IS THERE A DIVIDEND LIFE CYCLE IN PRIVATELY HELD FIRMS?

Jovana Cadenovic (*)
University of Antwerp
Email: jovana.cadenovic@uantwerpen.be

Marc Deloof
University of Antwerp and Antwerp Management School
Email: marc.deloof@uantwerpen.be

Ine Paeleman
University of Antwerp
Email: ine.paeleman@uantwerpen.be

Abstract:

In this paper, we investigate whether there is a life cycle in the dividend policy of privately held firms. Our analysis is based on a very large sample of Belgian privately held firms covering the period 2005-2018. Consistent with the life cycle theory, we find that privately held firms are more likely to pay dividends and pay higher dividends as their retained earnings increase. They are also more like to initiate (omit) a dividend as their retained earnings increase (decrease) over time. These findings are confirmed when using firm age as a proxy for the firms' life cycle. Our results suggest that there is a dividend life cycle in privately held firms which is similar to the dividend life cycle of listed firms.

Keywords: Dividend policy, Life cycle, Privately held firms

(*) Corresponding author. We are grateful to Sophie Manigart and participants at the 2020 WOG Workshop on Governance in Private Firms at the Vlerick Business School for helpful comments and suggestions. The authors acknowledge the financial support of Antwerp University Research Fund (BOF) and Research Foundation Flanders (FWO) (Grant W0.023.19N).

1. Introduction

Dividend policy plays a crucial role in investment and finance decisions of firms and firm valuations (see e.g., Allen & Michaely, 2003; Farre-Mensa, Michaely, & Schmalz, 2014). A large literature has investigated the dividend policy of listed firms (Habib & Hasan, 2019), but we still know relatively little about the dividend policies of privately held firms, despite the fact that most firms in the economy are privately held (Berzins, Bøhren, & Stacescu, 2018, 2019; Michaely & Roberts, 2011; Rommens, Cuyvers & Deloof, 2012). While privately held firms generally are less likely to pay dividends and have lower dividend payouts than listed firms (Michaely & Roberts, 2012; Rommens et al. 2012), many privately held firms do pay out dividends on a regular basis (see e.g., Berzins et al., 2018, 2019; Michiels, Voordeckers, Lybaert & Steijvers, 2015; Poza, 2009). This is remarkable since dividend taxes make it costly for firms to pay out dividends. Furthermore, while for listed firms dividends are often considered as a signalling mechanism to overcome asymmetric information towards outside investors and as a tool to reduce agency conflicts between firm insiders and outside investors, privately held firms tend to have few or no outside investors. Asymmetric information and agency problems between insiders and outsiders are therefore less likely to affect their dividends.

In this paper, we investigate whether the life cycle affects the dividend policy of privately held firms. Life cycle theory generally refers to the changes in firm's financial policies as firms progress from birth to growth, maturity and decline stages (Dickinson, 2011; Faff, Kwok, Podolski & Wong, 2016). Different stages of the life cycle may play an important role in determining the financial decisions and behaviour of the firms (La Rocca, La Rocca & Cariola, 2011). Similarly, the decision whether to distribute excess cash in the form of dividends or to retain it in the firm may also depend on the stage of the firm's life cycle. Since firms do not progress monotonically from birth to decline, this transition may be nonlinear, and firms often

move back and forth from one stage to another (Dickinson, 2011; Habib & Hasan, 2019). DeAngelo, DeAngelo and Stulz (2006) test the dividend life cycle for the listed firms in the US, using retained earnings as a proxy for firm maturity. They find that the likelihood that listed firms pay out dividends is high when retained earnings represent a large part of total equity (total assets). However, the likelihood of dividend payment is much lower when most equity is contributed rather than earned. Mature and declining firms hold more earned equity, but lack the investment opportunities to grow what makes them better candidates to pay dividends. In contrast, young and growing firms hold more contributed rather than earned capital. These findings are confirmed by Brockman and Unlu (2011) for a multi-country sample of listed firms.

However, it is not clear to what extent the dividend policy of privately held firms follows the life cycle theory as observed for listed firms. On the one hand, privately held firms face less external pressure to pay dividends when they have excess cash than listed firms, because information problems and agency conflicts between insiders and outsiders generally play a much smaller role in privately held firms. The owners of privately held firms may refrain from paying dividends especially in the early stages of the firm's life cycle when money is scarce and growth is high, because they have limited access to external finance. Outside equity financing is very costly due to asymmetric information and will dilute the control of the owners (Brav, 2009). Debt financing is limited by bankruptcy costs. Furthermore, under-diversified owners may prefer to keep high cash reserves instead of paying dividends to reduce their risk (Anderson & Hamadi, 2016).

On the other hand, privately held firms are unlikely to have self-interested managers who restrict dividends and keep free cash flow in the firm. Furthermore, dividends may be an important mitigator of agency conflicts between controlling shareholders and minority shareholders (Berzins et al., 2018, 2019; Michaely & Roberts, 2012) and between family shareholders (Michiels et al., 2015). This could result in higher dividend payouts, especially in

later stages of the firm's life cycle when there are ample excess cash and few growth opportunities.

We investigate the dividend life cycle for a sample of 113,880 Belgian privately held firms that covers the period 2005-2018. In addition to the DeAngelo et al. (2006) measures of the firm's life cycle, i.e. the amount of earned equity (retained earnings), relative to common equity (RE/TE) or to total assets (RE/TA), we also consider the firm's age. We find that there is indeed a life cycle effect in the dividend payouts of privately held firms. In all model specifications, we find that retained earnings have a strong significant impact on a probability of privately held firms to pay dividends. This life cycle effect is confirmed when we consider firm age as a proxy for the life cycle and when we use alternative measures of dividend policy, namely dividend to cash flow ratio and dividend to earnings ratio. Our results are robust when we account for industry fixed effects and apply different estimation methods. Moreover, we find a life cycle effect for both large and small privately held firms.

The effect of retained earnings on dividend policy is also confirmed by our finding that retained earnings significantly increase (decline) five years before privately held firm decides to initiate (omit) dividend payout. Finally, our results suggest that the life cycle effect exists independently of the legal solvency threshold that Belgian firms have to pass in order to be allowed to pay a dividend.

We contribute to the literature on dividend policy by showing that the dividends of these privately held firms follow a predictable pattern in line with the firm's life cycle. While this effect has previously been documented for listed firms, the relation between managers, owners and financiers is very different in privately held firms, leading to different dividend policies. (Berzins et.al., 2018, 2019; Michaely & Roberts, 2011; Michiels et al., 2015; Rommens et al., 2012). Despite these differences, we find a dividend life cycle in privately held firms which is comparable to the life cycle effect found in listed firms. As such, our findings provide new insights into the dividend policy of privately held firms, which is still poorly understood,

despite the enormous economic importance of these firms. We also contribute to the literature on financing policies of SMEs and privately held firms by demonstrating that there is not only a life cycle in the capital structure of these firms (La Rocca et al., 2011; Serrasqueiro & Maçãs Nunes, 2012) but also in their dividend policy. Finally, we draw attention to legal constraints on dividend payments that affect the payout policy of privately held firms. Our study continues as follows. Section 2 presents empirical strategies and variables. Section 3 includes results of the dividend life cycle in privately held firms. Section 4 concludes.

2. Data, Variables and Methods

We collect data from the Bel-First database maintained by Bureau van Dijk (BvD) which offers an electronic access to detailed yearly financial statements of all Belgian firms. We focus on independent, privately held firms between 2005 and 2018. We exclude financial and utility firms as those are subject to different government regulations (e.g., Allen & Michaely, 2003; Berzins et al., 2018; DeAngelo et al., 2006; Grullon & Michaely, 2002). We also exclude firms which are not independently owned, i.e. those firms with an ultimate owner holding at least 50% of the shares except those held by named individuals, employees or family members. We select firms with minimum one employee to eliminate ghost firms and we consider only those firms with positive total equity (e.g., DeAngelo et al., 2006; Hasan & Cheung, 2018; Owen & Yawson, 2010). Finally, we exclude firm-years when the firm is not legally allowed to pay a dividend according to Belgian legislation. Belgian firms are not able to pay a dividend when their "net assets", i.e. total assets minus liabilities and intangible assets, are lower than the "unavailable equity", i.e. the sum of issued capital (less the sum of uncalled capital and called amounts of unreleased capital), share premiums, revaluation surpluses, legal reserves, unavailable reserves and investment grants[1].

[1] See: De Backer G. et al., "Dé gids voor vennootschappen", Wolters Kluwer, Mechelen, 2014.

Our sampling procedure results in 113,880 Belgian, independent, privately held firms and 668,231 firm-year observations.

An overview of all variables used in this study can be found in Table 1. All the variables are based on unconsolidated financial statements. Consistent with prior research (Brockman & Unlu, 2011; DeAngelo et al., 2006; Fama & French, 2001; Michiels et al., 2015; Rommens et al., 2012), our main dividend measures are *DIV*, which is a dummy equal to one if the firm pays dividends in year t and zero otherwise, and *Div/CF*, which is dividends paid in year t scaled by earnings before interest, taxes, depreciation and amortization in year t-1. As a robustness check, we also consider *Div/E* which is dividends paid in year t over net income in year t-1 (La Porta et al., 2000; Rommens et al., 2012). We consider cash flow, earnings and most of our control variables in the year prior to the dividend year and we include data for 2004 to derive the lagged values for 2005.

We measure the life cycle effect using retained earnings scaled by total equity and by total assets, respectively in year t-1 (*RE/TE* and *RE/TA*) (Brockman & Unlu, 2011; De Angelo et al., 2006; Faff et al., 2016; Habib & Hasan, 2017; Hasan et al., 2015; Owen & Yawson, 2010). We also consider the natural logarithm of the number of years since the founding of the firm, namely *Ln_Age* (La Rocca et al., 2011) as a proxy for the firm's life cycle. Furthermore, we use firm *AGE* and include AGE^2 to account for possible nonlinearities of dividend policies in privately held firms.

