

# Do We Need a Mandatory Dividend Regulation? The Case of the Indonesian Capital Market

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**Abstract:** This study examines the dividend life-cycle hypothesis and the propensity of non-financial firms listed on the Indonesia Stock Exchange (IDX) to pay dividends, in light of a recent idea by the IDX to regulate dividend payments. Using several proxies of the life cycle, the results consistently show that Indonesian listed firms follow the dividend life-cycle hypothesis. Our results recommend that if the authority insists on regulating dividend payments, the regulation should take into account the firms' life cycles. Firms should only be required to pay dividends when they reach a certain stage and/or meet defined characteristics, according to their stage or characteristics.

**Keywords:** dividend life cycle; dividend policy; earned/contributed capital; Indonesia Stock Exchange; propensity to pay dividends

**JEL classification:** D3, D32

## Introduction

Developing countries have characteristics which include having a transitional economy, high economic growth, and some play a bigger role in the world economy as emerging markets. One of their particular characteristics is that most of the emerging market countries have weaker rules, and their corporate governance practices vary widely from one firm to another (Black 2001). Consequently, this influences how firms behave with their strategic decision making, for instance in their dividend policy (Mitton 2004). A vast literature of studies on dividend policies in the developed countries is readily available, yet it is still one of the most puzzling subjects in corporate finance over the past fifty years. Meanwhile, there is less empirical evidence available from developing countries, taking into consideration that there might be significantly different practices and phenomena between the two. Besides the different practices of corporate governance and the macroeconomic environment, different legal constraints also make dividend policies vary widely among countries (La Porta et al. 2000; Goyal and Muckley 2013).

In their seminal paper, La Porta et al. (1998) argued that countries with a civil law origin tend to have lower investor protection and have higher barriers to the development of their capital markets. Such a situation implies a social cost, and thus it is necessary for civil law countries to find alternative ways to reduce this social cost (Martins and Novaes 2012). In fact, to deal with this situation, some civil law countries i.e. Brazil, Chile, Colombia, Venezuela and Greece, have adopted some alternative ways, for example by using a rule that mandates companies to pay divi-

dends. The low adoption of this rule is because other countries believe that mandatory dividend rules might limit companies' abilities and opportunities to invest and to grow further, and therefore there is a trade-off between costs and benefits, i.e. protecting minority shareholders' rights vs. firms' growth opportunities (Martins and Novaes 2012). Furthermore, recent findings show that dividend policies follow the life cycle (DeAngelo et al. 2006; Denis and Osobov 2008; Von Eije and Megginson 2008; Fatemi and Bildik 2012; and Fama and French 2001), which implies that if the regulator sets a mandatory dividend rule, it may harm the firms that are in the early life-cycle stage. However, the findings of Martins and Novaes (2012) indicate that this is not the case in Brazil, as the mandatory dividend rule does not significantly interfere with companies' investment plans. Based on this experience, other civil law countries might want to start regulating dividends and making them mandatory. Indonesia, for instance, has been pondering the idea of making such a rule since 2013. Indonesia is a developing country and the largest economy in Southeast Asia. Like many other developing countries with relatively weak corporate governance, the regulator has been concerned about corporate governance practices in Indonesia. The most recent case is about the dividend payments of firms listed on Indonesia's capital market, i.e. the Indonesia Stock Exchange (IDX).

This paper aims to contribute to the mandatory dividend policy debate, at the regulatory level in Indonesia's capital market. The IDX states that there are many firms that have not paid dividends although they report positive net incomes.<sup>1</sup> After 1997, only half of the listed firms paid a dividend. Despite the

<sup>1</sup> IDX targets dividend regulation to finish this year (*BEI Target Aturan Dividend Selesai Tahun ini*). Republika Online, 23<sup>rd</sup> of February 2013 (republika.co.id)

growing number of listed firms on the IDX, the percentage of firms that pay a dividend seems to remain the same. The IDX's authority finds this to be an unfavorable situation, especially for good corporate governance practices and ultimately for Indonesia's investment climate. They argue that paying dividends is one of the indicators of good corporate governance practice, and investors do not only want capital gains but also dividends. Therefore, in early 2013 the IDX proposed to enact a stricter regulation on the payment of dividends, that included: (1) The minimum frequency for paying dividends in a particular period of reported positive net income, (2) the minimum amount of net income to be distributed as dividends, and (3) the sanctions for non-compliance.<sup>2</sup> Despite lacking empirical evidence, the authority seems to insist on making such a regulation. Yet, implementing this regulation is not a clear-cut issue, and there are pro and contra arguments from the stakeholders.

This mandatory dividend plan has been facing a great deal of opposition. The two largest stakeholders in the capital market, the Indonesian Securities Company Association (Asosiasi Emiten Indonesia/AEI) and the Indonesia Corporate Secretary Association (ICSA) were not immediately on board with the idea of regulating dividend payments, but they finally agreed to consider the plan subject to the content.<sup>3</sup> However, as we are now at the beginning of 2016, the IDX has still not produced a finalized draft containing the technical and operational terms of the proposed regulation, for further review and dis-

ussion. This provides us with the opportunity to investigate the situation further. Before implementing the mandatory dividend, first we need to comprehend why firms do not pay dividends and understand the pros and cons of the mandatory dividend regulation.

From the corporate finance point of view, there are reasons why a mandatory dividend is necessary and why it also can be harmful for firms. Paying a dividend can reduce the agency conflicts, which means improving corporate governance while at the same time it may hamper firms in realizing their growth opportunities, as it reduces their internal capital (Martins and Novaes 2012).

Like many other emerging market countries in Asia, Indonesia has been experiencing high economic growth, with average GDP growth of 5.66 percent during the last ten-year period while the rest of the world was in an economic downturn between 2009 and 2012.<sup>4</sup> Indonesia has emerged from the 2008 financial crisis without any substantial damage, signaling recognition of its strong economic growth. Yet, Indonesia is also facing corporate governance problems, such as weak investor protection (La Porta et al. 2000; and La Porta et al. 1998), concentrated ownership (La Porta et al. 1999), pyramidal ownership (Faccio et al. 2001), family business entrenchment (Bennedsen et al. 2007; and Cucculelli and Micucci 2008) and the issue of massive corruption that might exacerbate the risk of expropriation, where the majority shareholders tend to maximize their benefit by diverting their firms' cash flows at the ex-

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<sup>2</sup> Indonesian Stock Exchange aims to finalize regulations on dividend payments this year (*BEI Target Aturan Dividen Selesai Tahun Ini*). Republika Online, 23<sup>rd</sup> of February 2013.

<sup>3</sup> Market participants responding to regulations on dividend payments (*Pelaku Pasar Merespons Aturan Pembagian Dividen*), Indonesia Finance Today, 19<sup>th</sup> of March 2012.

<sup>4</sup> The average GDP growth is computed using data of 2004-2014 (Source: World Bank database).

pense of the minority shareholders. These all suggest a vulnerability to high agency problems between the majority and minority shareholders. Data from 2014 shows that the corruption perception index ranked Indonesia 107<sup>th</sup> out of 174 countries.<sup>5</sup> Moreover, Indonesia adopts French civil law, which is associated with poor investor protection (La Porta et al. 1998). For the ownership structure problem, a report by BAPEPAM-LK (2011)<sup>6</sup> shows that the average public ownership from 2007 to 2011 was only 25 percent, indicating a concentrated ownership structure. In such an ownership structure, the controlling shareholder usually has power over the managers and the AGM to decide the dividend policy (Gugler and Yurtoglu 2003). Some empirical findings for developing countries show that the majority owners or insiders do indeed influence the dividend policies (Fairchild et al. 2014; Hamill and Al-Shattarat 2012; and Mitton 2004). Mahadwarta and Ismiyanti (2008); and Carney and Hamilton-Heart (2015) show that the majority ownership on the IDX is dominated by corporate ownerships that are related to the founding family, which may exacerbate the expropriation risk. The current situation implies that Indonesia has promising growth opportunities, while investors may perceive the expropriation risk is still relatively high. Will mandatory dividends fix the governance issue or impede the realization of high growth opportunities?

