (excluding ASSET)	-1207.632	-1165.698	DIVIDEND
7 variables (excluding DIVIDEND)	-1208.934	-1171.659	GROWTH
6 variables (excluding GROWTH)	-1208.79	-1176.175	ROA
5 variables (excluding ROA)	-1207.399	-1179.443	SIZE
4 variables (excluding SIZE)	-1207.374	-1184.077	CR
3 variables (excluding CR)	-1202.464	-1183.826	3 remaining variables have the approximate T-statistic value.

Source: Table extracted from Stata/SE 12.0 software

In conclusion, the Pooled OLS with 10 variables is the chosen model to research in next.

Conducting to regress the Pooled OLS model, we have the table 4 and 5.

Table 4: The Pooled OLS model from STATA

Source	SS	df	MS	Number of obs =	780
				F(10, 769) =	11.31
Model	1.39429954	10	.139429954	Prob > F =	0.0000
Residual	9.47856367	769	.012325831	R-squared =	0.1282
				Adj R-squared =	0.1169
Total	10.8728632	779	.013957462	Root MSE =	.11102

Source: Table extracted from Stata/SE 12.0 software

According to the Fisher test result about the appropriation of model, we see that the P-value is approximately 0% smaller than 5%, so the null hypothesis: "The Pooled OLS model is not appropriate" is rejected. This means The Pooled OLS can be chosen as the independent variables may explain the change of the dependent variable (DPR).

Table 5: The Pooled OLS model from STATA

dpr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fcf	.0016062	.0024136	0.67	0.506	-.0031318	.0063442
asset	-.0006402	.0007262	-0.88	0.378	-.0020657	.0007853
size	.0136329	.0075009	1.82	0.070	-.0010919	.0283577
growth	-.0000634	.0000437	-1.45	0.147	-.0001493	.0000224
lev	-.0062197	.0014323	-4.34	0.000	-.0090314	-.0034081
roa	.0030153	.0016592	1.82	0.070	-.0002418	.0062725
roe	-.1055489	.0201364	-5.24	0.000	-.1450777	-.0660201
eps	9.01e-06	1.19e-06	7.56	0.000	6.67e-06	.0000113
cr	.0050367	.0017175	2.93	0.003	.0016651	.0084083
dividend	-.0000373	.0000445	-0.84	0.403	-.0001247	.0000502
_cons	-.0557836	.0901139	-0.62	0.536	-.2326819	.1211147

Source: Table extracted from Stata/SE 12.0 software

In order to estimate the appropriation of beta coefficients individually, we conduct to compare each P-value with 5%. The null hypothesis is "$\beta_i = 0$" (with i = [1; 10]). If the P-value is greater than 5%, we cannot reject the null hypothesis. This means

that the variables including FCF, ASSET, GROWTH and DIVIDEND is seem to not explain the fluctuation of DPR.

In Pooled OLS model, we conduct to test some assumptions of OLS and conclude that this model is not satisfied the homoscedasticity assumption.So, the Robus model in STATA software is conducted to repair this error. However, when testing for homoscedasticity, the Robus model is still not satisfied this assumption but it is the best Pooled OLS model we can used to research.

Table 6: The Robus model from STATA

Linear regression

Number of obs	= 780
F(10, 769)	= 80.33
Prob > F	= 0.0000
R-squared	= 0.1282
Root MSE	= .11102

dpr	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
fcf	.0016062	.0014919	1.08	0.282	-.0013225	.004535
asset	-.0006402	.000505	-1.27	0.205	-.0016315	.000351
size	.0136329	.0081371	1.68	0.094	-.0023407	.0296065
growth	-.0000634	3.93e-06	-16.13	0.000	-.0000712	-.0000557
lev	-.0062197	.0030242	-2.06	0.040	-.0121564	-.000283
roa	.0030153	.001261	2.39	0.017	.0005399	.0054907
roe	-.1055489	.0409215	-2.58	0.010	-.1858799	-.0252178
eps	9.01e-06	2.62e-06	3.44	0.001	3.87e-06	.0000141
cr	.0050367	.0029621	1.70	0.089	-.000778	.0108514
dividend	-.0000373	.0000113	-3.29	0.001	-.0000595	-.000015
_cons	-.0557836	.0953391	-0.59	0.559	-.2429394	.1313722

Source: Table extracted from Stata/SE 12.0 software

4.2.2. The fixed effect model (FEM)

Conducting to run the FEM on STATA software, P-value in this model 7.9% is greater than 5%, therefore, we cannot reject the null hypothesis "The FEM is not appropriate". That means the independent variables cannot explain the fluctuation of dependent variable.