*** Insert Table 1 here ***

We include a number of control variables which have been found to affect dividend payouts. We control for leverage by including the ratio of total equity to total assets in year t-1 (*TE/TA*) which is essentially a complement to leverage. Firms moving from the introduction stage towards the more mature stages of their life tend to increase their debt issuance (DeAngelo et al., 2006; Brockman & Unlu, 2011; Michaely & Roberts, 2012; Michiels et al.,

2015; Rommens et al., 2012). We take cash and cash equivalents relatively to total assets in year t-1 (*CASH/TA*) as a measure for cash holdings (Brockman & Unlu, 2011; Bulan et al., 2007; DeAngelo et al. 2006; Michiels et al., 2015). An increase in cash is likely to increase the propensity to pay a dividend. We control for last year's dividend payout taking the lagged dividend dummy (*L_DIV*) (Fama & French, 2001; DeAngelo et al 2006). We also include lagged profitability as more profitable firms tend to have higher propensity to pay dividends in the following years. We measure profitability by scaling earnings before interest, taxes, depreciation and amortisation in year t to total assets in year t-1 (*EBITDA/TA*) which essentially represent the free cash flow (Bulan et al., 2007; Fenn & Liang, 2001; Michiels et al., 2015). We add profitability lagged one more period, profitability in t-2 (*L_EBITDA/TA*). Firms slowly adapt their dividend policy to new profit information (Lintner, 1956). We also control for assets growth rate (AGR) by including (total assets in year t) – (total assets in year t-1) over total assets in year t-1 as a measure for firm growth opportunities (DeAngelo et al. 2006; Fama & French, 2001; Michiels et al., 2015). As firm matures and growing opportunities decrease, more earnings will be available for paying out dividends (Loderer, Stulz & Waelchli, 2017). Finally, we control for the *SIZE* of the firm by taking the natural logarithm of total assets in year t-1 (Bulan, Subramanian, & Tanlu, 2007; Brockman & Unlu, 2011; Faccio, Lang & Young, 2001; Koh et al., 2015; La Rocca et al., 2011; Michaely & Roberts, 2012; Rommens et al., 2012). All variables except lagged dividend dummy are winsorized at the 1% and 99% tails.

3. Results

3.1 Descriptive statistics

Table 2 reports summary statistics of dividend payers and nonpayers in our full sample of privately held firms for the period 2005-2018. In addition, we also include t-statistics which show significant differences of the variables between dividend payers and nonpayers.

*** Insert Table 2 here ***

It is not surprising that most of the firms in our sample do not pay out dividends. Only 17% of all our firm-year observations pay out dividends, similarly to earlier findings of Rommens et. al., (2012) for Belgian privately held firms. The percentage is, however, much smaller than 41% found by Michaely and Roberts (2012) in the UK sample of privately held firms. Berzins et al., (2018) document on average 27% of Norwegian dividend paying privately held firms. The dividend life cycle proxy, i.e., the ratio retained earnings relative to total equity (RE/TE), equals on average 0.28 for payers while 0.23 for dividend nonpayers. This difference is statistically significant. The average RE/TA is also on average higher for dividend payers (13%) than for dividend nonpayers (10%). These statistics are in line with the expectation of the dividend life cycle theory that firms with more retained earnings are more likely to pay dividends. Moreover, we find a positive median RE/TE of 0.04 and RE/TA of 0.01 for the sample of dividend nonpayers. Results are in contrast to DeAngelo et al., (2006) who document a negative median RE/TA in the fraction of listed firms which do not pay dividends.

Table 2 also shows that dividend payers are significantly older than dividend nonpayers, they have lower leverage as shown by higher TE/TA which is the inverse of leverage, they are more profitable as measured by EBITDA/TA, and they have a lower assets growth rate AGR. These findings are also in line with the dividend life cycle theory as it suggests that firms pay dividends when profits are increasing and investment opportunities are decreasing. Finally, dividend payers are larger in size and hold more cash than nonpayers. In addition, Table 3 reports the correlation matrix for all variables. Pairwise correlations are significant at 1% tail indicating a strong mutual variation in chosen variables. The possibility of multicollinearity is low because none of the variance inflation factors were above 5.63 found for TE/TA.

*** Insert Table 3 here ***

3.2 The life cycle effect

Table 4 reports the results of the life cycle effect proxied by RE/TE and RE/TA. Following DeAngelo et al. (2006), we apply the Fama and French (2001) and Fama and MacBeth (1973) statistical approach from the times series of fitted logit coefficients and assess the hypothesis that the expected coefficient value is zero. We report the mean coefficients and t-statistics in Table 4. Following DeAngelo et al. (2006), we run 14 multivariate logit regressions with DIV dummy as the dependent variable, a proxy for life cycle and the control variables for each year separately during the observed period 2005-2018. All models include EBITDA/TA, AGR, and firm SIZE as control variables. Models 1, 3, 5, 7 and 9 show the impact of RE/TE , models 2, 4, 6, 8 and 10 assess the impact of RE/TA on the probability of paying a dividend. Gradually, we introduce in the model TE/TA, CASH/TA, L_DIV and L_EBITDA/TA as control variables. We obtain the time series of 14 fitted coefficients which we use to derive the t-statistics (unadjusted for serial correlation) and determine the significance of the variable coefficients.

Table 4 clearly shows the dividend life cycle effect among privately held firms where higher retained earnings increase a firm's propensity to pay a dividend, while controlling for other factors that influence dividend policy. In all models, both RE/TE and RE/TA have a positive and highly significant impact with the lowest t-statistics of 6.84 and 4.53 respectively. The coefficients of leverage, cash, lagged dividend profitability, firm size and growth are also highly significant and with the expected signs. Leverage as measured by TE/TA is positive and highly significant. A higher TE/TA increases the propensity of privately held firms to pay a dividend. Traditionally, size and cash holdings have a significant positive impact on the propensity to issue dividends (Bulan et. al., 2007; Fama & French, 2001). We also find highly significant positive coefficients on last year dividend paid dummy which makes it a strong predictor that privately held firms will pay dividends again this year. Fama and French (2001) drew the attention to the inconvenience of including lagged dividend dummy as an independent variable. However, we show that RE/TE, RE/TA and the other variables remain highly

significant in the models which include the lagged dividend dummy. More mature firms also grow less in assets which increases the probability to pay a dividend as observed in highly significant negative asset growth coefficients in all estimated models. In appendix, table A.1 shows the results of impact of RE/TE and all other control variables on firm's probability to pay a dividend for each year separately. RE/TE has a positive effect on the likelihood of dividend payment which is significant at the 1% level in all years except one (2013). Overall, our results are strongly consistent with the life cycle theory of dividends found among listed firms.

Table 5 reports similar models to ones in Table 4, however in Table 5 we apply OLS regressions for every year in the observed period (2005-2018) on a firm's *dividend to cash flow ratio* from which we again derive 14 fitted coefficients to calculate its mean and t-statistics and decide about their significance. Again, we use both RE/TE and RE/TA as measures of dividend life cycle and we control for the same factors. Every model shows positive and statistically significant mean coefficients for RE/TE and RE/TA, consistent with the life cycle effect. We observe a high economic significance of RE/TA on Div/CF of privately held firms: in model 2, an additional unit of RE/TA increases Div/CF by 14%. We also observe a positive significant effect of cash holdings, last year's dividend, profitability and size while growth opportunities downsize the dividend to cash flow ratio of privately held firms.

*** Insert Table 4 and 5 here ***

Overall, our results confirm the dividend life cycle theory as they show that decisions of privately held firms to issue dividends depend on the earned equity versus contributed capital mix, measured by either RE/TE or RE/TA. While DeAngelo et al. (2006) do not include industry affiliation in their regressions, the dividend policy of privately held firms is likely to be affected by the industry in which they operate (e.g., Berzins et al., 2018; Brockman & Unlu, 2011). As a robustness check we, therefore, rerun all the logit and OLS regressions with

dummies for two-digit NACE-BEL 2008 codes. The results (available in appendix Table A.2 and A.3) are fully consistent with the ones reported in the paper. As additional robustness analyses, we measure dividend policy by the dividend to earnings ratio (Div/E) (Berzins et al., 2018; 2019; Rommens et al., 2012). The results (available in appendix Tables A.4 and A.5) again show a strong dividend life cycle effect.

Table 2 shows that on a sample of privately held firms dividend payers are larger than nonpayers, which is consistent with the findings of Fama and French (2001) for a sample of listed firms. Fama and French (2001) argue that the decrease in number of listed firms that pay dividends is due to many new listed firms which are characterized as small, unprofitable and with high growth opportunities. We investigate whether firm size matters for our results by splitting our sample according to the median SIZE. Table 6 provides the results of the dividend policy of large, above median size, and small, below median size, firms, respectively. We run separately multivariate logit regressions year by year to analyse the decision to pay dividends, while we use OLS regressions year by year to analyse the dividend payout measured by dividend to cash flow ratio (Div/CF). Models are analogue to models 9 and 10 from Tables 4 and 5, where we observe the effect of life cycle measured by RE/TE and RE/TA, while we control for all the other factors that affect dividend policy. We apply Fama and Macbeth (1973) methodology and we derive mean coefficients and t-statistics from the time series of 14 fitted coefficients.

*** Insert Table 6 here***

We find a strong dividend life cycle effect for both large and small privately held firms: RE/TE and RE/TA remain positive and highly significant, regardless of the size of the firms. In models 1-4 we observe very similar coefficients and t-statistics of both life cycle measures for different samples. Retained earnings have almost equal effect on a large and small privately held firms probability to issue dividends. In models 5-8 we repeat our analyses using OLS

regressions year by year and dividend to cash flow ratio as our dependent variable. Results remain consistent, but the effect of retained earnings on the dividend to cash flow ratio is somewhat bigger for larger firms than for smaller firms. For example, model 6 shows that one unit increase in RE/TA of large firms leads to 8% increase in Div/CF, while only 5% in the sample of small firms. We also observe that RE/TA has a stronger effect in magnitude than RE/TE, for both samples. Nevertheless, dividend to cash flow ratio increase with the maturity of the firm showing that dividend policy of all privately held firms do vary with the change of their retained earnings.

3.3 Dividend initiators and omitters

So far, we have analysed cross-sectional variations in privately held firms decisions to pay dividends. In this section, we examine the evolution of RE/TE and RE/TA in the five years before the decision to initiate or omit a dividend. The dividend life cycle predicts that RE/TE and RE/TA will exhibit an upward trend in the years before a dividend initiation (Brockman & Unlu, 2011; DeAngleo et al., 2006). Correspondingly, these variables should assume the opposite trend in the years before a dividend omission.

We define a dividend initiator as a firm which pays a dividend after having not paid them for five or more consecutive years. A dividend omitter is a firm that omitted dividends after paying dividends for at least five consecutive years. We identified 11,187 dividend initiators during the period (2005-2018). 66 of those firms had initiated dividends twice (two separate times after not paying them for five years in a row). Analogously, we identify 3,252 dividend-omitting firms, of which 21 omitted dividend twice during the sample period.