From the agency theory perspective, not paying dividends might suggest an expropriation by the majority shareholder, i.e. paving the way to divert the firm's free cash flow for their private benefit (Faccio et al. 2001; and

La Porta et al. 2000). In this instance, not paying dividends alleviates the agency problems. The expropriation risk is even higher, particularly in countries with weak investor protection, since investors do not have enough power to disgorge the free cash flow from firms (La Porta et al. 2000). Thus, paying dividends could be the solution to this agency problem as it reduces the free cash flow at the insiders' disposal for their private benefit (Jensen and Meckling 1976). To some extent, paying dividends is signaling to the minority shareholders that the insiders do not expropriate them. In other words, paying dividends is a way to protect the cash flow rights of the minority shareholders. One might also argue that dividends are shareholders' rights, and paying dividends might help to keep long-term investors and reduce the speculators in the stock market. In such a case, mandatory dividends could be the solution (Martins and Novaes 2012).

One can also argue that in an emerging market with a high economic growth rate like Indonesia, forcing firms to pay dividends might distort their investment plans, especially when firms face high growth opportunities. The high growth rate of the country indicates that the growth rates of the firms, in general, are also high. In this case, retaining earnings to finance abundant investment opportunities might best serve the interest of all the shareholders. Firms possibly have different circumstances, depending on their maturity and stage in the life cycle, e.g. the need for more capital for business expansion in the earlier phases of the life cycle, while in the later stages firms have abundant free cash flows as there are fewer investment opportu-

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<sup>5</sup> Source: transparency.org

<sup>6</sup> BAPEPAM-LK is the Capital Market and Non-Bank Financial Institution Supervisory Agency under the Ministry of Finance Republic of Indonesia.

nities (DeAngelo et al. 2006). Finally, one cannot expect all companies with positive earnings to pay dividends, as in the proposed regulation, because this may impede the firms from realizing their growth opportunities, and thus harm the shareholders. The later argument might explain why many listed firms in Indonesia have not paid dividends. Clearly, there are two opposing views that do not make implementing mandatory dividends a clear-cut issue.

Although agency problems and low investor protection can be the strongest arguments for a mandatory dividend rule, we need to ensure that such a regulation will not hinder the optimal growth of the firms. Designing dividend regulations will prolong the endless debate between the stakeholders, as the purpose of the regulation itself is not aimed at an optimal dividend policy that maximizes the firms' values, but to ensure the minority shareholders' protection. Meanwhile, there is less empirical evidence available from developing countries, taking into consideration that there might be a significant difference in the practices of corporate governance and the dividend policy decision (Mitton 2004). Beside the different practices of corporate governance, the different legal constraints also make dividend policies vary widely among countries (La Porta et al. 2000; and Goyal and Muckley 2013). Therefore, this study uniquely investigates the propensity to pay dividends and its determinant on listed firms in Indonesia to seek an empirical explanation why many firms on the IDX have not paid dividends, and to assess if we need to apply a mandatory dividend regulation, and if the authority wants to apply the rule, what aspects must be considered in the regulation.

## Dividend Life-Cycle Hypothesis

The dividend life-cycle hypothesis might shed light on this conundrum. The declining trend of dividend payments is not exclusive to Indonesia alone. There has been a declining trend of dividend payments in the US as well as in other countries. This trend was initially shown by Fama and French (2001) for firms in the United States. They found that dividend payers had reduced by 46 percent between 1978 and 1999 due to various reasons, such as the firms are not, by nature, payers of dividends, firms' negative earnings, small sized, and large investment needs. After a comprehensive look at the findings of Fama and French (2001), Grullon et al. (2002) and DeAngelo et al. (2004) came to the conclusion that these findings lead to an explanation of the life cycle. They argue that in the early stage of their life cycle, firms' investment opportunities exceed their internally generated funds, i.e. retained earnings, and they therefore either do not pay, or pay less dividends. While, at a more mature stage of the life cycle, firms' internal funds exceed their investment opportunities, and firms pay more dividends to avoid wasting the cash flow in non-maximizing value investments. There is also worldwide empirical evidence supporting this dividend life-cycle hypothesis. Denis and Osobov (2008) showed the evidence for five advanced economy countries, Von Eije and Megginson (2008) provided the evidence for 15 EU countries, Brockman and Unlu (2011) and Fatemi and Bildik (2012) found similar evidence for countries around the world. More recently, Fairchild et al. (2014) also found evidence that supports the dividend life-cycle hypothesis in Thailand.

Lease et al. (2000) illustrate a more complex dividend life-cycle scenario by considering several market frictions that evolve throughout the life cycle: The severity of the agency problem, information asymmetry levels, shareholders' equity tax, the flotation costs of issuing new equity, and the transaction costs, at each stage. A firm designs its optimum dividend policy, and adjusts it throughout its life cycle, depending on each condition it faces (the market frictions) to maximize its value. Lease et al. (2000) divided the life cycle into five stages: The first stage is start-up firms, followed by going public (IPO), rapid growth, maturity, and finally the declining stage. Figure 2 shows the dividend policy's evolution through a firm's life cycle.

At the very beginning (stage) of the firm (start-up), the investment opportunities are very promising, and thus firms pursue a high growth strategy. Consequently, their capital requirements are enormous. Meanwhile, as a new small business, floatation costs and transaction costs are still very high. Hence, issuing new stocks will be very costly. Shareholders' tax during this stage is also high, and thus paying dividends would make the owners pay even higher taxes. In such conditions, financing the investment needs using internally generated capital (retained earnings) is the best option to optimize firm value. At this stage, the asymmetric information between insiders and outsiders is extremely high, but the agency costs are almost nonexistent as the managers and the owners are still the same and the free cash flows are most likely negative. Thus, again, dividends are also not necessary as there is no need to reduce the agency costs through dividend payments. Whereas in the more mature stages, investment opportunities are declining and the agency conflict is getting higher as the operating cash flow is exceeding that required for investment. At the

same time, shareholders' equity taxes are declining through institutional and corporate ownership, while floatation costs and transaction costs are also getting lower. In such a situation, firms will pay more dividends to reduce the agency conflicts, thus maximizing the value of the firm.

The explanation above implies that the dividend life-cycle hypothesis may also give some hints as to when a firm is expropriating its minority shareholders through its dividend policy and when it is not. For instance, when a firm reaches the mature stage, where its cash flows are relatively abundant due to its increasing profitability and low investment opportunities, it should have generous dividend payouts to maximize the firm value. Thus, when a mature firm does not pay dividends, *ceteris paribus*, one might suspect expropriation. On the other hand, it is normal for an early stage firm to have no or very low dividend payouts, as in this stage it tends to be small, less profitable, and have abundant investment opportunities. At this stage, a generous dividend policy might indicate tunneling. The life-cycle framework shows how firms design their optimal dividend policy accordingly; based on each situation they face during each life-cycle stage.

The dividend life-cycle hypothesis provides a normative guideline for optimal dividend policies that maximize the value of the firms. If the declining dividends by the IDX's firms are mostly due to the firms' characteristics, since they are more likely to be in the earlier stages of their life-cycle, forcing firms to pay dividends will impede their growth opportunities, which is ultimately harmful for their value creation. To assess if mandatory dividends are necessary and what aspects should be considered in the dividend regulation, we test if firms listed on the IDX set their dividend policy based on their life cycle.

## Data and Methods

### *Data and Sample*

We use the year 1995 as a starting point for our observations, taking advantage of the availability of more accurate and reliable data, due to the automated system, as well as the fact that it was the year the capital market system was legally established. Moreover, by doing so, we were also able to examine the impact of the Asian crisis in 1997-1998 and the global financial crisis in 2008-2009.

We use information from the firms' annual reports to find their accounting and ownership data, the Bloomberg database for market data, and the IDX's summary of company performance for dividend information. Following Fama and French (2001), we exclude highly regulated industries, such as the financial and utility industries, and we also exclude firms with negative equity. The number of firms that meet our requirements is different for each year, due to newly listed firms. After excluding the financial and utility industries, firms with negative equity, those with incomplete financial statement data, and those with extreme values, the final number of our sample for 1995 is 132 industrial firms and this number had become 309 by 2011. Our final sample is 2,600 firm-years.

### *Variable Definition*

#### *Dependent variables*

The aim of this study is to provide empirical evidence to support the regulation's formulation. Therefore, first we must understand why many firms listed on the IDX do not pay dividends or in other words, why the firms' propensity to pay dividends is declining. Following Fama and French (2001), we measure the propensity to pay dividends by

using a dummy variable, taking the value of one if the firm pays dividends and zero otherwise. We carefully trace the dividend information from the firms' summary reports on the Indonesia Stock Exchange's database, which report the precise dividend payments for each period, and assign the dummy variable accordingly.

#### *Independent variables: Life-cycle proxies*

Finding a life-cycle proxy that accommodates various market imperfections as in the model of Lease et al. (2000) is difficult and tricky. The existing literature provided some measures of the life cycle, but the results are inconsistent. First, we discuss the life-cycle measures in the literature.

