

## **Determinants of Dividend Decision: Evidence from the Indonesia Stock Exchange**

Jenjang Sri Lestari  
 Atma Jaya Yogyakarta University  
jenjang\_lestari@yahoo.com,  
jenjang\_lestari@mail.uajy.ac.id

— *Review of* —  
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 Economics**  
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### **ABSTRACT**

During the sample period, the percentage of firms distributing dividend decreased significantly. This study aims at finding the determinant of dividend decision, i.e. the decision to pay or not to pay dividend. Qualitatively, dividend payers are more profitable, bigger, have less growth and have higher ratio of retained earnings to total assets than that of non payers. Quantitative analysis using logit regression shows that probability of firms paying dividend are higher when firms have higher ratio of retained earnings to total assets (RE/TA)—a proxy of firm's maturity. The importance of RE/TA to the dividend decision means that mature firms are more likely to pay dividend than younger firm. The fact that dividends are paid by bigger and more mature firms casts doubt to the signaling hypotheses but provides support to agency-based life cycle theory.

**Keywords:** *Dividend decision, agency-based life cycle theory.*

### **1. Introduction**

From 1994 to 2006, Indonesia had a more liberal regulation on dividend payment than that of applying in developed country. The Indonesia Corporate Act 1994 (prevailed from 1994 – 2007) did not preclude firms that experienced both negative retained earnings and negative net income to pay dividends so long they have cash available<sup>1</sup>. Interestingly, during the period of relatively less legally constrained, the percentage of dividend paying firms decreased significantly. This paper will investigate the determinants of firms' decision to pay or not to pay dividends.

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<sup>1</sup> The 1994 Corporate Act is superseded by the 2007 Corporate Act. The 2007 Corporate Act placed a restriction on dividend payment with regards to retained earnings, paid in capital and net assets (chapter 70-72).

The decrease in the percentage of firms paying dividend is not uniquely Indonesia. This phenomenon, referred to as disappearing dividends, first found by Fama and French (2001). They found that in the U.S the percentage of firms paying dividend decrease significantly from 66.5% in 1978 to 20.8% in 1999. The study of disappearing dividends then followed by the research to investigate whether dividends are also disappear in other market ((Denis and Osobov 2008, Ferris, et al. 2006, Ronapat and Evans 2005 and Reddy and Rath 2005). Besides, the Fama and French (2001) study of *disappearing dividends* phenomenon is also followed by the research on the likely explanation of that disappearing from many finance perspective. Amihud and Li (2006) propose signalling-based explanation while DeAngelo et al (2006) propose agency-based life cycle. Baker and Wurgler (2004a, 2004b) try to explain using a behavioural – based theory named catering theory. As the stock repurchases gain more popularity as a mean to distribute cash to shareholders, Grullon and Michaely (2002) use the dividend/share repurchase substitution hypotheses to explain the decision to pay dividend. While all those theories are able to explain dividend decision using the U.S data, Denis and Osobov (2008) research in other developed market found that signalling, clientele and catering theory are not empirically supported. Their research, instead, lend support to agency-based life cycle theory of dividend decision.

In a world of asymmetric information and agency problem, it is argued that the first order determinant of the decision to pay or not to pay dividend is the need to distribute free cash flow (FCF-hereafter) (Allen and Michaely, 2002; DeAngelo et al, 2009). The agency-based life-cycle theory further argue that the distribution of FCF to shareholder follows firm's life cycle. Young firms tend to avoid distributing their FCF in favour of using it to finance their available profitable investment opportunities. Mature firms, on the other hand, tend to distribute their FCF. In their maturing stage, they have accumulated significant amount of FCF and usually face less investment opportunity. In this stage, distribution dominates retention.

This research will test the determinants of dividend decision using agency-based life cycle theory. It will examine whether the probability of firms paying dividend is positively related to the proxy of life cycle stage i.e the ratio of retained earnings to total asset (RE/TA). Retained earnings (RE) is firm's earned capital. It is an accumulation of profit/loss of a firm during their life.. RE/TA thus measures the extent to which a firm is self reliant in financing their assets. Mature firms are more self reliant than young firms.

This research find that qualitatively, dividends are paid by bigger, more profitable, more mature firms with less growth. Quantitatively, it is RE/TA – the proxy for life cycle stage - that has positive impact to the probability of firms paying dividend.

The rest of the paper is organized as follows. The next section is literature review and hypotheses development. This section followed by sections on methodology and data analysis. The last section is conclusion.

## **2. Literature Review ad Hypotheses Development**

Modigliani and Miller (1961) argue for dividend irrelevancy under the perfect market assumption. Relaxing those assumptions leads us to signaling, clientele, agency-based life cycle and more recently behavioral-based catering theory of dividend. Yet, the decision to pay or not to pay dividend remains an empirical questions. So far, research results shows that signaling, clientele, and catering theory are not empirically supported. Empirical research tends to lend support to agency-based life cycle theory (DeAngelo *et al*, 2009)

Signaling hypotheses argue that manager may use dividend to signal future prospect of firm's earnings. However, empirical result shows that dividend tells more about past earnings rather than future earnings (Benartzi *et al*, 1997; Koch and Sun, 2004). DeAngelo (2004) shows that dividends are paid by firms with little need to signal. Finally, Brav *et al* (2005) confirms that signalling is not the first order determinant to pay dividend. Thus, signalling is empirically not supported.