*** Insert Figure 1 and 2 here ***

Figures 1 and 2 depict the trends in median values of RE/TE and RE/TA for dividend initiators and dividend omitters from year -5 until year 0, which is the year of the dividend initiation or omission. For privately held firms with more than one dividend initiation we

include and report in the figures the first dividend initiation, and for privately held firms with more than one dividend omission, we include only the last omission.

The trend in the median RE/TE in Figure 1 is as expected, for dividend initiators sloping upwards from year -5 until the year -2, showing a 25% increase during the period. Median RE/TE of dividend-omitting privately held firms consistenly trends downward during five years before the omission. We observe a 75% decline in median RE/TE from year -5 to the actual omission year 0. Figure 2 depicts the same trend in median RE/TA showing that firms that pay (omit) dividends after at least five years of not paying (paying) dividends experience an increase (decline) in RE/TA in the five years leading up to the dividend change. Taken together, both figures confirm the notion that decisions to initiate and omit dividends are strongly dependent on firm's earned capital measured by retained earnings.

3.4 Firm's age as a measure for dividend life cycle

We check the robustness of our results by using firm age as a measure of the firms' life cycle in Table 10. We observe the effect of ln_Age, the natural logarithm of years since firm incorporation[2] on two measures of dividend policy, i.e., DIV dummy and dividend to cash flow ratio (Div/CF)[3]. We run OLS regressions and control for TE/TA, cash, profitability, growth, size, industry and year fixed effects. We find highly significant and positive ln_Age coefficients. As firms mature, they are more likely to pay dividends (Model 1) and they provide a higher dividend payout (Model 2). Economically, an additional year in maturity of the firms leads to 2% higher likelihood of paying a dividend, and to a 1% higher dividend payout, ceteris paribus. The results for the control variables are consistent with previous findings with

[2] A limitation of this analysis is that the date of incorporation does not necessarily reflect the date of birth of a firm. For instance, a new legal entity might be created after an acquisition, a new date of birth originated, despite the fact that both the acquiring and the acquired firms already existed in the past.

[3] We also regress age and age^2 on whether firms pay dividends or not (DIV dummy) and dividend to cash flow ratio (Div/CF). We include age^2 to fetch the curvilinear effect as a firm's maturity can have a nonlinear effect on dividend policy. We find a significant curvilinear effect on Div/CF, while it appears insignificant in the decision to issue dividend. Results are in appendix Table A.6.

positively significant effects of leverage, cash, profitability and size, while asset growth rate has a negative effect.

*** Insert Table 10 here ***

Figures 3 and 4 depict the prediction for DIV and Div/CF[4], respectively, from a linear regression on age and age[2]. We observe the positive effect of a privately held firm's maturity measured by age on a decision to issue dividends. However, the effect is diminishing for Div/CF as shown by inverted U shape of the curve in Figure 4.

*** Insert Figure 3 and 4 here ***

When we apply different estimation methods, the life cycle effect appears consistent. We run OLS regressions and fixed effects regressions of the effect of age on dividend to earnings ratio (Div/E) as our dependent variable and we observe similar results. These results are available in appendix (Table A.7). Finally, Tables A.8 and A.9 in appendix show the effect of age on dividend dummy (DIV) where we apply fixed effects regressions, logit regressions and fixed effects logit regressions.

3.5 The effect of the legal threshold to pay dividends

Finally, we investigate how the legal threshold to pay dividends in Belgium affects their dividend policy. The analyses of the life cycle effect (including firms that are not allowed to pay dividends) yield consistent results when we consider the full sample, including firms that do not meet the legal threshold for paying a dividend, with positive and highly significant impact of RE/TE and RE/TA on firm's probability to pay dividends. We provide the results in appendix (Table A.10). These findings confirm that the dividend decision to pay a dividend is driven by the underlying financial situation of the firm rather than by the legal threshold applied in Belgium.

[4] We use the twoway qfit command in STATA to obtain the predicted values.

We also expect that the closer firms get to the legal threshold, the less likely they will pay a dividend since a closer distance to the legal threshold reflects a deteriorating solvency. On the other hand, it could be argued that the shareholders of firms getting closer to insolvency may want to 'milk' the firm at the expense of the debtholders who will have priority payment in case of insolvency, by paying a dividend. To investigate this, we include five dummy variables depending on the percentage above the threshold. Namely, d_0_5 is a dummy equal to 1 if firms exceed 0% to 5% above the threshold of legal ability to pay a dividend, zero otherwise; d_5_10 is a dummy equal to 1 if firms exceed 5% to 10% above the threshold of legal ability to pay a dividend, zero otherwise; d_10_20 is a dummy equal to 1 if firms exceed 10% to 20% above the threshold of legal ability to pay a dividend, zero otherwise; d_20_30 is a dummy equal to 1 if firms exceed 20% to 30% above the threshold of legal ability to pay a dividend, zero otherwise, and d_30_40 is a dummy equal to 1 if firms exceed 30% to 40% above the threshold of legal ability to pay a dividend, zero otherwise. In line with our expectations, Table 11 shows that firms are less likely to pay dividends, the closer they get to the legal threshold. When firms exceed the threshold by 30 to 40 percent, they are 3% less likely to pay a dividend and their dividend payout is also 3% lower than other firms. When they are very close to the legal threshold, exceeding it by less than 5%, they are 7% less likely to pay a dividend and have a dividend payout which is 6% lower.

*** Insert Table 11 here ***

4. Conclusion

This study provides new evidence on the payout policy of privately held firms. While there is an evidence of a life cycle effect in the dividend policy of listed firms, we don't know whether such an effect exists for privately held firms. The incentives to pay dividends are very different in privately held firms than in listed firms. Privately held firms face less external pressure to pay dividends because agency conflicts between insiders and outsiders generally

play a much smaller role than in listed firms. Furthermore, restricted access to outside finance due to asymmetric information, a desire to keep control over the firm, and the taxation of dividends may induce the owners of privately held firms to keep cash in the firms instead of paying a dividend. On the other hand, the lack of self-interested managers overinvesting free cash flow at the expense of the shareholders in privately held firms may lead to higher payouts when the firm has few investment opportunities.

We examine the dividend life cycle effect for a large sample of Belgian privately held firms in the period 2005-2018, exploiting the fact that all privately held firms in Belgium are required to publicly disclose their financial statements, which include dividend payouts. We find strong evidence of a life cycle effect in the dividend policy of privately held firms. Retained earnings play a significant role in explaining dividend policy over the lifetime of privately held firms. As firms mature and have more retained earnings, they are more likely to pay dividends and pay higher dividends. We find this effect both for large and for small firms, and it is confirmed when we use firm age as a proxy for the life cycle. Year-by-year regressions suggest that the life cycle effect persists over the entire sample period. The results are confirmed by several robustness tests. Taken together, our results are strongly in line with the dividend life cycle theory and confirm the results found in other studies for listed firms. In this way, we contribute to both the finance and management literature by providing new insights into payout policies of privately held firms, which have so far been largely overlooked in these literatures.

We extend the literature on dividend policy in privately held firms by taking a different perspective from e.g. Berzins et. al., (2018; 2019) and Michiels et. al., (2015), who ground their arguments on principal-principal agency conflicts. The dividend payout of privately held firms follow a predictable life cycle pattern proxied by retained earnings. Privately held firms that have lower leverage, higher cash holdings, that are more profitable with slowing assets growth are more likely to pay dividends.

There are some limitations to our study which suggest avenues for further research. Our study, does not show whether changes in dividend policy contain any information about future earnings and performance of the privately held firms. Berzins et. al. (2018) do not find a signalling effect of dividend changes among Norwegian privately held firms, but there is some evidence that listed firms change their dividend policy in anticipation of a permanent change in earnings (Lintner, 1956; Brav et al., 2005). Recently, Ham, Kaplan and Leary (2020) find that dividend increasing (decreasing) firms move to a higher (lower) level of permanent earnings. We find that dividend initiations (omissions) follow after a consistent decline (increase) in retained earnings, but further research could explore how flexible dividends of privately held firms are and how quickly they rebound to initial dividend level after reductions or omissions. It would also be interesting to investigate how the life cycle effect is affected by the ownership structure of privately held firms, since earlier studies have found that this structure matters for dividend policy (Brav et al., 2005; Berzins et al., 2018; Michiels et al., 2019). Unfortunately, the available data do not allow us to fully take into account the ownership structure. Finally, current studies of dividend policy for privately held firms are country specific calling for more research in international setting.

References

Allen, F., & Michaely, R. (2003). Payout Policy. In G. Constantinides, M. Harris & R. Stulz, *Handbook of the Economics of Finance* (1st ed., pp. 337-429). https://doi.org/10.1016/S1574-0102(03)01011-2

Anderson, R.W., & Hamadi, M. (2016). Cash holding and control-oriented finance. *Journal of Corporate Finance*, 41, 410-425. https://doi.org/10.1016/j.jcorpfin.2016.10.009

Berzins, J., Bøhren, Ø., & Stacescu, B. (2018). Shareholder Conflicts and Dividends. *Review Of Finance*, *22*(5), 1807-1840. https://doi.org/10.1093/rof/rfx046

Berzins, J., Bøhren, Ø., & Stacescu, B. (2019). Dividends and taxes: The moderating role of agency conflicts. *Journal Of Corporate Finance*, *58*, 583-604. https://doi.org/10.1016/j.jcorpfin.2019.07.003

Brav, O. (2009). Access to capital, capital structure, and the funding of the firm. *Journal of Finance*, 64, 263-308. https://doi.org/10.1111/j.1540-6261.2008.01434.x

Brockman, P., & Unlu, E. (2011). Earned/contributed capital, dividend policy, and disclosure quality: An international study. *Journal Of Banking & Finance*, *35*(7), 1610-1625. https://doi.org/10.1016/j.jbankfin.2010.11.014

Bulan, L., Subramanian, N., & Tanlu, L. (2007). On the Timing of Dividend Initiations. *Financial Management*, *36*(4), 31-65. https://doi.org/10.2139/ssrn.472943

DeAngelo, H., DeAngelo, L., & Stulz, R. (2006). Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory☆. *Journal Of Financial Economics*, *81*(2), 227-254. https://doi.org/10.1016/j.jfineco.2005.07.005

De Backer, G., 2014. De gids voor vennootschappen. Mechelen: Kluwer België, pp.662-663.