DeAngelo et al. (2006) argued that the level of contributed or earned equity (retained earnings to total equity –  $RE/TE$ ) shows the extent to which a firm is self-financing or reliant on external capital. In other words, more mature firms will have more retained earnings and they will be more self-financing. In such situations, their ability to generate cash overtakes their ability to fund profitable investment opportunities, while their investment opportunities are declining. Thus, it makes them candidates for paying dividends. Denis and Osobov (2008) and Brockman and Unlu (2011) show that the firm's life-cycle measure of DeAngelo et al. (2006) has consistent explanatory powers to explain the dividend policy in various countries. One might suspect that  $RE/TE$ , to some degree, reflects profitability because a firm cannot have high retained earnings with no substantial profitability in the previous period. However, DeAngelo et al. (2006) argue that two firms with identical historical earnings can have different  $RE/TE$  because the firm with the lower  $RE/TE$  sells more equity to fund its investment program, which indicates an early

infusion stage of its life cycle, rather than a later stage.<sup>7</sup>

Von Eije and Megginson (2008), using a sample of European firms, show that a firm's age is a better proxy for the firm's life cycle than earned equity. They do not find that  $RE/TE$  is able to explain firms' propensities to pay dividends. The progress of the firms' life-cycle stage is a function of time. The longer the firm continues to operate, the more mature it will be. Therefore, a firm's age also can measure where the firm may be at in its life cycle. However, it is difficult to assign a company to the mature or declining phase based merely on a single proxy, and it cannot tell us in what phase of its life cycle the firm is at. Moreover, unlike  $RE/TE$ , age might be industry sensitive. Two firms with the same age but from different industries might be at different stages of maturity.

Finally, we consider the agency conflict in the life-cycle measure. Following the life-cycle model, we argue that more mature firms will have a higher free cash flow as they are more profitable and have less investment opportunities. Thus, firms with a high level of free cash flow are more mature than firms with a low level of free cash flow, regardless of the industry they are in. When free cash flow is high the agency problems between the majority and the minority are more severe because a high free cash flow would become the source of the agency conflict (Jensen 1986). For this reason, we use the amount of free cash flow to capture the life-cycle stage that incorporates the extent of the agency conflict's severity.

Each of the three measures discussed previously catches a different aspect of the

firms' maturity, which may be complementary to each other. Nevertheless, although the correlations among them are significant at the 5 percent level, the coefficients of the correlation itself are small (see the correlation matrix in Table A1). This indicates that each measure captures a different aspect of the firms' life cycles. Therefore, we combine these various aspects to capture the firms' maturity by composing a life-cycle index (*L-C Index*). Another advantage of composing this life-cycle index is that we would have a simple index whose value could show the relative stage of development in the life cycle and more appropriately represent the firms' relative maturity level in the Indonesian market. We discuss the construction of the index in the following paragraph.

First, we divide our sample, from 1995 to 2011, into quartiles based on earned equity, firm's age, and free cash flow. We divide the firms into four groups, which represent the four stages of the dividend life-cycle framework of Lease et al. (2000), i.e. starting from the IPO to the declining stage. We measure earned equity as retained earnings to equity ( $RE/TE$ ), age as how many years the firm has been established (*Age*), and free cash flow as the net operating cash flow minus capital expenditure divided by total assets ( $FCF/TA$ ). Since three of them have the same direction, the higher the value, the more mature a firm is, we assign a value equal to one for firms that are in the first quartile, two for the second quartile, and so on. Then, we sum these three variables and divide by three, resulting in an index that has value ranges from 1 to 4, with the higher value indicating firms at a more mature stage of their life cycle on the IDX.

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<sup>7</sup> The correlation between  $RE/TE$  and ROA in Table A1 (appendix) does not show a strong correlation (0.13).



Although we have combined the existing measures of the life cycle from the literature to have a better one, as we explained earlier, the index comes with several limitations. The index does not take into account the industry difference, although we will control for the industry effect on the estimation. It does not address several market imperfections such as tax and firms' financial constraints directly, and it depends heavily on the assumption of Lease et al.'s model. The index captures the severity of agency conflicts only through the free cash flows, but it is possibly also influenced by the ownership structure and other internal governance mechanisms of the firms, although we will also control for ownership structure as the internal governance mechanism in our estimations.

### **Control variables**

We also include variables influencing dividend policies from the literature in our model specification. First, concerning the concentrated ownership structure of Indonesian firms, where the controlling shareholder has the power to lead the Annual General Meeting (AGM) of shareholders and decide the firm's strategic decisions, including the dividend policy, we use the voting rights of the largest shareholder to control its effect (*Largest SH*). Following Fama and French (2001), we control for the three firm characteristics i.e. profitability, investment opportunities, and size. We used the return on asset (*ROA*), market value of equity to its book value (*M/B*), and market capitalization of the firm over total market capitalization (*Size*) as the measures of profitability, investment opportunities, and firm size respectively. We expect profitability and size to have a positive relationship with the propensity to pay dividends, and be negative for investment opportunities. The literature shows that debt

also determines dividend policy. Jensen (1986) suggests that the use of debt in capital structures would reduce the agency problem due to creditor monitoring, so it will reduce the need to distribute the free cash flow through dividend payments. This argument raises the issue of endogeneity, as financial leverage can be a substitute for the dividend (Jensen et al. 1992). However, Fidrmuc and Jacob (2010) provided a compelling argument that both were not simultaneously determined by it, as firms have less flexibility to choose their capital structure relative to their payout policies. To minimize this issue, we used the lag of *Debt/TA* in the estimation. Another important determinant is cash holdings. DeAngelo et al. (2006) argue that larger cash holdings indicate the build-up of an excess of funds, which are suitable for distribution. Following their method, we measured the cash holdings as cash divided by total assets (*Cash/TA*). Recent findings show that competition has influenced dividend policy through the disciplining mechanism coming from the competition (Grullon and Michaely 2012). Following Grullon and Michaely (2012) we use industry competition to capture the industry competition, as measured by the Herfindahl-Hirschman index of firms' assets in an industry (*HHI Inds.*). We use the year fixed effect to control the business cycle as well as to control the impact of the economic crises in 1998 and 2008 on the propensity to pay dividends. If the declining propensity to pay dividend happens, we expect that all the dummy years will have a significant negative coefficient. We expect the impact of the declining propensity to pay dividends to be greater during the crisis period (2007 and 2008). Finally, we control for the unobservable industry heterogeneity by including industry fixed effects. The descriptive statistics of the variables are presented in Table 1.

Table 1. Descriptive Statistics

	M	Mean	sd	Min.	p25	p50	p75	Max
RE/TE	2,600	-0.264	2.126	-23.446	-0.079	0.211	0.486	0.947
Age	2,600	25.963	15.768	1	16	24	31	109
FCF/TA	2,600	0.002	0.111	-0.674	-0.039	0	0.049	0.756
LC-Index	2,600	2.557	0.645	1	2	2.5	3	4
ROA	2,600	0.035	0.118	-1.262	0.003	0.031	0.074	1.49
M/B	2,600	1.768	2.446	0.125	0.571	1.018	1.992	31.209
Cash/TA	2,600	0.115	0.114	0	0.026	0.076	0.167	0.945
Size (%)	2,600	0.179	0.62	0	0.004	0.024	0.102	9.848
D/TA	2,600	0.289	0.216	0	0.097	0.27	0.455	0.809
Largest SH	2,600	0.481	0.251	0.001	0.31	0.501	0.638	0.993
Corporate	2,600	0.504	0.5	0	0	1	1	1
State	2,600	0.03	0.17	0	0	0	0	1
Insider	2,600	0.012	0.109	0	0	0	0	1
Individual	2,600	0.009	0.097	0	0	0	0	1

DDIV = dummy variable equals one if firm pays dividend and zero otherwise; Div/TA = dividends related to the period to total assets; RE/TE = retained earnings to total equity RE/TE = retained earnings to total equity; Age = firms' age; FCF/TA = free cash flow to total assets; L-C Index = life-cycle index; ROA = return on assets; M/B = market value of equity to its book value; Size = firm market capitalization to total market capitalization; Debt/TA = long term debt to total assets; Cash/TA = cash holding to total assets; Largest SH = the percentage of shares of the largest shareholder; Corporate, State, Insider, and Individual are dummy variables equal one if the controlling shareholder (ownership >50%) is corporate, state, insider, or individual respectively.