4.2.3. The random effect model (REM)

After running the REM on STATA software, we have the result in table 7.

Table 7: The result of REM on STATA

```
Random-effects GLS regression                   Number of obs      =       780
Group variable: cty                             Number of groups   =       156

R-sq:  within  = 0.0240                         Obs per group: min =         5
       between = 0.2343                                        avg =       5.0
       overall = 0.1165                                        max =         5

                                                Wald chi2(10)      =     35.71
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0001
```

dpr	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fcf	-.0019892	.0017326	-1.15	0.251	-.005385	.0014067
asset	.0004661	.0005472	0.85	0.394	-.0006065	.0015387
size	.0067751	.0099415	0.68	0.496	-.0127099	.02626
growth	-.0000125	.0000325	-0.38	0.702	-.0000762	.0000513
lev	-.0039826	.0014565	-2.73	0.006	-.0068373	-.001128
roa	.0005341	.0013091	0.41	0.683	-.0020317	.0031
roe	-.0448654	.0159095	-2.82	0.005	-.0760475	-.0136833
eps	4.00e-06	9.55e-07	4.19	0.000	2.13e-06	5.88e-06
cr	.001803	.0014677	1.23	0.219	-.0010737	.0046796
dividend	-1.29e-06	.0000347	-0.04	0.970	-.0000692	.0000667
_cons	.0358201	.119241	0.30	0.764	-.1978879	.2695281
sigma_u	.0770528					
sigma_e	.07239747					
rho	.53111953	(fraction of variance due to u_i)				

Source: Table extracted from Stata/SE 12.0 software

The model's P-value (0.01%) is approximately 0%. The result is quite smaller than 5%, so we can reject the null hypothesis: "The REM is not appropriate". This means the independent variables including FCF, ASSET, SIZE, GROWTH, LEV, ROA, ROE, EPS, CR, DIVIDEND is seem to explain the fluctuation of the dependent variable (DPR). Comparing the P-value of each independent variable as 5%, we see that 3 variables including LEV, ROE, EPS are statistically significant with DPR (the P-value in turn is 0.6%; 0.5%; 0%). In summary, the fluctuation of DPR can be explained

by the change of 3 factors: the financial leverage, the return on equity and the earning per share.

4.3. Choosing the research model

This research shows 3 model: Pooled OLS, FEM and REM, in which the FEM is not appropriate to explain the changes of DPR. Therefore, the Breusch-Pagan Lagrange multiplier test is conducted to choose between Pooled OLS and REM. The null hypothesis is "the Pooled OLS is appropriate"

Table 8: The result form the Breusch-Pagan Lagrange multiplier test

```
Breusch and Pagan Lagrangian multiplier test for random effects

        dpr[cty,t] = Xb + u[cty] + e[cty,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+------------------------------
                     dpr |    .0139575       .1181417
                       e |    .0052414       .0723975
                       u |    .0059371       .0770528

        Test:   Var(u) = 0
                                 chibar2(01) =   421.93
                              Prob > chibar2 =   0.0000
```

Source: Table extracted from Stata/SE 12.0 software

The P-value which is approximately 0% proves that the null hypothesis is rejected and we choose the Random Effect Model.

4.4. Analyzing the REM

The result of REM indicates that there 3 factors including the financial leverage, return on equity and earning per share in 10 factors taken in model have a significant relationship with the dividend payout ratio of listed companied on HOSE.

Specifically, as can be seen from the result that the $\beta_8$of EPS variable is approximately 0, so we can consider that this factor is not statistically significant with the DPR. From table 7, the REM indicates that ROE is significant and negatively

related to DPR. This is explained that when ROE increases by 1%, DPR decreases by 0.045%. So the result from REM is contrary to theoretical prediction. According to the research assumption, firms with high and stable profitability may have strong cash flow to pay dividends. Therefore, this result is explained by the pecking order theory that firms want to retain more earning to avoid high costs, that is why the higher profit firms have, the lower dividends they pay.