Dickinson, V. (2011). Cash Flow Patterns as a Proxy for Firm Life Cycle. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1268509

Faccio, M., Lang, L., & Young, L. (2001). Dividends and Expropriation. *American Economic Review*, *91*(1), 54-78. https://doi.org/10.1257/aer.91.1.54

Faff, R., Kwok, W., Podolski, E., & Wong, G. (2016). Do corporate policies follow a life-cycle?. *Journal Of Banking & Finance*, *69*, 95-107. https://doi.org/10.1016/j.jbankfin.2016.04.009

Fama, E., & French, K. (2001). Disappearing dividends: changing firm characteristics or lower propensity to pay?. *Journal Of Financial Economics*, *60*(1), 3-43. https://doi.org/10.1016/s0304-405x(01)00038-1

Fama, E., & MacBeth, J. (1973). Risk, Return, and Equilibrium: Empirical Tests. *Journal of Political Economy*, *81*(3), 607-636. http://dx.doi.org/10.1086/260061

Farre-Mensa, J., Michaely, R., & Schmalz, M. (2014). Payout Policy. *Annual Review Of Financial Economics*, *6*(1), 75-134. https://doi.org/10.1146/annurev-financial-110613-034259

Fenn, G., & Liang, N. (2001). Corporate payout policy and managerial stock incentives. *Journal Of Financial Economics*, *60*(1), 45-72. https://doi.org/10.1016/s0304-405x(01)00039-3

Grullon, G., Michaely, R., & Swaminathan, B. (2002). Are Dividend Changes a Sign of Firm Maturity?. *The Journal Of Business*, *75*(3), 387-424. https://doi.org/10.1086/339889

Habib, A., & Hasan, M. (2019). Corporate life cycle research in accounting, finance and corporate governance: A survey, and directions for future research. *International Review Of Financial Analysis*, *61*, 188-201. https://doi.org/10.1016/j.irfa.2018.12.004

Ham, C., Kaplan, Z. and Leary, M., 2020. Do dividends convey information about future earnings?. *Journal of Financial Economics*, 136(2), pp.547-570. https://doi.org/10.1016/j.jfineco.2019.10.006

Hasan, M., & Cheung, A. (2018). Organization capital and firm life cycle. *Journal Of Corporate Finance*, *48*, 556-578. https://doi.org/10.1016/j.jcorpfin.2017.12.003

Jensen, M. (1986). Agency Cost Of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review*, *76*(2), 323-329. https://doi.org/10.2139/ssrn.99580

Koh, S., Durand, R., Dai, L., & Chang, M. (2015). Financial distress: Life-cycle and corporate restructuring. *Journal Of Corporate Finance*, *33*, 19-33. https://doi.org/10.1016/j.jcorpfin.2015.04.004

La Rocca, M., La Rocca, T., & Cariola, A. (2011). Capital Structure Decisions During a Firm's Life Cycle. *Small Business Economics*, *37*, 107-130. https://doi.org/10.1007/s11187-009-9229-z

Lintner, J. (1956). Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes. *The American Economic Review*, *46*(2), 97-113.

Loderer, C., Stulz, R., & Waelchli, U. (2017). Firm Rigidities and the Decline in Growth Opportunities. *Management Science*, *63*(9), 3000-3020. https://doi.org/10.1287/mnsc.2016.2478

Michaely, R., & Roberts, M. (2011). Corporate Dividend Policies: Lessons from Private Firms. *Review Of Financial Studies*, *25*(3), 711-746. https://doi.org/10.1093/rfs/hhr108

Michiels, A., Voordeckers, W., Lybaert, N., & Steijvers, T. (2015). Dividends and family governance practices in private family firms. *Small Business Economics*, *44*(2), 299-314. https://doi.org/10.1007/s11187-014-9594-0

Owen, S., & Yawson, A. (2010). Corporate life cycle and M&A activity. *Journal Of Banking & Finance*, *34*(2), 427-440. https://doi.org/10.1016/j.jbankfin.2009.08.003

Poza, E. (2010). *Family Business* (3rd ed.). Thomson South-Western.

Rommens, A., Cuyvers, L., & Deloof, M. (2012). Dividend Policies of Privately Held Companies: Stand-Alone and Group Companies in Belgium. *European Financial Management*, *18*(5), 816-835. https://doi.org/10.1111/j.1468-036x.2010.00554.x

Serrasqueiro, Z., & Maçãs Nunes, P. (2012). Is age a determinant of SMEs' financing decisions? Empirical evidence using panel data models. *Entrepreneurship Theory and Practice*, *36*(4), 627-654.

Tables and Figures

Table 1: Overview of variable definitions

	Definition
Dependent variables	
Measures of dividend policies	
DIV	Dummy equal to 1 if a firm paid a dividend in year t, zero otherwise
Div/CF	Total dividends paid in year t over the cash flow in year t-1
Div/E	Total dividends paid in year t over net income in year t-1
Independent variables	
Measures of dividend life cycle	
RE/TE	Retained earnings over the total equity in year t-1
RE/TA	Retained earnings over the total assets in year t-1
Ln_Age	ln(Number of years since the founding of the firm in year t)
Age	Number of years since the founding of the firm in year t
Age^2	(Number of years since the founding of the firm in year t) squared
Control variables	
TE/TA	Total equity over the total assets in year t-1
CASH/TA	Cash and cash equivalents over the total assets in year t-1
L_DIV	Dummy equal to 1 if the firm paid dividend in year t-1, zero otherwise
L_EBITDA/TA	Earnings before interest, taxes, depreciation and amortisation in year t-1 over the total assets in year t-2
EBITDA/TA	Earnings before interest, taxes, depreciation and amortisation in year t over the total assets in year t-1
AGR	(Total assets in year t) – (total assets in year t-1) over total assets in year t-1
SIZE	Natural log of (total assets) in year t-1
d_0_5	Dummy equal to 1 if firms exceeds 0% to 5% above the threshold of legal ability to pay a dividend, zero otherwise
d_5_10	Dummy equal to 1 if firms exceeds 5% to 10% above the threshold of legal ability to pay a dividend, zero otherwise
d_10_20	Dummy equal to 1 if firms exceeds 10% to 20% above the threshold of legal ability to pay a dividend, zero otherwise
d_20_30	Dummy equal to 1 if firms exceeds 20% to 30% above the threshold of legal ability to pay a dividend, zero otherwise
d_30_40	Dummy equal to 1 if firms exceeds 30% to 40% above the threshold of legal ability to pay a dividend, zero otherwise

Table 2: Summary Statistics

Number of firm-year observations, mean, standard error and median for the measures of dividend policies, measures of dividend life cycle, and control variables, for dividend payers and dividend nonpayers in the sample of Belgian, independent, privately held firms for the period 2005-2018. T-statistics show the statistical significance of the difference between the dividend payers and nonpayers for all the variables. All variables are defined and calculated as shown in Table 1.

Variables	Dividend payers				Dividend nonpayers				t-statistics
	N	Mean	SE	p50	N	Mean	SE	p50	
Measures of dividend policies									
DIV	113,468	1	0	1	554,763	-	-	-	-
Div/CF	113,421	0.65	0.77	0.36	553,714	-	-	-	-625.03
Div/E	112,959	1.67	2.24	0.81	545,221	-	-	-	-547.83
Measures of dividend life cycle									
RE/TE	113,468	0.28	0.34	0.06	554,763	0.23	0.36	0.04	-42.31
RE/TA	113,468	0.13	0.19	0.02	554,763	0.10	0.18	0.01	-50.51
ln_Age	113,468	2.93	0.68	2.99	554,763	2.80	0.69	2.89	-57.19
Age	113,468	22.15	15.02	19.00	554,763	19.46	13.11	17.00	-61.39
Control variables									
TE/TA	113,468	0.46	0.24	0.44	554,763	0.42	0.24	0.38	-58.45
CASH/TA	113,468	0.25	0.21	0.19	554,763	0.19	0.19	0.11	-93.65
L_EBITDA/TA	95,901	0.23	0.16	0.19	438,729	0.17	0.14	0.14	-115.71
EBITDA/TA	113,468	0.23	0.16	0.19	554,763	0.16	0.14	0.13	-145.79
AGR	113,468	0.07	0.26	0.03	554,763	0.09	0.29	0.03	16.84
SIZE	113,468	7.20	1.54	7.02	554,763	6.60	1.40	6.48	-129.72

Table 3: Pairwise correlations

* denotes correlation coefficients significant at the 1% level or better. All variables are defined and calculated as shown in Table 1.

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	DIV	1													
2	Div/CF	0.608*	1												
3	Div/E	0.560*	0.819*	1											
4	RE/TE	0.052*	0.043*	0.032*	1										
5	RE/TA	0.062*	0.076*	0.052*	0.842*	1									
6	ln_Age	0.070*	0.060*	0.050*	-0.102*	0.006*	1								
7	Age	0.075*	0.059*	0.047*	-0.095*	-0.005*	0.906*	1							
8	TE/TA	0.071*	0.124*	0.081*	0.066*	0.355*	0.266*	0.229*	1						
9	CASH/TA	0.114*	0.115*	0.074*	0.067*	0.183*	-0.010*	-0.006*	0.421*	1					
10	L_DIV	0.530*	0.179*	0.152*	0.021*	0.013*	0.081*	0.083*	0.010*	0.119*	1				
11	L_EBITDA/TA	0.156*	0.023*	0.008*	0.116*	0.096*	-0.290*	-0.236*	-0.002	0.186*	0.177*	1			
12	EBITDA/TA	0.176*	0.093*	0.072*	0.042*	0.029*	-0.279*	-0.226*	-0.043*	0.132*	0.135*	0.566*	1		
13	AGR	-0.021*	-0.024*	-0.025*	0.032*	0.029*	-0.190*	-0.133*	0.012*	0.020*	-0.040*	0.143*	0.445*	1	
14	SIZE	0.157*	0.085*	0.071*	0.016*	-0.016*	0.358*	0.353*	-0.049*	-0.169*	0.160*	-0.149*	-0.207*	-0.113*	1

Table 4: Retained earnings and the decision to pay dividends

Multivariate logit analyses of the life cycle effect on dividend policy of privately held firms, measured by retained earnings over the total equity (RE/TE) and retained earnings over the total assets (RE/TA). From the time series of fourteen fitted coefficients for the period 2005-2018 we report mean and t- statistics to analyse the probability that private firms pay dividends. In all of the ten models reported, we analyse firm's decision to pay dividends using DIV dummy. All variables are defined and calculated as shown in Table 1. Standard errors are clustered by firm. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