## Empirical Results

### *Univariate Analysis*

#### *Dividend payment trend*

First, we display the dividend paying firms' pattern to show the declining trend of dividend payments. Figure 1 presents the dividend paying firms' trend on the Indonesia Stock Exchange for non-financial and non-utility firms from 1995 to 2011. The number of dividend payers shows a sharp decline in the years 1997 and 1998, which is possibly due to the financial crisis. It rebounds in 1999,

and since then it has had an increasing trend up to 2011, following the growing number of firms listed on the IDX. We can see from Figure 1 that the gap between the number of dividend payers and the number of firms is widening over the observation period. It indicates that the growth in the number of firms that pay a dividend is not as high as the growth in the number of firms. The line that shows the percentage of payers (*% payers*) gives us another clue. Despite the vast and growing number of firms, the percentage of dividend paying firms remains low and is noticeably stagnant after a sharp decline in

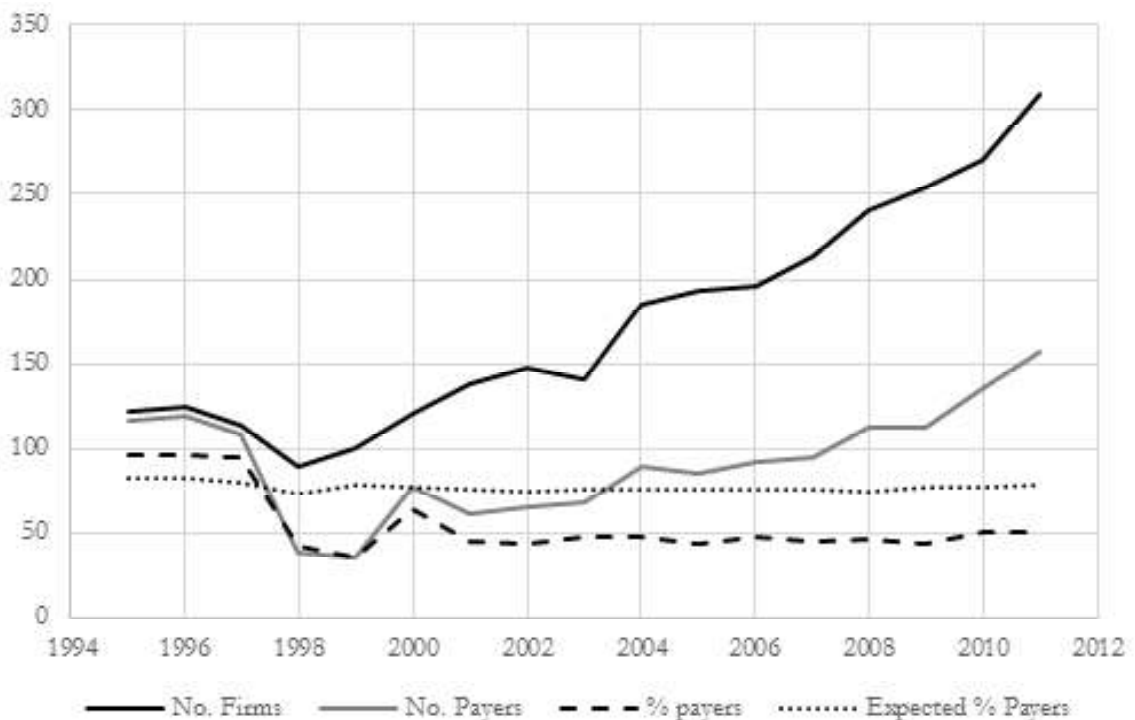
1998. We also compute the expected probability of paying a dividend during the observation period (*Expected % payers*). Following Fama and French (2001), we predict the probability of paying a dividend by using a logistic regression as a function of the firms' fundamental characteristics  $DDIV = f(ROA, M/B, Size)$ . We use a base period of 1995-1997<sup>8</sup> to estimate the coefficients for each firm's characteristics. From the estimation, we use the estimated coefficient to get the expected percentage of payers each year from 1998 to 2012. The result, as in Figure 2, shows that it has a declining trend, although the slope is small. This indicates the declining propensity to pay a dividend. Whereas, the gap between

the expected payers and the real percentage of firms that pay dividends means that the firms' characteristics are slowly changing. Using the dividend life-cycle framework, we propose a testable hypothesis that not many newly listed firms pay dividends while possibly not many older firms start paying dividends. In other words, this result provides the first indication that the firms' dividend policies on the IDX follow the dividend life-cycle hypothesis. In addition, Figure 2 adds another perspective to the phenomenon.

In Figure 2, there is an increasing trend of cash dividend amounts over the observation period. Yet, as Figure 1 suggests, the percentage of payers seems to have no sig-

Figure 1. **Dividend Paying Firms on the Indonesia Stock Exchange (IDX) 1995-2011**

Figure 1 describes the number of dividend payers in the period from 1995 to 2011, compared to the total number of firms on the Indonesia Stock Exchange (IDX). We excluded the financial and utility industries, and firms with negative equity.

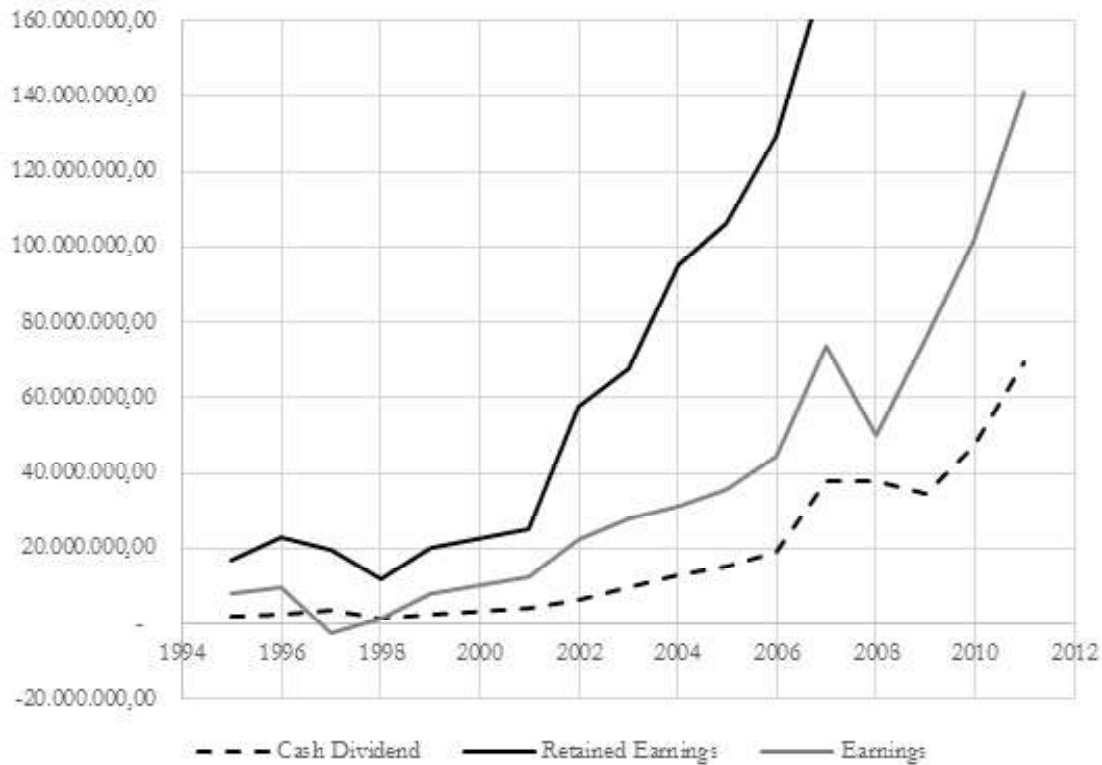


Source: Authors computation

<sup>8</sup> We do not include the years 1998 and 1999 because of the Asian crisis which influenced the number of dividend payers as displayed in Figure 1.

Figure 2. Cash Dividend and Earnings for IDX's Firms 1995-2011

Figure 2 depicts the amount of the cash dividend and the earnings of firms listed on the Indonesia Stock Exchange (IDX) for the period from 1995 to 2011.