The model also indicates that LEV has a positive and statistically significant relationship with DPR. When financial leverage increases by 1%, DPR decreases by 0.004%. This result is expected with the research prediction from the transaction cost theory. According to this theory, firms with high financial leverage tend to reduce the dividend payments to avoid high transaction costs and the other costs. However, the value of the LEV's beta is quite small, that means the effect on dividend payout ratio of leverage is not significant as we expected.

Next, we conduct to run the Pooled OLS regression model for 10 independent variables and the dummy variables. In table 8, Dnln, Ddien, Dxd, Dvtai, Dbds, Dkhcn, Dcbct, Dkk, Dbb are dummy variables for the agricultural-forestry-fishery industry; manufacturing and distribution of electricity, gas; construction industry; transportation and storage industry; real estate industry; the scientific and technical services industry; manufacturing industry; mining industry; other services industry. The base industry not included in the model is the storage and food industry. (The industries are arranged by the state securities commission of Viet Nam in 2009)

Table 9: The result of the model with dummy variables from STATA

Source	SS	df	MS	Number of obs =	780
				F(19, 760) =	13.49
Model	2.74226685	19	.144329834	Prob > F =	0.0000
Residual	8.13059635	760	.010698153	R-squared =	0.2522
				Adj R-squared =	0.2335
Total	10.8728632	779	.013957462	Root MSE =	.10343

dpr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fcf	.0011207	.00225	0.50	0.619	-.0032961	.0055376
asset	-.0005013	.0006776	-0.74	0.460	-.0018314	.0008288
size	.0196003	.0071543	2.74	0.006	.0055558	.0336447
growth	-.0000543	.0000408	-1.33	0.184	-.0001345	.0000258
lev	-.0050774	.0013629	-3.73	0.000	-.0077528	-.002402
roa	.0029195	.0015477	1.89	0.060	-.0001187	.0059577
roe	-.0847926	.0189737	-4.47	0.000	-.1220397	-.0475455
eps	7.44e-06	1.13e-06	6.59	0.000	5.23e-06	9.66e-06
cr	.0055135	.0016647	3.31	0.001	.0022456	.0087814
dividend	-.0000105	.0000418	-0.25	0.802	-.0000926	.0000717
dnln	.1907901	.0504737	3.78	0.000	.0917058	.2898745
ddien	.0524994	.0501876	1.05	0.296	-.0460234	.1510221
dxd	.0580939	.0484323	1.20	0.231	-.0369831	.153171
dvtai	.0702932	.0483992	1.45	0.147	-.0247188	.1653053
dbds	.0459429	.0478063	0.96	0.337	-.0479052	.1397911
dkhcn	.0630249	.056856	1.11	0.268	-.0485886	.1746384
dcbct	.0952395	.0470171	2.03	0.043	.0029408	.1875383
dkk	.2527402	.0510678	4.95	0.000	.1524894	.352991
dbb	.0864043	.0475013	1.82	0.069	-.006845	.1796536
_cons	-.2149195	.0931336	-2.31	0.021	-.3977493	-.0320898

Source: Table extracted from Stata/SE 12.0 software

According to the result of regressing the model with 9 dummy variables, we can see that 3 industries including the agricultural-forestry-fishery industry;mining industry; manufacturing industry are statistically significant differences in DPR from the storage and food industry. Specifically, 3 industries are statistically in DPR higher than the storage and food industry (the beta coefficient value of Dnln, Dcbct and Dkk is greater than 0). In addition, P-value of β_0 which is lower than 5% indicates that the storage and food industry have a significant relationship with the dividend payout ratio, ceteris paribus.

5. Conclusion

This research shows the quantitative picture about what the factors are significantly with the dividend payout policy of the listed companies on Ho Chi Minh stock market during 2009 and 2013. Therefore, both the listed companies and investors can have more informative to make their decisions on HOSE in particularly and on Viet Nam stock market in general. Between the dividend payment methods, this research only focus on the cash dividends.

The econometric used to regress the panel data of 156 listed companies from 2009 to 2013 is random effect model. According to the result of REM, there has 3 factors having a significant relationship with the dividend payout ratio. In which, both the ROE and the LEV variables are statistically and negatively significant with DPR; the EPS is notclearly significant with DPR. Moreover, after testing the effect on DPR of the industries, the storage and food industry has a significant relationship with DPR and 3 industries including the agricultural-forestry-fishery industry; mining industry; manufacturing industry are statistically in DPR higher than this industry.