	Mean coefficients from 2005 to 2018, and t-statistics									
Model:	1	2	3	4	5	6	7	8	9	10
RE/TE	0.31***		0.27***		0.25***		0.31***		0.31***	
	(13.42)		(8.98)		(7.31)		(8.00)		(6.84)	
RE/TA		0.83***		0.41***		0.38***		0.50***		0.49***
		(18.89)		(5.60)		(4.53)		(5.78)		(5.02)
TE/TA			0.99***	0.90***	0.54***	0.46***	1.00***	0.88***	0.99***	0.87***
			(11.19)	(8.90)	(6.84)	(4.92)	(12.20)	(9.07)	(11.15)	(8.18)
CASH/TA					1.22***	1.23***	0.43***	0.44***	0.44***	0.44***
					(22.58)	(22.91)	(7.27)	(7.45)	(6.88)	(7.03)
L_DIV							2.87***	2.87***	2.82***	2.82***
							(21.68)	(21.72)	(20.50)	(20.55)
L_EBITDA/TA									-0.22**	-0.19**
									(-2.88)	(-2.60)
EBITDA/TA	4.93***	4.94***	5.08***	5.08***	4.83***	4.84***	3.86***	3.86***	4.15***	4.13***
	(49.78)	(49.90)	(56.51)	(56.68)	(53.75)	(53.87)	(40.16)	(40.38)	(39.60)	(39.71)
AGR	-1.35***	-1.37***	-1.46***	-1.46***	-1.38***	-1.38***	-0.90***	-0.90***	-0.98***	-0.97***
	(-32.51)	(-31.45)	(-28.76)	(-28.84)	(-27.30)	(-27.37)	(-19.22)	(-19.29)	(-18.70)	(-18.78)
SIZE	0.38***	0.38***	0.39***	0.39***	0.41***	0.41***	0.28***	0.28***	0.27***	0.27***
	(32.96)	(32.45)	(30.83)	(30.68)	(33.55)	(33.47)	(30.40)	(30.43)	(26.94)	(26.94)
Constant	-5.20***	-5.23***	-5.68***	-5.64***	-5.87***	-5.83***	-5.66***	-5.61***	-5.58***	-5.52***
	(-37.83)	(-38.65)	(-47.64)	(-47.40)	(-50.34)	(-50.04)	(-45.41)	(-46.25)	(-41.94)	(-42.99)
Pseudo R^2	9%	9%	10%	10%	11%	11%	31%	31%	31%	31%

Table 5: Retained earnings and the dividend to cash flow ratio

Year by year OLS regressions of the life cycle effect on dividend policy of privately held firms, measured by retained earnings over the total equity (RE/TE) and retained earnings over the total assets (RE/TA). We apply Fama and Macbeth (1973) methodology and from the time series of fourteen fitted coefficients for the period 2005-2018 we report mean coefficients and t-statistics. In all of the ten models reported, we analyse firm's dividend to cash flow ratio (Div/CF). All variables are defined and calculated as shown in Table 1. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

	Mean coefficients from 2005 to 2018, and t-statistics									
Model:	1	2	3	4	5	6	7	8	9	10
RE/TE	0.04***		0.03***		0.03***		0.02***		0.03***	
	(14.38)		(6.25)		(5.02)		(5.09)		(7.03)	
RE/TA		0.14***		0.06***		0.05***		0.05***		0.06***
		(8.90)		(4.63)		(3.88)		(4.03)		(4.86)
TE/TA			0.20***	0.18***	0.15***	0.14***	0.16***	0.15***	0.16***	0.15***
			(3.86)	(3.45)	(3.69)	(3.20)	(3.83)	(3.35)	(3.64)	(3.14)
CASH/TA					0.13***	0.13***	0.09***	0.09***	0.11***	0.11***
					(4.57)	(4.59)	(3.19)	(3.21)	(3.43)	(3.45)
L_DIV							0.15***	0.15***	0.16***	0.16***
							(14.39)	(14.45)	(13.01)	(13.07)
L_EBITDA/TA									-0.23***	-0.23***
									(-10.64)	(-10.70)
EBITDA/TA	0.40***	0.40***	0.43***	0.43***	0.40***	0.40***	0.32***	0.32***	0.49***	0.49***
	(23.72)	(23.84)	(23.13)	(23.10)	(23.72)	(23.72)	(17.93)	(17.96)	(19.26)	(19.22)
AGR	-0.10***	-0.10***	-0.11***	-0.11***	-0.10***	-0.10***	-0.08***	-0.08***	-0.11***	-0.11***
	(-13.25)	(-12.87)	(-10.73)	(-10.70)	(-11.60)	(-11.56)	(-8.84)	(-8.81)	(-9.49)	(-9.47)
SIZE	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.02***	0.02***
	(25.07)	(25.79)	(20.46)	(20.89)	(17.21)	(17.53)	(11.64)	(11.83)	(11.58)	(11.77)
Constant	-0.17***	-0.18***	-0.27***	-0.26***	-0.28***	-0.28***	-0.23***	-0.23***	-0.22***	-0.21***
	(-12.97)	(-15.92)	(-16.95)	(-15.97)	(-14.72)	(-13.94)	(-11.20)	(-10.67)	(-10.86)	(-10.24)
Pseudo R^2	4%	4%	5%	5%	6%	6%	9%	9%	9%	9%

Table 6: Retained earnings and dividend policy of large and small firms

We split the sample according to the median SIZE. Firms with a size above the median are classified as large firms, and firms below the median are classified as small firms. We apply Fama and Macbeth (1973) methodology. In models 1, 2, 3 and 4 we run multivariate logit regressions year by year, and from the time series of fourteen fitted coefficients for the period 2005-2018 we report mean coefficients and t-statistics. Standard errors are clustered by firm. The models analyse firm's decision to pay dividends using DIV dummy. In models 5, 6, 7 and 8 we run OLS regressions year by year and from the time series of fourteen fitted coefficients we report mean coefficients and t-statistics. The models analyse firm's dividend to cash flow ratio (Div/CF). All variables are defined and calculated as shown in Table 1. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Sample:	Large firms		Small firms		Large firms		Small firms	
Estimation method:	Year by year logit regressions				Year by year OLS regressions			
Dependent variable:	DIV	DIV	DIV	DIV	Div/CF	Div/CF	Div/CF	Div/CF
Model:	1	2	3	4	5	6	7	8
RE/TE	0.32***		0.30***		0.04***		0.02***	
	-5.93		-6.4		-7.69		-6.8	
RE/TA		0.48***		0.49***		0.08***		0.05***
		-4.6		-4.67		-4.77		-5.18
TE/TA	0.80***	0.69***	1.42***	1.30***	0.17***	0.15**	0.17***	0.15***
	-11.59	-7.82	-9.95	-8.26	-3.36	-2.81	-3.46	-3.15
CASH/TA	0.45***	0.46***	0.39***	0.40***	0.15***	0.15***	0.09***	0.09***
	-5.84	-6.06	-5.56	-5.6	-3.27	-3.3	-3.75	-3.75
L_DIV	2.83***	2.83***	2.80***	2.80***	0.16***	0.16***	0.15***	0.15***
	-21.49	-21.47	-18.51	-18.59	-12.23	-12.25	-12.53	-12.63
L_EBITDA/TA	-0.48***	-0.46***	-0.04	-0.02	-0.40***	-0.40***	-0.14***	-0.13***
	(-4.01)	(-3.87)	(-0.56)	(-0.27)	(-10.32)	(-10.44)	(-9.63)	(-9.57)
EBITDA/TA	4.48***	4.47***	4.27***	4.26***	0.67***	0.67***	0.40***	0.40***
	-32.8	-32.7	-47.94	-48.27	-16.54	-16.51	-15.33	-15.29
AGR	-0.97***	-0.97***	-1.09***	-1.08***	-0.11***	-0.11***	-0.10***	-0.10***
	(-20.66)	(-20.76)	(-11.37)	(-11.37)	(-6.27)	(-6.26)	(-11.13)	(-11.11)
SIZE	0.20***	0.20***	0.48***	0.48***	0.02***	0.02***	0.04**	0.04**
	-9.71	-9.79	-12.6	-12.84	-4.02	-4.07	-2.83	-2.85
Constant	-4.93***	-4.87***	-7.07***	-7.03***	-0.22***	-0.21***	-0.28***	-0.28***
	(-20.91)	(-21.39)	(-32.63)	(-31.89)	(-4.90)	(-4.88)	(-3.25)	(-3.21)
Pseudo R^2	31%	31%	29%	29%	9%	9%	9%	9%

Table 10: Dividend policy and firm age

Life cycle effect measured by the natural logarithm of a firm's Age on dividend policy of privately held firms. In all models, we use OLS regressions and include industry and year fixed effects. For year fixed effects we include 14 year dummies for the period 2005-2018. In Model 1, we show the effects of our variables on a decision to issue dividends measured by dividend dummy (DIV). In Model 2, we show the effects of our variables on the amount of dividends issued measured by dividend to cash flow ratio (Div/CF). T-statistics in parenthesis show the statistical significance for all independent and control variables. All variables are defined and calculated as shown in Table 1. Standard errors are robust, clustered by firms. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Model:	1	2
Estimation method:	OLS	OLS
Dependent variable:	DIV	Div/CF
ln_Age	0.02***	0.01***
	(17.74)	(15.15)
TE/TA	0.06***	0.16***
	(17.01)	(53.73)
CASH/TA	0.18***	0.14***
	(39.38)	(37.86)
EBITDA/TA	0.69***	0.43***
	(116.11)	(82.72)
AGR	-0.14***	-0.10***
	(-77.10)	(-52.21)
SIZE	0.05***	0.03***
	(68.91)	(56.79)
Constant	-0.50***	-0.38***
	(-65.85)	(-72.66)
Observations	668,233	667,136
R^2	11%	8%
Industry FE	YES	YES
Year FE	YES	YES

Table 11: Dividend policy and the effect of legal threshold

Life cycle effect measured by the natural logarithm of a firm's Age on dividend policy of privately held firms. In all models we use OLS regressions and we include industry and year fixed effects. For year fixed effects we include 14 year dummies for the period 2005-2018. In Model 3, we show the effects of our variables on a decision to issue dividends measured by dividend dummy (DIV). In Model 4, we show the effects of our variables on the amount of dividends issued measured by dividend to cash flow ratio (Div/CF). T-statistics in parenthesis show the statistical significance for all independent and control variables. All variables are defined and calculated as shown in Table 1. Standard errors are robust, clustered by firms. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Model:	3	4
Estimation method:	OLS	OLS
Dependent variable:	DIV	Div/CF
ln_Age	0.02***	0.01***
	(17.09)	(14.25)
TE/TA	0.06***	0.16***
	(16.62)	(53.11)
CASH/TA	0.17***	0.14***
	(38.60)	(36.92)
EBITDA/TA	0.68***	0.41***
	(112.50)	(78.63)
AGR	-0.14***	-0.10***
	(-75.74)	(-51.10)
SIZE	0.05***	0.03***
	(68.97)	(56.63)
d_0_5	-0.07***	-0.06***
	(-17.22)	(-22.41)
d_5_10	-0.05***	-0.05***
	(-15.14)	(-18.63)
d_10_20	-0.04***	-0.04***
	(-14.12)	(-22.14)
d_20_30	-0.03***	-0.04***
	(-11.87)	(-21.14)
d_30_40	-0.03***	-0.03***
	(-11.98)	(-17.13)
Constant	-0.49***	-0.37***
	(-63.98)	(-69.98)
Observations	668,233	667,136
R^2	11%	8%
Industry FE	YES	YES
Year FE	YES	YES