*Source:* Authors computation.

nificant growth, and may even be stagnant. It may also suggest that there is a concentration of dividend payments. To examine this dividend payment concentration, following Von Eije and Megginson (2008), we calculate the Herfindahl-Hirschman Index (HHI) for the years 1995 to 2011. We present the result in Table 2. We sort a cash dividend payment by size, which is the firm's market capitalization to the overall market. Then we divide it into deciles and calculate the percentage of the cash dividend amount to the total cash dividend payment for the year on each decile to obtain the HHI. Table 2 shows that dividend payments are concentrated in the largest firms group (10<sup>th</sup> decile), with the highest concentration in year 2004. This re-

sult confirms that the cash dividend payments have been concentrated since 1995, and they were getting more concentrated until they reached a peak in 2004. After 2004, the concentration gets lower but the average HHI is still higher than the HHI before the year 2000. However, we find something puzzling in Table 2. The firms in the second decile always became the second group whose dividend concentration is the highest while they were among the smallest firms on the IDX. We argue that size alone cannot be used as an indicator of firms' maturity, and therefore we need a measurement that better catches a more comprehensive aspect of the firms' life cycle. However, it is clear that Table 2 shows a consistent result regarding the dividend

Table 2. Dividend Concentration (HHI)

Decile	Year								
	1995	1996	1997	1998	1999	2000	2001	2002	2003
1	4.28	3.43	2.74	2.59	5.54	2.03	1.13	1.77	1.18
2	11.57	12.75	10.84	0.56	0.34	2.36	8.00	5.54	5.23
3	1.12	1.06	0.85	1.46	0.85	0.26	0.69	0.17	0.06
4	2.54	2.28	1.80	1.07	2.57	0.64	0.89	0.60	0.35
5	2.26	2.55	2.36	2.46	3.88	1.65	2.18	0.84	0.50
6	2.85	3.94	5.05	1.64	0.96	1.23	4.37	0.98	1.59
7	5.38	5.21	3.98	5.92	0.28	5.80	1.15	2.73	1.78
8	8.40	8.94	1.62	5.22	14.52	3.15	7.55	4.72	1.29
9	13.26	12.47	12.37	13.74	3.88	2.09	4.44	6.93	5.47
10	48.33	47.36	58.39	65.10	67.19	80.52	68.83	75.19	82.55
<b>HHI</b>	<b>0.28</b>	<b>0.27</b>	<b>0.37</b>	<b>0.45</b>	<b>0.48</b>	<b>0.65</b>	<b>0.49</b>	<b>0.58</b>	<b>0.69</b>

Decile	Year								
	2004	2005	2006	2007	2008	2009	2010	2011	Mean
1	1.31	1.78	1.52	0.85	1.59	1.49	1.32	0.93	2.09
2	4.87	10.61	8.28	42.19	10.95	15.48	17.15	11.57	10.49
3	0.06	0.14	0.12	0.10	0.17	0.36	0.25	0.19	0.47
4	0.32	0.31	0.06	0.11	0.08	0.08	0.12	0.26	0.83
5	0.35	0.19	0.33	0.14	0.93	0.43	0.33	0.28	1.27
6	1.02	2.13	0.55	0.75	0.69	0.76	0.69	0.68	1.76
7	2.23	0.92	1.57	1.15	1.61	2.48	1.41	1.32	2.64
8	1.85	2.76	2.90	1.13	2.32	3.26	4.73	7.96	4.84
9	3.71	4.40	2.94	1.73	4.69	5.50	9.39	8.52	6.80
10	84.27	76.75	81.71	51.85	76.84	70.15	64.60	68.27	68.70
<b>HHI</b>	<b>0.72</b>	<b>0.60</b>	<b>0.68</b>	<b>0.45</b>	<b>0.61</b>	<b>0.52</b>	<b>0.46</b>	<b>0.49</b>	

Authors sort cash dividend payment by size, which is the percentile of the firms' market capitalization to the overall market. Then we divided it into decile and calculated the percentage of the cash dividend amount to the total cash dividend payment of the year on each decile to obtain the HHI.

concentration. It may indicate that the dividend life-cycle hypothesis might be able to explain the dividend behavior on the IDX and why many firms do not pay dividends.

#### *Life-cycle measures and propensity to pay dividends*

Next, we analyze the relationship between life-cycle measures and the propensity

to pay dividends. We sort  $RE/TE$ ,  $FCF/TA$ , and  $Age$  by the nine ranges of the life-cycle index and report the median of each range. The result is reported in Table 3 Panel A.  $RE/TE$ ,  $Age$ , and  $FCF/TA$  all indicate a strong positive relationship with the life-cycle index. This result confirms that three of the life-cycle measures have the same direction. However, for the largest shareholder ownership

Table 3. Life-cycle Proxies and the Proportion of Firms Paying a Dividend

<b>Panel A:</b>							
Life-Cycle Index	1-1.25	1.25-1.75	1.75-2	2-2.25	2.25-2.5	2.5-3	3-3.25
Percentage of payers	15.48	31.8	48.38	39.67	41.56	50.82	53.26
RE/TE	-0.599	0.009	0.117	0.01	0.08	0.232	0.298
FCF/TA	-0.074	-0.054	-0.05	-0.032	0	0.016	0.017
Age	4	4	7	9.5	8	11	14
Largest SH	50	51	46.44	38.5	43.15	46.58	47.49
No. of firms	101	412	401	368	474	549	552
<b>Panel B: RE/TE</b>							
	<p10	p10-p20	p20-p30	p30-p40	p40-p50	p50p-60	p60-p70
Percentage of payers	11.94	16.43	23.48	25.91	50.83	66.49	72.78
Percentage of samples	10.51	10.54	10.57	10.48	10.57	10.51	10.51
<b>Panel C: FCF/TA</b>							
Percentage of payers	51.78	47.95	41.64	34.79	55.62	49.86	49
Percentage of samples	9.89	9.89	9.89	9.89	9.89	9.89	9.89
<b>Panel D: Age</b>							
Percentage of payers	38.22	46.2	46	47.68	48.49	51.15	50.93
Percentage of samples	9.37	9.82	10.38	10.95	10.89	11.67	11.25

In Panel A we split the 15 years of the sample into quartiles for each of the variables, earned capital to total equity (RE/TE), free cash flow (FCF/TA), and Age. Then we assigned a value equal to 1 for the first quartile, 2 for the second, and so on for each of the variables, and we sum these values of the three variables resulting in an index that has values ranged from 1 to 4. Then we sort RE/TE, FCF/TA, Age, and the largest shareholder by the 9 range life-cycle index and report the median on each range.

In Panel B, C, and D we sorted the percentage of dividend payers by the decile of RE/TE, FCF/TA, and Age respectively.

Table 4. Dividend Payers vs. Non-dividend Payers

	Payers (n = 1,414)	Non-Payers (n = 1,236)	Diff.	t
<i>L-C Index</i>	2.64	2.35	0.29	13.67***
<i>RE/TE</i>	0.21	-1.01	1.217	16.05***
<i>ROA</i>	0.07	0.01	0.055	7.37***
<i>Age</i>	27.99	23.73	4.265	7.99***
<i>FCF/TA</i>	0.01	-0.01	0.023	5.87***
<i>M/B</i>	1.99	1.84	0.156	1.64
<i>Size (%)</i>	0.30	0.08	0.215	9.33***
<i>DTA</i>	26.63	30.28	-3.648	-5.08***
<i>Cash/TA</i>	0.15	0.09	0.06	15.20***
<i>Largest SH</i>	0.48	0.43	0.044	5.31***

Mean comparison of dividend payers and non-dividend payers. We divided our sample into dividend payers and non-payers and calculated the mean value of each firm's characteristic variable for both dividend payers and non-payers to obtain the numbers in the Table 4.

and the life-cycle index, we can see a ‘U-shape’ pattern. The life-cycle index also shows a positive relationship with the percentage of dividend payers. Next, we sort the percentage of dividend payers by each of these variables in deciles as reported in Table 3 Panel B, C, and D.  $RE/TE$  and  $Age$  show a positive relationship with the percentage of dividend payers, as suggested by the dividend life-cycle hypothesis. Meanwhile,  $FCF/TA$  shows a non-linear pattern towards the percentage of dividend payers although it still has a positive trend. To sum up our findings in Table 3, the proportion of firms paying dividends is higher in more mature firms, and it shows a positive linear pattern. However, it also reveals that there are some firms in the more mature life stage that do not pay dividends. Following the life-cycle theory, firms that do not pay dividends at the end of the life-cycle stage could be suspected of expropriation while those which are at the beginning of their life cycle, but generously pay dividends, could be thought to be dividend tunneling. We will discuss this issue further in the discussion section.