Clientele theory states that firms tailor made their dividend decision as to satisfy the heterogenous investor demand. Empirical research, however, only lend few support on it (DeAngelo *et al* 2009; Grinstein and Michaely, 2005)<sup>2</sup>. Baker and Wurgler's catering theory (2004a and 2004b) sometime is considered as behavioural variant of clientele theory since under this theory it is argue that firms cater to the time-varying dividend demand of investors. Firms will pay dividend when investors

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<sup>2</sup> Allen *et al* (2000) argue for tax clienteles but Grinstein and Michaely (2005) further test do not support Allen *et al*(2000) argument.

put a premium on dividends paying shares. This theory works well in explaining dividend decision in the U.S but fails to be supported empirically in other developed market (Denis and Osobov, 2008).

This research tries to provide further evidence on the applicability of agency-based life cycle of dividend decision using the ratio of retained earnings to total assets (RE/TA) as a proxy for life cycle stage. From accounting point of view, retained earnings (RE) provides the record of the history of firms profitability. Mature firms usually accumulated more profit throughout their life while young firms possibly have lower retained earnings. RE/TA shows company self reliant in financing their assets. Low RE/TA indicates that firms may be in capital infusion stage (young stage). They use more liability and/or issuing more stock to finance their projects. High RE/TA shows that firms are more self reliant in financing their projects. Thus the hypotheses (stated in alternate form) is as follow:

H1: Firm's life cycle as proxied by RE/TA has positive impact to the probability of firm's decision to pay dividend.

### **3. Methodology**

#### **3.1. Sample Selection**

The sample is all industrial/commercial (non financial services) firms consecutively listed in the Indonesia Stock Exchange<sup>3</sup> from 1995 to 2006. The sample ended at 2007 because in 2007, the Government of the Republic of Indonesia superseded Corporate Act 1994 with Corporate Act 2007. Corporate Act 2007 placed a restriction on dividend payment with regards to retained earnings, paid in capital and net assets. So the sample end at 2006 in order to have homogenous dividend regime setting.

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<sup>3</sup> For most of the years during the sample period the Jakarta Stock Exchange was the dominant exchange in Indonesia. In 2007, the Jakarta Stock Exchange and the Surabaya Stock Exchange were consolidated to form the Indonesia Stock Exchange. In this paper "Indonesia Stock Exchange" and "Jakarta Stock Exchange" are used interchangeably.

### 3.2. Empirical Model

In most respect, this paper follows the model employed by Fama and French (2001) and DeAngelo et al (2006). First, I estimate the regression using distinguished characteristics of dividend payers and non payers as explanatory variables. The formal logit regression is as follow:

$$Y_t = \gamma_0 + \gamma_1 E_t/TA_t + \gamma_2 dTA_t/TA_t + \gamma_3 TA_t + e_t$$

where

$Y_t$  : the decision to pay dividends. It equals 1 for payers at time t and 0 otherwise.

$E_t$  : earnings at time t

$TA_t$  : total assets at time t

$dTA_t$  :  $A_t - A_{t-1}$

$E_t/TA_t$ ,  $dTA_t/TA_t$  and  $TA_t$  are proxies for profitability, growth and size respectively. Profitability, growth and size are distinguished characteristics of payers and non payers in the Fama and French (2001).

The second logit regression is estimated by adding  $RE/TA$  in the explanatory variables to see the impact of life cycle stage on the decision to pay dividend. The logit equation is as follow

$$Y_t = \gamma_0 + \gamma_1 RE_t/TA_t + \gamma_2 E_t/TA_t + \gamma_3 dTA_t/TA_t + \gamma_4 TA_t + e_t$$