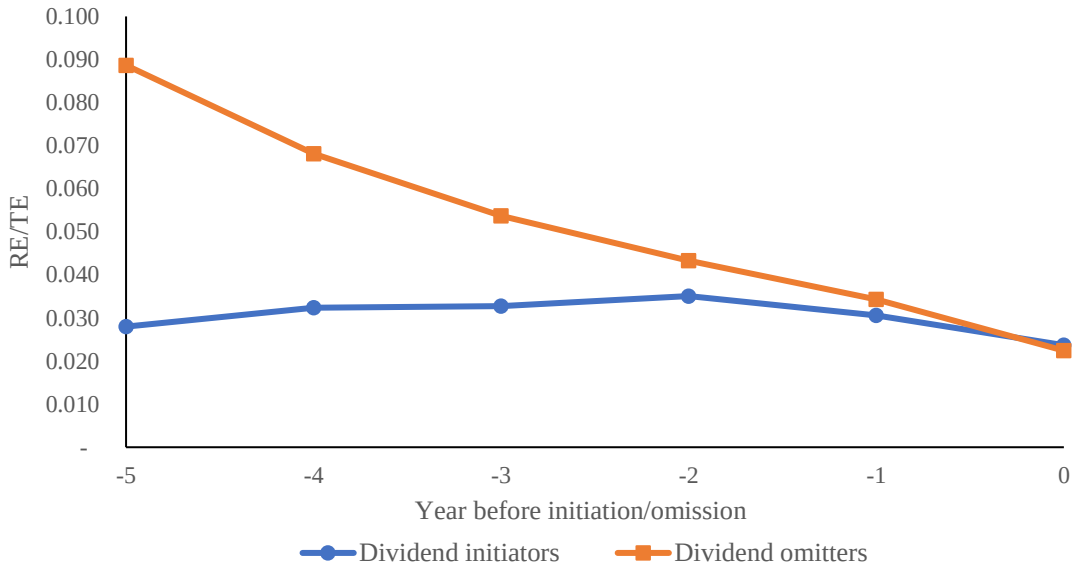

Figure 1
Median retained earnings relative to total equity (RE/TE) over the five years before initiation (omission) for the sample of dividend initiators (omitters). We define a dividend initiator as a privately held firm which paid dividends after having not paid them for five or more consecutive years. We define a dividend omitter as a privately held firm that omitted dividends after paying them for at least five consecutive years. We identified 11,187 dividend initiators during the period (2005-2018)**.** 66 of those firms had initiated dividends twice (after two separate time windows of five years without paying them). Analogously, we identify 3,252 dividend-omitting firms, of which 21 omitted dividend twice during the sample period. For the firms with more than one dividend initiation, the figure shows first dividend initiation. For the firms with more than one dividend omission, the figure includes the last omission.

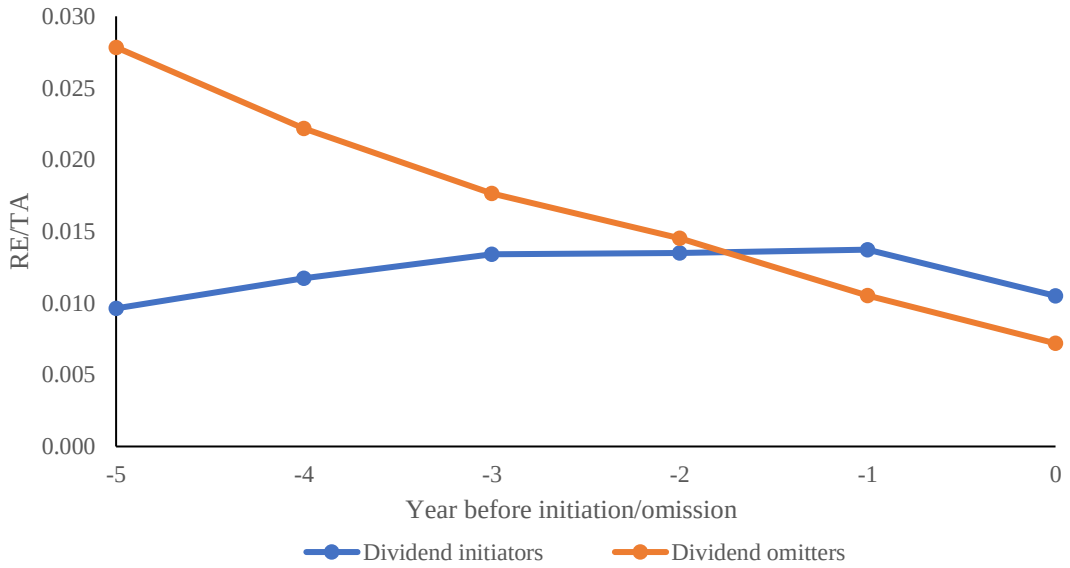

Figure 2
Median retained earnings relative to total assets (RE/TA) over the five years before initiation (omission) for the sample of dividend initiators (omitters). We define a dividend initiator as a privately held firm which paid dividends after having not paid them for five or more consecutive years. We define a dividend omitter as a privately held firm that omitted dividends after paying them for at least five consecutive years. We identified 11,187 dividend initiators during the period (2005-2018)**.** 66 of those firms had initiated dividends twice (after two separate time windows of five years without paying them). Analogously, we identify 3,252 dividend-omitting firms, of which 21 omitted dividend twice during the sample period. For the firms with more than one dividend initiation, the figure shows first dividend initiation. For the firms with more than one dividend omission, the figure includes the last omission.

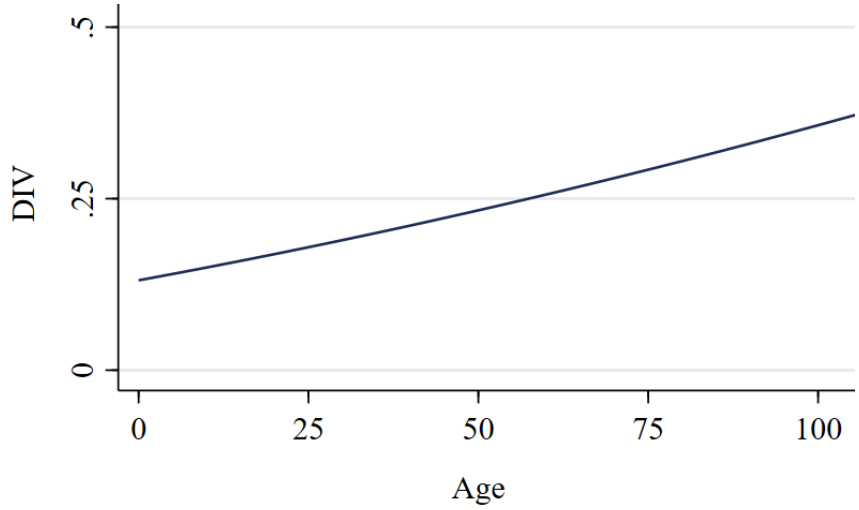

Figure 3
Fitted values of the firm's decision to issue dividend (DIV) from a linear regression on age and age^2.

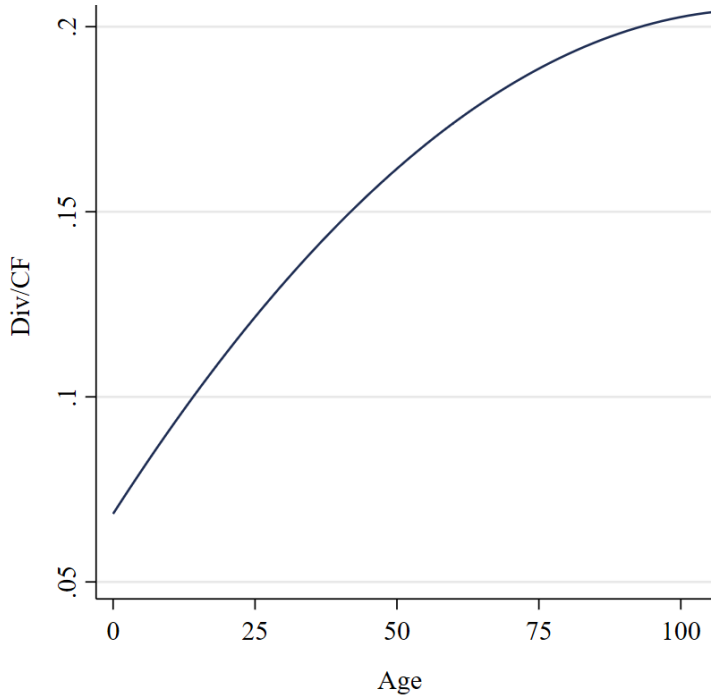

Figure 4
Fitted values of the firm's dividend to cash flow ratio (Div/CF) from a linear regression on age and age^2.