Next, to see if the propensity to pay dividends is different from one firm to another, depending on each firm’s characteristics, we divided the sample into two subsamples, i.e. dividend paying firms and non-dividend paying firms. In Table 4, the dividend paying firms have significantly higher  $RE/TE$ ,  $ROA$ ,  $Size$ ,  $FCF/TA$ ,  $Cash/TA$  and  $Largest SH$ , but lower  $Debt/TA$  than the non-dividend paying firms. The dividend paying firms are also older than the non-dividend paying ones. We find that  $M/B$  does not have a significant difference for both groups.<sup>9</sup>

Again, the result in Table 4 indicates that Indonesian listed firms’ dividend policies follow the firms’ life cycles. The results from Tables 3 and 4 may be influenced by individual and industry heterogeneity correlated with the life-cycle measures. In the next section, we will control the heterogeneity in the regression analyses.

## Regression Analysis

### Dividend life-cycle hypothesis test

As our dependent variable is a categorical variable, which is a dummy variable taking the value of one if the firm paid a dividend and zero otherwise, we follow Von Eije and Megginson (2008) and test the life-cycle hypothesis using a panel probit regression with random effects. The standard error calculation is adjusted for the clustering of firms. Table 5 presents the main results that indicate the impact of life-cycle measures on the propensity to pay dividends. First we estimate each of our life-cycle measures ( $RE/TA$ ,  $Log Age$ ,  $FCF/TA$ , and  $LC-index$ ) on the dummy dividend payment ( $DDIV$ ) separately (Specifications 1 – 3). The results show that  $RE/TE$  and  $Age$  have a positive coefficient and significance at the five percent level. In Specification 3, we have a positive coefficient for  $FCF/TA$ , but the coefficient is not significant. In Specification 4, we include the three life-cycle measures in the estimation, and all of them have a positive and significant coefficient. Finally, we estimate our life-cycle index ( $L-C Index$ ) in Specification 5. The result shows that the  $L-C Index$  has a significant positive coefficient as well. These findings suggest that the propensity of firms listed on

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<sup>9</sup> Alternatively, we also used sales growth rates and asset growth rates as growth opportunities (investment opportunities). We find there were no significant differences between dividend payers and non-dividend payers from both variables.

Table 5. Baseline Regression: Propensity to Pay a Dividend and the Firm's Life Cycle

DDIV	(1)	(2)	(3)	(4)	(5)
RE/TE	0.171** (2.29)			0.178** (2.35)	
Log Age		0.0335** (2.12)		0.0353** (2.36)	
FCF/TA			0.749 (1.63)	0.741* (1.66)	
L-C Index					0.217** (2.34)
ROA	2.372*** (3.37)	2.211*** (3.35)	2.081*** (3.17)	1.959*** (2.99)	2.187*** (3.26)
M/B	0.0756*** (2.73)	0.0445* (1.73)	0.0402 (1.55)	0.0461* (1.83)	0.0877*** (3.05)
Cash/TA	2.832*** (3.70)	3.042*** (3.95)	2.947*** (3.79)	3.082*** (4.02)	2.733*** (3.52)
Size	44.88** (2.17)	47.44** (2.31)	53.14** (2.26)	55.78** (2.41)	40.84** (2.19)
Debt/TA	-0.0170*** (-4.70)	-0.0199*** (-5.14)	-0.0192*** (-5.02)	-0.0192*** (-5.05)	-0.0175*** (-4.85)
Largest SH	0.390* (1.68)	0.339 (1.31)	0.340 (1.31)	0.336 (1.31)	0.405* (1.76)
HHI Inds.	-1.775** (-2.11)	-1.642* (-1.85)	-1.759* (-1.94)	-1.698* (-1.91)	-1.854** (-2.17)
Constant	4.119*** (5.94)	2.657*** (3.24)	4.558*** (6.21)	3.891*** (5.23)	2.359*** (3.02)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
AIC	2184.6	2211.1	2220.4	2219.5	2163.0
BIC	2436.4	2463.2	2472.5	2471.6	2426.5
rho	0.594	0.614	0.635	0.615	0.564
No. of Groups	309	309	309	309	309
N	2,600	2,600	2,600	2,600	2,600

z statistic in parentheses. \* p < 10%, \*\*p < 5%, \*\*\*p < 1%

Dependent variable is DDIV = dummy variable equals one if the firm pays a dividend and zero otherwise. RE/TE = retained earnings to total equity; Log Age = natural logarithm of the firm's age; FCF/TA = free cash flow to total assets; L-C Index = life-cycle index; ROA = return on assets; M/B = market value of equity to its book value; Size = firm's market capitalization to total market capitalization; D/TA = long term debt to total assets; Cash/TA = cash holdings to total assets; Largest SH = the percentage of shares of the largest shareholder; HHI Inds.=HHI of total assets industry k. Standard error is adjusted for clustering of firms.



the IDX to pay dividends tends to follow their life cycle. The more mature the firm is, the higher the propensity to pay. Next, we used the index for the new analyses.

Following DeAngelo et al. (2006), we also consider the sticky dividend phenomena by introducing the lag dummy dividend.<sup>10</sup> We find that all life-cycle measures consistently keep the significance and the sign. This also means that the lagged dependent variable does not take all of the effects of the other variables.

The findings discussed above are also supported by the positive and significant effects of *ROA* and *Size*, indicating that the more profitable and bigger sized firms, whose characteristics belong to more mature firms, have a higher propensity to pay dividends. However, investment opportunity, measured by *M/B*, has the opposite sign from what we expected. Instead of a negative relationship, we find a positive relationship between *M/B* and the propensity to pay dividends. It may suggest that they also use dividends as a signal to the market, in line with the signaling hypothesis. However, from the five specifications, only two had strongly significant coefficients (p-value less than 0.05). This finding of *M/B* is in line with the finding of Denis and Osobov (2008) for Germany, France, and Japan, while at the same time they found their empirical findings also supported the dividend life-cycle hypothesis. As we expected, *Debt/TA* has a negative and significant effect on the probability to pay dividends, and it is consistent for all the specifications. This suggests that the use of debt lessens the probability of firms' paying dividends. We find *Cash/TA* has a positive and significant relationship with the probability to pay dividends, supporting

the finding of DeAngelo et al. (2006), that larger cash holdings indicate a build-up of excess funds, which are suitable for distribution. Another possible explanation is that when a firm is in the high growth stage, it will shift its cash into operating assets.

Different industries might influence the dividend policies, due to the industries' characteristics. The results in Tables 5 and 6 show a consistent result of variable *HHI Indus*. We can conclude that industry competition has a positive influence on firms' propensity to pay dividends, supporting the dividend outcome model of Grullon and Michaely (2012), which demonstrated that dividend policy is also an outcome of external disciplinary mechanisms. We also test if each life-cycle measures' effect on the propensity to pay depends on industry characteristics. We interact each of the life-cycle measures with the industry competition variable, and we do not find such dependency. Besides controlling for industry competition, which may change throughout the observation period (e.g. due to new firms entering the market), we also use the industry dummy to control the industry fixed effect in all the specifications. To see if there are any differences among industries, we compute the marginal effect of the dummy industry coefficients from the estimation of Specification 5. The result suggests that the propensity to pay dividends is different from one industry to another. We find the industries that have the biggest negative and significant coefficients are the software & services industries and the technology and hardware industries. This suggests that firms in the software and technology related industries have less probability of paying dividends than firms in other industries have, because

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<sup>10</sup> See Lintner (1956) for the sticky dividend phenomena. Due to limited space, we do not report the results but they are available on request.

these industries need a lot of investment in research and development, and always face abundant investment opportunities and product innovations. This is similar to the finding of Denis and Osobov (2008) for US and Canadian samples. Whereas the industries that have the highest coefficients are the household & personal products industries, which indicates that firms in these industries have a greater probability of paying a dividend.

Regarding year effects, we use 1995 as the reference base for all of the estimations. Confirming the declining propensity to pay dividends, all the estimations show that each dummy year always has a negative and significant coefficient.

We do not find consistent results that the ownership level of the largest shareholder has a positive relationship with the propensity to pay dividends. We only have two significant coefficients of the ownership variable out of the five estimations in Table 5. There is a possibility that different ownership types might behave differently towards a dividend policy. Thus, we will examine this issue further later in the next subsection, as well as introducing the importance of corporate ownership's role in the dividend policy.