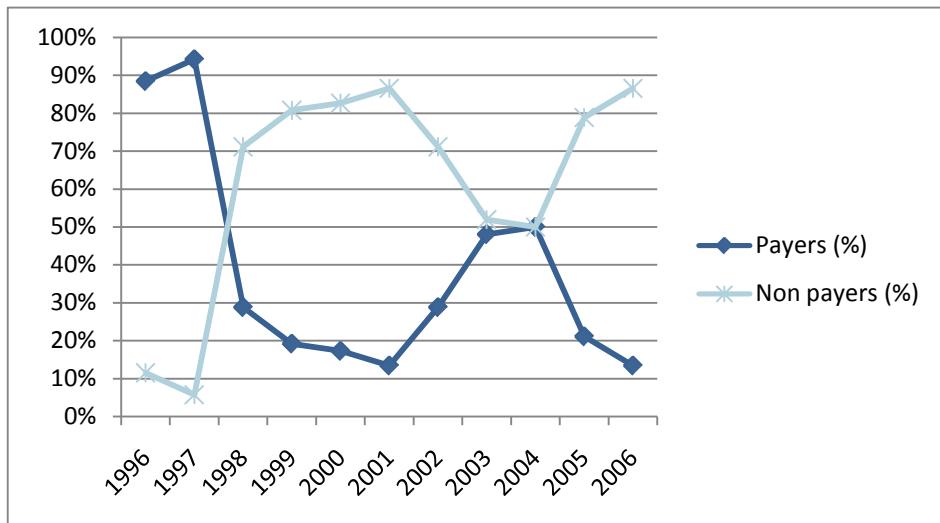
where

$RE_t$  : retained earnings at time t. Other variables has the same definition as the in the first logit regression.

## 4. Analysis

### 4.1. Descriptive Statistics

The percentage of sample firms paying dividend during 1995 -2006 decrease significantly. It can be seen in figure 1 that the percentage of sample firms paying dividends decrease from 88% in 1995 to 13% in 2006.

**Figure 1 The percentage of sample firms in different dividend groups.**

Payers pay dividends in year t, non-payers do not.

Payers and non payers have different characteristics. Following Fama and French (2001) and DeAngelo et al (2006), the characteristics of interest are profitability, Size, growth and life cycle stage. Table 1 below presents the mean, median and standards deviation of payers and non payers with regard to the above characteristics.

**Table 1 Characteristics of Payers and Non-Payers**

Reported values are mean, median and standard deviation of profitability, growth, size and life cycle stage for firms in different dividend groups. Profitability is measured by  $E_t/TA_t$  where  $E_t$  is earnings before interest,  $TA_t$  is book value of total assets at year t, Growth is measured by  $d TA_t / A_t$  namely the percentage change in book value of total assets. Size is measured by  $TA_t$ . Life cycle stage is measured by  $RE/TA$  where  $RE$  is retained earnings.

	RE/TA	Profitability	Growth	Size
Payers' Mean	0.21	0.06	-40.46	38 699.18
Payers' Median	0.20	0.06	0.14	3 567.22
Payers' std Dev	0.20	0.11	163.09	85 231.37
Non - Payers' Mean	-0.14	-0.02	-16.47	21 270,76
Non - Payers' Median	0.00	0.02	0.03	2 601.16
Non-Payers' std Dev	0.64	0.22	120.73	68 263.86

Table 1 shows that on average payers are more profitable, more mature, have less growth and have bigger size. This result gives a preliminary support to the agency-based life cycle theory of dividend payment i.e. dividend payers are more mature than non payers.

#### **4.2. Test of Agency – Based Life Cycle Theory**

Presented below is the logit regression result of the first and second regression equation using full sample period data

**Table 2 Test of Agency Based Life Cycle Theory**

Logit regression is used to explain dividend payout decision. The dependent variable equal 1 for payers at time t and 0 otherwise. The explanatory variables are profitability (prof)measured by  $E_t/TA_t$ , growth ( $dTA_t/TA_t$ ), Size ( $TA_t$ ) and earned capital ( $RE_t/ TA_t$ ). Et is earning before interest at time t. TAt is total assets at time t.  $dTA_t = TA_t - A_{t-1}$ . RE<sub>t</sub> is retained earnings at time t.,

<i>Coefficient</i>					<i>t-statistic</i>				
Int	RE/TA	Prof	Growth	Size	Int	RE/TA	Prof	Growth	Size
0.355		0.495	-0.000	6.27E-07	<b>16.45</b>		<b>4.700</b>	<b>-2.038</b>	<b>2.370</b>
0.369	0.243	0.135	-0.000	3.74E-07	<b>17.466</b>	<b>5.734</b>	1.127	-1.533	1.432

The central prediction of this paper is that the probability of firms paying dividend increases with the life-cycle stage (maturity). The first equation in table 2 shows that using 3 explanatory variables, dividends decision is a function of size, growth and profitability. Introducing the life cycle proxy to the equation made the firms maturity proxy as the only significant variable that explain the decision to pay dividends. It thus gives support to agency-based life cycle theory of dividend decision.

#### **5. Conclusion**

Using a sample of non-financial firms that consecutively listed in the Indonesia Stock Exchange from 1995 – 2006, it is found that the percentage of firms paying dividend decrease significantly. Further it is also identified that dividends paying firms on average have higher profitability, bigger size, less growth and are more mature firms.

The quantitative analysis shows that when the proxy of firm's maturity is

introduced in the regression equation, this proxy becomes the only explanatory variable that has positive significant impact to the decision to pay dividend.. It means that dividends are more likely to be paid by mature firms that have accumulated profitability throughout their life cycle. This firms are more self reliant in financing their assets. This kind of firms possibly has more FCF available for the shareholders. For this kind of firms, distribution of FCF dominates retention. They are more likely to pay dividends. This finding lends support to the agency –based life cycle theory.

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