Appendix

This appendix contains the following tables:

Table A.1
Multivariate logit analyses of the effect of RE/TE on DIV for each year separately.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
RE/TE	0.28***	0.36***	0.33***	0.18***	0.23***	0.26***	0.18***	0.02	0.42***	0.60***	0.47***	0.55***	0.20***
	(4.71)	(6.26)	(6.08)	(3.64)	(5.01)	(6.11)	(4.73)	(0.62)	(12.27)	(12.98)	(8.52)	(8.91)	(3.60)
TE/TA	0.80***	0.86***	1.13***	1.13***	1.08***	1.11***	1.36***	1.67***	1.02***	0.81***	0.85***	0.49***	0.52***
	(7.98)	(9.17)	(12.58)	(13.50)	(14.23)	(15.64)	(21.13)	(33.24)	(18.70)	(10.58)	(9.58)	(4.99)	(5.92)
CASH/TA	0.48***	0.29***	0.49***	0.35***	0.52***	0.56***	0.22***	1.07***	0.40***	0.17**	0.34***	0.52***	0.25**
	(3.95)	(2.60)	(4.60)	(3.58)	(5.89)	(6.82)	(3.07)	(18.74)	(6.22)	(2.00)	(3.33)	(4.50)	(2.43)
L_DIV	3.38***	3.27***	3.18***	3.14***	3.04***	2.71***	2.61***	2.08***	1.64***	2.60***	3.09***	3.03***	2.89***
	(77.86)	(78.33)	(80.85)	(86.89)	(88.46)	(84.69)	(90.47)	(77.79)	(64.79)	(77.85)	(76.55)	(69.96)	(67.59)
L_EBITDA/TA	-0.34*	-0.42**	-0.60***	-0.21	-0.29**	0.04	-0.17	0.05	0.35***	-0.09	-0.66***	-0.24	-0.24
	(-1.88)	(-2.36)	(-3.72)	(-1.45)	(-1.99)	(0.29)	(-1.50)	(0.58)	(3.56)	(-0.69)	(-3.86)	(-1.33)	(-1.29)
EBITDA/TA	3.90***	4.31***	4.62***	4.55***	4.58***	4.38***	4.04***	3.29***	4.26***	4.23***	4.16***	3.84***	3.78***
	(19.91)	(22.70)	(26.48)	(27.60)	(29.62)	(30.36)	(30.31)	(31.60)	(36.00)	(27.88)	(22.63)	(18.57)	(20.30)
AGR	-0.68***	-0.86***	-1.04***	-0.97***	-1.02***	-1.08***	-1.03***	-0.96***	-1.27***	-1.25***	-1.09***	-0.82***	-0.65***
	(-6.99)	(-9.01)	(-11.64)	(-10.27)	(-12.08)	(-13.63)	(-13.47)	(-17.15)	(-17.97)	(-12.99)	(-10.12)	(-7.35)	(-6.67)
SIZE	0.26***	0.29***	0.27***	0.29***	0.26***	0.27***	0.31***	0.22***	0.32***	0.28***	0.27***	0.27***	0.18***
	(17.53)	(21.42)	(21.37)	(24.78)	(23.56)	(26.97)	(33.78)	(31.45)	(40.32)	(22.70)	(18.47)	(15.90)	(11.65)
Constant	-5.58***	-5.73***	-5.87***	-5.96***	-5.61***	-5.58***	-5.99***	-4.58***	-5.67***	-5.84***	-5.75***	-5.84***	-4.50***
	(-44.40)	(-49.15)	(-52.79)	(-57.76)	(-58.29)	(-62.93)	(-73.60)	(-73.99)	(-80.13)	(-56.52)	(-45.70)	(-40.64)	(-35.09)
Observations	30,540	31,596	35,013	41,114	43,388	44,306	57,084	57,737	56,241	45,942	34,088	29,413	28,168

Notes: Standard errors clustered by firm. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table A. 2
Multivariate logit analyses of the effect of RE/TE and RE/TA on DIV with industry fixed effects included.

	Mean coefficients from 2005 to 2018, and t-statistics									
Model:	1	2	3	4	5	6	7	8	9	10
RE/TE	0.28***		0.232***		0.22***		0.29***		0.29***	
	(12.60)		(8.06)		(6.60)		(7.73)		(6.59)	
RE/TA		0.78***		0.35***		0.32***		0.46***		0.45***
		(18.30)		(4.83)		(3.93)		(5.48)		(4.77)
TE/TA			1.00***	0.92***	0.56***	0.49***	1.03***	0.92***	1.02***	0.91***
			(10.91)	(8.86)	(6.99)	(5.23)	(12.56)	(9.52)	(11.54)	(8.65)
CASH/TA					1.17***	1.18***	0.38***	0.39***	0.39***	0.40***
					(20.50)	(20.80)	(6.26)	(6.41)	(5.92)	(6.05)
L_DIV							2.86***	2.86***	2.81***	2.81***
							(21.52)	(21.56)	(20.34)	(20.38)
L_EBITDA/TA									-0.16**	-0.14*
									(-2.13)	(-1.87)
EBITDA/TA	5.09***	5.10***	5.23***	5.24***	5.00***	5.00***	3.98***	3.98***	4.23***	4.22***
	(53.36)	(53.38)	(60.32)	(60.60)	(57.82)	(58.06)	(43.41)	(43.71)	(41.41)	(41.56)
AGR	-1.40***	-1.42***	-1.51***	-1.51***	-1.43***	-1.43***	-0.94***	-0.93***	-1.01***	-1.00***
	(-32.58)	(-31.62-	(-28.96)	(-29.06)	(-27.68)	(-27.77)	(-19.74)	(-19.83)	(-18.73)	(-18.82)
SIZE	0.37***	0.37***	0.38***	0.38***	0.40***	0.40***	0.27***	0.27***	0.27***	0.27***
	(38.13)	(37.72)	(35.71)	(35.56)	(38.43)	(38.38)	(34.36)	(34.41)	(31.24)	(31.24)
Constant	-5.940***	-5.96***	-6.34***	-6.36***	-6.52***	-6.49***	-6.123***	-6.08***	-6.06***	-6.02***
	(-33.55)	(-34.02)	(-42.80)	(-43.29)	(-44.44)	(-45.01)	(-38.44)	(-39.20)	(-34.07)	(-34.84)
Pseudo R^2	10%	10%	11%	11%	12%	12%	32%	32%	31%	31%
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: Standard errors clustered by firm. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table A. 3
Year by year OLS regressions and Fama & Macbeth (1973) methodology on the fourteen annual coefficients measuring the effect of RE/TE and RE/TA on Div/CF with industry FE included.

	Mean coefficients from 2005 to 2018, and t-statistics									
Model:	1	2	3	4	5	6	7	8	9	10
RE/TE	0.03***		0.02***		0.02***		0.02***		0.03***	
	(13.49)		(5.45)		(4.43)		(4.57)		(6.47)	
RE/TA		0.14***		0.05***		0.05***		0.05***		0.06***
		(8.55)		(4.17)		(3.53)		(3.74)		(4.55)
TE/TA			0.19***	0.18***	0.15***	0.14***	0.16***	0.15***	0.16***	0.15***
			(3.83)	(3.45)	(3.71)	(3.24)	(3.85)	(3.40)	(3.65)	(3.18)
CASH/TA					0.12***	0.12***	0.08***	0.08***	0.11***	0.11***
					(4.37)	(4.39)	(3.05)	(3.06)	(3.31)	(3.33)
L_DIV							0.15***	0.15***	0.15***	0.15***
							(14.17)	(14.23)	(12.81)	(12.87)
L_EBITDA/TA									-0.22***	-0.22***
									(-11.07)	(-11.13)
EBITDA/TA	0.41***	0.41***	0.44***	0.44***	0.41***	0.41***	0.33***	0.33***	0.49***	0.49***
	(24.78)	(24.86)	(22.34)	(22.30)	(23.99)	(23.97)	(17.94)	(17.96)	(18.61)	(18.58)
AGR	-0.10***	-0.10***	-0.11***	-0.11***	-0.10***	-0.10***	-0.08***	-0.08***	-0.11***	-0.11***
	(-13.05)	(-12.72)	(-10.69)	(-10.66)	(-11.58)	(-11.55)	(-8.87)	(-8.84)	(-9.44)	(-9.42)
SIZE	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.02***	0.02***	0.02***	0.02***
	(21.30)	(21.67)	(16.93)	(17.24)	(14.53)	(14.77)	(10.00)	(10.14)	(9.80)	(9.95)
Constant	-0.20***	-0.21***	-0.31***	-0.31***	-0.32***	-0.32***	-0.27***	-0.27***	-0.27***	-0.26***
	(-13.66)	(-15.16)	(-13.00)	(-12.58)	(-12.17)	(-11.77)	(-9.59)	(-9.28)	(-8.31)	(-7.95)
Pseudo R^2	4%	5%	6%	6%	6%	6%	9%	9%	10%	10%
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table A. 4
Year by year OLS regressions and Fama & Macbeth (1973) methodology on the fourteen annual coefficients measuring the effect of RE/TE and RE/TA on Div/E.

	Mean coefficients from 2005 to 2018, and t-statistics									
Model:	1	2	3	4	5	6	7	8	9	10
RE/TE	0.08***		0.06***		0.05***		0.05***		0.07***	
	(11.87)		(5.76)		(4.81)		(4.88)		(6.90)	
RE/TA		0.27***		0.11***		0.11***		0.10***		0.13***
		(7.48)		(3.80)		(3.27)		(3.36)		(4.15)
TE/TA			0.36***	0.33**	0.28**	0.26**	0.30***	0.28**	0.30**	0.27**
			(3.09)	(2.74)	(3.01)	(2.59)	(3.17)	(2.77)	(2.93)	(2.49)
CASH/TA					0.21***	0.21***	0.12*	0.12*	0.18**	0.18**
					(3.45)	(3.48)	(1.92)	(1.94)	(2.40)	(2.42)
L_DIV							0.38***	0.38***	0.39***	0.39***
							(13.41)	(13.44)	(12.18)	(12.21)
L_EBITDA/TA									-0.64***	-0.63***
									(-13.19)	(-13.27)
EBITDA/TA	0.91***	0.91***	0.96***	0.96***	0.92***	0.92***	0.72***	0.72***	1.17***	1.17***
	(22.56)	(22.54)	(21.90)	(21.82)	(22.87)	(22.83)	(16.88)	(16.87)	(20.50)	(20.46)
AGR	-0.25***	-0.25***	-0.26***	-0.26***	-0.25***	-0.25***	-0.20***	-0.20***	-0.27***	-0.27***
	(-12.23)	(-11.92)	(-10.21)	(-10.18)	(-11.00)	(-10.96)	(-8.34)	(-8.31)	(-9.30)	(-9.27)
SIZE	0.07***	0.07***	0.07***	0.07***	0.08***	0.08***	0.05***	0.06***	0.05***	0.05***
	(22.37)	(22.78)	(18.81)	(19.14)	(15.88)	(16.14)	(10.25)	(10.39)	(9.75)	(9.91)
Constant	-0.35***	-0.37***	-0.53***	-0.52***	-0.56***	-0.55***	-0.44***	-0.43***	-0.37***	-0.36***
	(-10.60)	(-12.64)	(-16.45)	(-15.37)	(-14.03)	(-13.20)	(-10.03)	(-9.49)	(-9.07)	(-8.44)
Pseudo R^2	2%	3%	3%	3%	3%	3%	6%	6%	6%	6%

Notes: ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table A. 5
Year by year OLS regressions and Fama & Macbeth (1973) methodology on the fourteen annual coefficients measuring the effect of RE/TE and RE/TA on Div/E with industry FE included.