### *Ownership type and propensity to pay dividends*

In the baseline regression, we find an indication that ownerships' concentration has a positive relationship with the propensity to pay dividends. As aforementioned, one of the characteristics of the IDX is that most of the controlling shareholders are corporations. Therefore, we investigate further into the issue of this particular type of ownership, compared to the other types. We define this ownership type as any corporation that owns the majority of the shares. The literature shows

that such investors will take the role of the monitoring agent, thus reducing the agency conflict between managers and owners. Therefore, paying high dividends is no longer necessary. However when the conflict is between the majority and minority shareholders, the majority shareholders often have the discretion and the incentive to extract private benefits through their control (Gugler and Yurtoglu 2003). Barclay et al. (2009) found that non-financial corporate investors actively influenced firms' policies. In such cases, the corporate majority shareholder might need a dividend to mitigate the agency conflict between the majority and the minority shareholders. Thus, we should find a positive relationship between corporate ownership and the propensity to pay dividends. On the contrary, if the monitoring hypothesis holds, we should find that corporate ownership is negatively associated with the propensity to pay dividends.

To examine how corporate ownership influenced the propensity to pay dividends, we used two specifications in the following test. Firstly, we put each ownership type into the estimation one at a time, in which a dummy variable takes the value one if the firms are at least 50 percent owned by a particular type of owner, and zero otherwise. In this specification, we make the other types of ownership the benchmark. We identify that there are another three types of majority ownership in our data, collected from the annual financial reports of each firm, which are government, family, and insider (manager or on the board of directors). Secondly, we introduce the other ownership types into the estimation and suppressed the constant (without a reference group), to see if each type behaved differently toward the dividend policy.

Table 6. Propensity to Pay Dividends and Ownership Type

DDIV	(6)	(7)	(8)	(9)	(10)
L-C Index	0.220** (2.37)	0.212** (2.29)	0.213** (2.33)	0.194** (2.13)	0.334*** (4.17)
Corporate	0.267** (2.00)				0.333*** (3.14)
State		0.648 (0.95)			0.590 (1.29)
Insider			0.219 (0.77)		0.123 (0.33)
Individual				0.510* (1.76)	0.329 (0.54)
ROA	1.958*** (2.98)	1.884*** (2.93)	1.982*** (3.01)	1.979*** (3.07)	1.795*** (3.76)
M/B	0.0463* (1.82)	0.0458* (1.91)	0.0446* (1.80)	0.0421* (1.71)	0.0500** (2.37)
Cash/TA	3.053*** (3.96)	2.956*** (3.82)	2.811*** (3.55)	2.950*** (3.81)	3.129*** (7.08)
Size	54.55** (2.38)	52.58** (2.35)	55.93** (2.47)	56.08** (2.44)	63.73*** (3.32)
Debt/TA	-0.0193*** (-5.04)	-0.0189*** (-4.96)	-0.0192*** (-5.17)	-0.0195*** (-5.26)	-0.0166*** (-5.67)
HHI Inds.	-1.671* (-1.86)	-1.528* (-1.71)	-1.809** (-2.00)	-1.573* (-1.83)	1.126* (1.88)
Constant	3.885*** (5.21)	4.214*** (5.12)	4.060*** (5.55)	3.990*** (5.54)	
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
AIC	2215.4	2165.5	2219.0	2281.5	2156.7
BIC	2467.6	2416.5	2470.9	2534.7	2418.3
Rho	0.615	0.615	0.613	0.617	0.591
No. of Groups	309	309	309	309	309
N	2,480	2,480	2,480	2,480	2,480

z statistic in parentheses. \*p < 10%, \*\*p < 5%, \*\*\*p < 1%

Dependent variable is DDIV = dummy variable equals one if the firm pays a dividend and zero otherwise. L-C Index = life-cycle index; Corporate, State, Insider, and Individual are dummy variables equal to one if the controlling shareholder (ownership >50%) is corporate, state, insider, or individual respectively; ROA = return on assets; M/B = market value of equity to its book value; Size = firm's market capitalization to total market capitalization; Cash/TA = cash holdings to total assets; Debt/TA = long term debts to total assets; HHI Inds.=HHI of total assets industry k. Standard error is adjusted for clustering of firms.

Table 7. Cash Dividend and the Firm's Life Cycle

Div/TA	Fixed Effects		GMM System	
	(1)	(2)	(3)	(4)
RE/TE	0.00107*** (3.96)		0.000721* (1.77)	
Log Age	0.00359** (1.96)		0.00257 (1.35)	
FCF/TA	0.0283*** (3.36)		0.0134** (2.13)	
L-C Index		0.00461*** (4.43)		0.00526*** (3.47)
ROA	0.0746*** (3.34)	0.0789*** (3.41)	0.0469** (2.01)	0.0437* (1.88)
M/B	0.00138*** (3.10)	0.00206*** (2.62)	0.00322*** (3.16)	0.00402*** (3.30)
Cash/TA	0.0567*** (5.19)	0.0644*** (5.84)	0.0304*** (3.37)	0.0286*** (3.36)
Size	0.699*** (3.58)	1.392** (2.29)	0.120 (1.00)	0.306 (1.15)
Debt/TA	-0.000269*** (-6.87)	-0.000278*** (-7.09)	-0.000377** (-2.50)	-0.00038*** (-2.66)
Largest SH	0.0106*** (2.90)	0.0105** (2.54)	0.0312 (1.60)	0.0265 (1.64)
HHI Inds.	-0.00990 (-0.82)	0.00295 (0.16)	-0.00938 (-1.02)	-0.00676 (-0.73)
L.Div/TA			0.537*** (4.77)	0.599*** (6.23)
Constant	0.00669 (0.65)	-0.00800 (-0.50)	0 (.)	-0.0162 (-1.39)
R-Squared	0.523	0.527		
No. of Groups	309	309	309	309
N	2578	2602	2578	2602
p-val. AR(1)			0.061	0.058
p-val. AR(2)			0.385	0.322
P-val. Hansen stat.			0.158	0.15
No. Instruments			205	203

t statistic in parentheses. \* p < 10%, \*\*p < 5%, \*\*\*p < 1%

Two step GMM System estimator with standard error corrected using finite sample correction of Windmeijer (2005). Dependent variable is Div/TA = dividends related to the period to total assets. RE/TE = retained earnings to total equity; Log Age = natural logarithm of firm's age; FCF/TA = free cash flow to total assets; LC-Index = life-cycle index; ROA = return on assets; M/B = market value of equity to its book value; Size = firm market capitalization to total market capitalization; Cash/TA = cash holding to total assets; Debt/TA = long term debt to total assets; Largest SH = the percent of shares of the largest shareholder; HHI Inds.=HHI of total assets industry k. Instruments used are lagged 2 to lagged 5.

Table 6 shows that corporate ownership always has a significant and positive coefficient. It means that when the share of corporate ownership is more than 50 percent, the propensity to pay dividends is higher than the other ownership types. When we introduce the other types of ownership, i.e. government, individual/family, and insider (managerial and board of directors), we find that corporate ownership has a positive and significant coefficient at the 5 percent level, and we also find a positive and significant coefficient of government, but only at the 10 percent level. We also run the estimation using other measures of the life cycle, and we find the result for corporate ownership is robust, but not for government ownership. We conclude that the most influential type of owners for the propensity to pay dividends were the corporate owners, and they used dividends as a tool to reduce the agency conflict, sending the signal that they would not expropriate the minority shareholders.

### *Dividend amounts*

Now we investigate if the amount of dividend paid by firms also follows the firms' life cycles. We measure the amount paid by firms in dividends over total assets. We use panel data regression with industry fixed effects to test this hypothesis. The results are reported in Table 7. In Estimation (11) the variables  $RE/TE$  and  $FCF/TA$  are positively significant, indicating that both measures of the life cycle positively influence the amount of dividends paid by firms. Our life-cycle index, in Estimation (12), also has a positive and significant coefficient, supporting the other measures of the life cycle. Finally, fol-

lowing DeAngelo et al. (2006), we include the lag of the dividend to consider the sticky dividends. We use the GMM system estimation to deal with the endogeneity problem from the lagged dependent variable.<sup>11</sup> Estimations (13) and (14) show that variables  $RE/TE$ ,  $FCF/TA$ , and  $L-C Index$  have positive and significant coefficients, again confirming all the results we previously discussed. However, we do not find that age significantly influences the amount of dividends paid. To sum up, the amount of dividends paid by firms listed on the IDX follows the dividend life-cycle hypothesis. The results are robust with many specifications, including when we introduce the lagged value of the dividend.