Reference books:

1. Ahmed, H and Javid, A 2009, „Dynamics and Determinants of Dividend Policy in Pakistan (Evidence from Karachi Stock Exchange Non-Financial Listed Firms), International Research Journal of Finance and Economics , ISSN 1450-2887, Issue 25.
2. Al-Malkawi, H. and Nizar, H. (2008), "Factors Influencing Corporate Dividend Decision: Evidence from Jordanian Panel Data", International Journal of Business, 13(2), pp. 177-195.
3. Amidu M. and Abor J. (2006), "Determinants of dividend payout ratios in Ghana", The Journal of Risk Finance, Vol. 7, 136-145
4. Al-Twaijry, AA 2007, Dividend policy and payout ratio: Evidence from the Kuala Lumpur Stock Exchange", The Journal of Risk Finance, Vol. 8 No. 4, pp. 349- 363.

5. Baker, Malcolm and Jeffrey Wurgler (2004), “A Catering Theory of Dividends”, Journal of Finance 59(3), 1125–1165.
6. Bhattacharya, S. 1979. ‘Imperfect Information, Dividend Policy, and the “Bird in the Hand” Fallacy’, Bell Journal of Economics and Management Science, Vol. 10, pp. 259–270.
7. Black, F., and Scholes M. (1974), “The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns”, Journal of Financial Economics, 1, pp. 1-22
8. Brennan, M. (1970), “Taxes, market valuation, and corporate financial policy”, National Tax Journal, pp. 23, pp. 417-427
9. Chay, J. B. and Suh, J. (2009), “Payout Policy and Cash-flow Uncertainty”, Journal of Financial Economics, 93(1), pp. 88-107.
10. Fama, E. & Babiak, H. (1968). Dividend policy: An empirical analysis Journal of American Statistical Association, December, pp. 1132-1161.
11. Fama, E. F. & French, K. R. (2002) “Testing Trade-Off and Pecking Order Predictions about Dividends and Debt” The Review of Financial Studies, Vol. 15: pp. 1-33.
12. Jensen, M.C., Meckling, W.H., 1976. “Theory of the firm: managerial behavior, agency costs and ownership structure”, Journal of Financial Economics 3.
13. Gordon, M. (1961), “The Investment, Financing, and Valuation of the Corporation”, Review of Economics and Statistics.
14. He, X., Li, M., Shi, J. and Twite, G. (2009), “Determinants of Dividend Policy in Chinese Firms: Cash versus Stock Dividends”, Journal of Corporate Finance.
15. Kumar, P. C., and George P. Tsetsekos, 1999, “The Differentiation of 'Emerging' Equity Markets”, Applied Financial Economics 9, pp. 443-453.
16. Lintner, J. (1956), “Distribution of Incomes of Corporations among Dividends, Retained Earnings and Taxes”, The American Economic Review, 46(2), pp. 97-113.

17. Mahira Rafique (2012), Factors Affecting Dividend Payout: Evidence From Listed Non-Financial Firms of Karachi Stock Exchange.
18. M.C. Jensen, "Agency Costs of Free Cash Flow, Corporate Finance and Takeovers." American Economic Review, 1986, vol 76 (2), pp 323-329.
19. Mehta, A. (2012), "An Empirical Analysis of Determinants of Dividend Policy - Evidence from the UAE Countries", Global Review of Accounting and Finance, 3(1), pp. 18-31.
20. Miller, M. and Modigliani, F. (1961),"Dividend Policy, Growth, and the Valuation of Shares", The Journal of Business, 34(4), pp. 411-433.
21. Myers, S. and Majluf, N. (1984), "Corporate Financing and Investment Decisions when Firms have Information that Investors do not have", Journal of Financial Economics, 13(2), pp. 187-221.
22. Nguyễn Kim Thu, Lê Vĩnh Triển, Dương Thúy Trâm Anh, Hoàng Thành Nhơn (2013), VNU Journal of Economics and Business Vol. 29, No. 5E (2013) 16-33, "Determinants of Dividend Payments of Non-financial Listed Companies in Ho Chi Minh Stock Exchange.
23. Trần Thị Hải Lý (2012), Tạp chí phát triển và hội nhập p.13- 16, "Quan điểm của các nhà quản lý doanh nghiệp Việt Nam về chính sách cổ tức với giá trị doanh nghiệp".