	Mean coefficients from 2005 to 2018, and t-statistics									
Model:	1	2	3	4	5	6	7	8	9	10
RE/TE	0.07***		0.05***		0.05***		0.05***		0.07***	
	(11.45)		(5.27)		(4.46)		(4.62)		(6.71)	
RE/TA		0.26***		0.10***		0.10***		0.09***		0.12***
		(7.10)		(3.53)		(3.07)		(3.23)		(4.06)
TE/TA			0.35***	0.33**	0.28**	0.26**	0.30***	0.28**	0.30**	0.28**
			(3.05)	(2.73)	(3.01)	(2.62)	(3.17)	(2.79)	(2.93)	(2.52)
CASH/TA					0.20***	0.20***	0.11*	0.11*	0.17**	0.17**
					(3.22)	(3.24)	(1.78)	(1.79)	(2.26)	(2.28)
L_DIV							0.37***	0.37***	0.39***	0.39***
							(13.23)	(13.26)	(12.02)	(12.05)
L_EBITDA/TA									-0.62***	-0.61***
									(-13.75)	(-13.84)
EBITDA/TA	0.93***	0.93***	0.98***	0.98***	0.94***	0.94***	0.74***	0.74***	1.17***	1.16***
	(23.45)	(23.42)	(21.19)	(21.11)	(23.09)	(23.03)	(16.79)	(16.77)	(19.65)	(19.61)
AGR	-0.25***	-0.25***	-0.26***	-0.26***	-0.25***	-0.25***	-0.20***	-0.20***	-0.26***	-0.26***
	(-12.06)	(-11.79)	(-10.11)	(-10.08)	(-10.95)	(-10.92)	(-8.30)	(-8.27)	(-9.17)	(-9.15)
SIZE	0.07***	0.07***	0.07***	0.07***	0.07***	0.07***	0.05***	0.05***	0.05***	0.05***
	(18.47)	(18.65)	(15.22)	(15.44)	(13.19)	(13.38)	(8.80)	(8.91)	(8.30)	(8.42)
Constant	-0.49***	-0.51***	-0.69***	-0.68***	-0.71***	-0.70***	-0.57***	-0.56***	-0.59***	-0.58***
	(-5.10)	(-5.33)	(-9.99)	(-9.66)	(-11.35)	(-10.90)	(-8.95)	(-8.65)	(-6.00)	(-5.76)
Pseudo R^2	3%	3%	4%	4%	4%	4%	6%	6%	6%	6%
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table A. 6
Dividend policy and firm age – nonlinear effects. Life cycle effect measured by the firm's age and age^2 on dividend policy of privately held firms.

Model:	1	2	3	4
Estimation method:	OLS	OLS	Fixed effects	Fixed effects
Dependent variable:	DIV	DIV	Div/CF	Div/CF
Age	0.00***	0.00***	0.00	-0.01***
	(14.65)	(7.75)	(0.24)	(-6.74)
Age^2		-0.00		0.00***
		(-1.26)		(9.30)
TE/TA	0.07***	0.07***	0.52***	0.53***
	(18.38)	(17.86)	(78.10)	(78.31)
CASH/TA	0.18***	0.18***	0.04***	0.03***
	(39.07)	(39.08)	(5.90)	(5.68)
EBITDA/TA	0.69***	0.69***	0.41***	0.41***
	(116.18)	(115.70)	(59.45)	(59.29)
AGR	-0.15***	-0.15***	-0.09***	-0.09***
	(-78.12)	(-78.22)	(-35.97)	(-35.91)
SIZE	0.05***	0.05***	0.09***	0.09***
	(69.54)	(69.29)	(40.14)	(40.95)
Constant	-0.46***	-0.46***	-0.79***	-0.73***
	(-62.23)	(-61.94)	(-41.81)	(-36.21)
Observations	668,233	668,233	667,136	667,136
R^2	11%	11%	6%	6%
Industry FE	YES	YES		
Year FE	YES	YES	YES	YES
Firm FE			YES	YES

Notes: Standard errors clustered by firm. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table A. 7
Coefficients and t-statistics of OLS and fixed effects regressions on Div/E models.

Model:	1	2	3	4
Estimation method:	OLS	OLS	Fixed effects	Fixed effects
Dependent variable:	Div/E	Div/E	Div/E	Div/E
Age	0.00***	0.00***	-0.00	-0.02***
	(11.33)	(10.40)	(-0.69)	(-5.41)
Age^2		-0.00***		0.00***
		(-5.39)		(6.76)
TE/TA	0.31***	0.30***	1.21***	1.22***
	(40.90)	(39.44)	(68.69)	(68.77)
CASH/TA	0.24***	0.24***	-0.01	-0.01
	(26.56)	(26.79)	(-0.63)	(-0.79)
EBITDA/TA	0.97***	0.97***	0.96***	0.96***
	(76.99)	(77.34)	(51.53)	(51.41)
AGR	-0.26***	-0.25***	-0.22***	-0.22***
	(-48.32)	(-47.80)	(-31.10)	(-31.06)
SIZE	0.07***	0.07***	0.22***	0.23***
	(54.43)	(53.91)	(37.02)	(37.52)
Constant	-0.74***	-0.75***	-1.87***	-1.75***
	(-53.28)	(-53.85)	(-36.07)	(-32.08)
Observations	658,181	658,181	658,181	658,181
Number of firms	113,431	113,431	113,431	113,431
R-squared	5%	5%	4%	4%
Industry FE	YES	YES		
Year FE	YES	YES	YES	YES
Firm FE			YES	YES

Notes: Standard errors clustered by firm. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table A. 8
Coefficients and t-statistics of fixed effects regressions on DIV models.

Model:	5	6
Estimation method:	Fixed effects	Fixed effects
Dependent variable:	DIV	DIV
Age	-0.00	-0.00***
	(-0.09)	(-2.90)
Age^2		0.00***
		(4.00)
TE/TA	0.31***	0.31***
	(56.63)	(56.73)
CASH/TA	0.08***	0.07***
	(15.17)	(15.03)
EBITDA/TA	0.45***	0.45***
	(82.06)	(81.96)
AGR	-0.09***	-0.09***
	(-45.00)	(-44.96)
SIZE	0.09***	0.09***
	(40.76)	(40.76)
Constant	-0.62***	-0.59***
	(-32.64)	(-28.84)
Observations	668,233	668,233
Number of firms	113,881	113,881
R-squared	4%	4%
Year FE	YES	YES
Firm FE	YES	YES

Notes: Standard errors clustered by firm. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table A. 9
Coefficients and t-statistics of logit and fixed effect logit regressions on DIV models.

Model:	7	8	9	10
Estimation method:	Logit	Logit	Fixed effects	Fixed effects
Dependent variable:	DIV	DIV	DIV	DIV
Age	0.01***	0.02***	-0.00	-0.03***
	(15.47)	(11.75)	(-0.50)	(-3.54)
Age^2		-0.00***		0.00***
		(-5.46)		(4.70)
TE/TA	0.53***	0.50***	3.35***	3.37***
	(18.11)	(16.94)	(69.95)	(70.03)
CASH/TA	1.23***	1.24***	0.73***	0.73***
	(38.82)	(39.03)	(15.75)	(15.68)
EBITDA/TA	5.08***	5.11***	5.14***	5.13***
	(122.97)	(122.63)	(96.56)	(96.48)
AGR	-1.42***	-1.41***	-1.24***	-1.23***
	(-68.35)	(-67.98)	(-50.05)	(-50.01)
SIZE	0.37***	0.37***	0.97***	0.98***
	(71.66)	(71.26)	(50.02)	(50.12)
Constant	-6.47***	-6.53***		
	(-89.96)	(-90.13)		
Observations	668,223	668,223	301,512	301,512
Number of firms	113,880	113,880	35,570	35,570
Pseudo R2	12%	12%	9%	9%
Industry FE	YES	YES		
Year FE	YES	YES	YES	YES
Firm FE			YES	YES

Notes: Standard errors clustered by firm in models 7 and 8. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table A. 10
Multivariate logit analyses of the effect of RE/TE and RE/TA on DIV for the full sample of privately held firms, including the firms that are not legally allowed to pay dividends.

	Mean coefficients from 2005 to 2018, and t-statistics									
Model:	1	2	3	4	5	6	7	8	9	10
RE/TE	0.69***		0.60***		0.58***		0.47***		0.49***	
	(44.22)		(41.41)		(40.12)		(20.80)		(18.77)	
RE/TA		1.63***		1.10***		1.04***		0.95***		0.91***
		(48.82)		(22.57)		(18.51)		(13.58)		(11.59)
TE/TA			1.15***	1.08***	0.68***	0.62***	1.08***	0.98***	1.06***	0.96***
			(12.52)	(10.60)	(8.35)	(6.67)	(12.23)	(9.78)	(10.96)	(8.67)
CASH/TA					1.29***	1.31***	0.48***	0.49***	0.51***	0.51***
					(24.96)	(25.60)	(8.26)	(8.38)	(8.07)	(8.13)
L_DIV							2.93***	2.97***	2.89***	2.91***
							(22.75)	(23.17)	(21.91)	(22.24)
L_EBITDA/TA									-0.27***	-0.15**
									(-3.84)	(-2.03)
EBITDA/TA	5.03***	5.02***	5.17***	5.16***	4.93***	4.92***	4.06***	4.04***	4.33***	4.24***
	(52.43)	(54.27)	(59.72)	(61.68)	(56.92)	(58.79)	(42.59)	(43.90)	(40.08)	(40.49)
AGR	-1.28***	-1.28***	-1.40***	-1.39***	-1.33***	-1.31***	-0.87***	-0.86***	-0.93***	-0.91***
	(-35.61)	(-34.16)	(-30.30)	(-30.29)	(-28.76)	(-28.81)	(-20.07)	(-20.31)	(-19.04)	(-19.01)
SIZE	0.38***	0.40***	0.39***	0.40***	0.41***	0.42***	0.28***	0.29***	0.27***	0.28***
	(35.44)	(34.91)	(32.14)	(32.08)	(35.54)	(35.50)	(32.43)	(33.23)	(28.55)	(29.26)
Constant	-5.45***	-5.57***	-5.94***	-5.99***	-6.14***	-6.20***	-5.90***	-5.93***	-5.80***	-5.82***
	(-42.22)	(-42.97)	(-50.94)	(-50.02)	(-54.25)	(-53.22)	(-50.71)	(-51.18)	(-47.56)	(-48.21)
Pseudo R^2	12%	11%	13%	12%	14%	13%	34%	27%	33%	33%

Notes: Standard errors clustered by firm. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.