### **Robustness Check**

We performed several robustness checks both in the estimation and our index.<sup>12</sup> To ensure the accuracy of the random effect probit estimation, we performed the estimation using a different number of integration points. We compare the results in Table 5 with 8 and 16 integration points, and we do not find substantial differences in the coefficients and significances.<sup>13</sup> We replace  $RE/TE$  with  $RE/TA$  in the life-cycle index and repeat all the estimations above, and we find similar results. We also run all the estimations without firms that have negative profitability ( $ROA$ ), and our results remain steady. Finally, we run all the estimations with either asset or sales growth rates as the investment opportunities measure instead of  $M/B$ , and we find similar results.

<sup>11</sup> We assume the lagged dividend payments, leverage, and market to book ratio as endogenous in the GMM system estimation.

<sup>12</sup> The results are not reported but can be provided on request by the authors.

<sup>13</sup> We used 12 integration points as the default in Stata in the xtprobit command.

The declining dividends could be due to share repurchases, as in the study by Von Eije and Megginson (2008). We also attempt to collect information on share repurchasing, but the number of observations is relatively small. For instance, before the change to the share repurchase regulation in 2007, there had only been 30 share repurchase transactions since 2000. Most of the firms that frequently buy back their shares are big firms, their *RE/TE* always being above the median and always positive. Nevertheless, they pay dividends on a regular basis. For instance, the firms whose ticker symbols are BLTA, HMSP, and TLKM, who repurchased most frequently compared to the other firms during 2000-2007, almost never skip paying dividends. This might indicate that share repurchasing is not a substitute for a cash dividend payment with agency problem motives, but to increase the stock price when it is undervalued.

## Discussion

While Indonesia has weak investor protection, the country has a relatively high economic growth. To further expand this high growth rate, Indonesia needs to provide better investor protection. From the government's point of view, the main reason for the mandatory dividend regulation is to provide better governance and investor protection, particularly for the minority shareholders. Yet, most of the listed firms on the IDX are owned by corporate investors who actively influence their firms' policies. Such a situation may indicate that investors are facing a high risk of expropriation. More importantly, these large shareholders usually also own the related upstream or downstream industries through pyramidal ownership which exacerbates the risks of expropriation. Un-

derstandably, the government is concerned that low dividend payouts will demotivate public investment and cause fewer trading transactions. Ultimately, this will worsen the investment climate, which in turn slows down economic growth. Nevertheless, there is an empirical finding from a country that has been applying mandatory dividend rules, which finds that mandatory dividends did not have a negative effect on growth.

The rules regarding dividends in Indonesia are set in the regulation for listed firms. The principal regulation about listed firms in Indonesia is the Corporate Act no. 40 year 2007. A clause in this act states that firms should pay dividends when they have a positive net income, and they have put aside some retained earnings. However, the clause also mentions "Except when the general shareholders meeting decides otherwise." This creates a loophole for firms that are owned by powerful majority shareholders or owned by individual/family owners, as is frequently the case in Indonesia. They will be the ones that make the decision about if the firm will pay a dividend. Nevertheless, unlike countries with common law legal origins, even if the firm has a positive net income but does not pay a dividend, the investors cannot go to court to ask for an order to make the firm pay their cash flow out as a dividend. In Indonesia, whose legal origins are in civil law, judges have a more limited role when applying the law to the case in hand because everything must refer to the codes and statues. Furthermore, law enforcement in Indonesia is relatively weak. Although about a quarter of the listed firms in Indonesia never paid dividends throughout the observation period, there was no legal or even administrative sanction imposed on these firms by the Security Exchange Commission. To make things worse, most of the public investors in Indo-

nesia are not aware of the rules and regulations that can protect them from expropriation.

From the firms' points of view, the government should not issue a mandatory dividend regulation since their dividend policies are already stated in their firms' charters, and it is decided by the AGM. For the firms, retained earnings are the cheapest source of capital, since there are no costs associated with debt or new share issues. Our findings show that firms in Indonesia follow the life-cycle hypothesis. This means that the firms have specific conditions at any given stage and adjust their dividend policies accordingly, to maximize firm value. Hence, firms that do not pay dividends are not necessarily expropriating their minority shareholders. We might suspect expropriation if the firms are in the most mature stage of our life-cycle index and have net positive incomes but do not pay dividends.

Ownership concentration can be the substitute for internal corporate governance in countries with weak shareholder protection. However, at the same time the majority shareholders could easily take private benefits i.e. expropriation. Our findings show that, on average, the largest shareholder has a positive effect on the propensity to pay dividends. This indicates that they tend to use their dividend policy to mitigate the agency conflict. We can also argue that they, as the insiders of the firms who have the most take on the firm, will design the dividend policy in such a way so that it will maximize the firm's value. Hence, applying mandatory dividends could be redundant.

However, the findings on the largest shareholder's stake are not robust. It will be interesting for future research to investigate this further by examining each type of con-

trolling shareholder. Different shareholder types might have different incentives regarding the dividend policy.

If the government would like to design a mandatory dividend regulation, we recommend the following. First, the government should address the loophole in the clause about dividends in the Corporate Act. If the AGM of the firm decides not to pay a dividend, the firm should disclose the reason along with their audited financial report to the Security Exchange Commission to be examined to see if the arguments, along with the supporting evidence are reasonable. Second, the government should equip the Security Exchange Commission with the authority to enforce the law by imposing sanctions for noncompliant behavior. Third, the mandatory dividend regulation should look at the free cash flow, retained earnings proportion and firm age, rather than simply looking at net income as the requirement for paying a dividend. Hence, the importance of applying the idea of the life-cycle index, such as the one that we used here, is vital. We are aware that our life-cycle index cannot be fully used for guidance to decide the life cycle of the firm, instead it shows ex-ante relative maturity among Indonesian non-financial firms only. Our life-cycle index also comes with several limitations. The index does not consider the industry difference, and although we control for the industry effect in the estimation, it does not directly address several market imperfections such as tax and firms' financial constraints, and finally it is not practical to compute. However, the authority may use the results as guidance to identify which firms should be paying a mandatory dividend, especially if they are identified as the most mature firms. Those firms that have already been identified as the most mature firms in this study could be the subject of mandatory

dividends, as firms that are already in the most mature stage in this study (e.g. the L-C Index > 3.5), will not go back to the early infusion stage of the life cycle.

## Summary and Conclusion

This study explains the recent concern of the IDX as to why many firms have not paid dividends. Even though the number of dividend payers is actually increasing, the percentage of firms that pay dividends is relatively stagnant. At the same time, we find that the amount of the dividends paid is increasing, indicating a dividend concentration that is similar to what happens in other countries. As shown in our results, we argue that the reason is due to the changes in the firms' characteristics through their life cycle.

Overall, the dividend policy of the firms listed on the IDX is mostly consistent with the dividend life-cycle hypothesis, and this might explain why some firms do not pay dividends. Earned or contributed equity, firms' age, and free cash flow consistently have significant explanatory powers on the probability of paying a dividend. Our life-cycle proxy, namely the life-cycle index, which captures several aspects of the firms' maturity, also consistently has significant influence on the firms' probability to pay dividends. We also find that firms controlled by corporate shareholders use dividends to reduce the severity of any agency conflict with the minority shareholders. This confirms that agency conflict still plays a major role in explaining the firms' dividend policies in Indonesia. Finally, we also find that the dividend life-cycle hypothesis explains the amount of dividends paid by Indonesian firms. These results are robust for the various control variables and estimations.

Our results make an important contribution to the dividend policy literature in Indonesia and corporate governance regulations, as we provide relatively new evidence in a broader account using the dividend life-cycle framework. As Lease et al. (2000) suggest, the investment opportunities, agency conflict, asymmetric information and shareholders' tax of a firm all follow the firm's life-cycle, and these factors shape the optimal dividend policy of the firm. Firms cannot be forced to pay dividends with a 'one-policy-for-all' regulation. Therefore, the regulation of dividend payments, if any, should be flexible, taking into consideration which stage each firm is at. If the regulation forces firms in their growth stage to pay dividends, they will incur another agency cost due to suboptimal investments, and this will further raise their costs of capital as they are forced to take more external financing while their information asymmetry and floatation costs are still high, and finally it will harm the shareholders themselves. On the other hand, firms in the more mature stage could expropriate minority shareholders and increase their agency conflict if they pay no or few dividends. The dividend regulation, therefore, should address the issue of those firms that are at the stage where they are capable of paying dividends but do not do so. Thus, if the regulator finally decides to apply the mandatory dividend rule, they should consider the firms' life cycle. The results from our life-cycle index, which we composed for this study, could give a hint that we cannot merely rely on the positive earnings reported by the firms to require them to pay dividends. One should carefully look at each firm's retained earnings accumulations, free cash flows, and age.



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