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DIVIDEND POLICY OF SMEs: A VARIANCE DECOMPOSITION APPROACH

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Abstract:

Previous research on dividend policies in privately held firms has been largely focused on the determinants of dividend policies which are identified at the firm-year, firm, and industry levels. Studying these effects in isolation would, however, provide an incomplete picture of the overall drivers of dividend policy. In this study we go a step further by analysing these effects simultaneously by applying a variance decomposition method to explore how much each level of the analysis contributes to dividend policy of Small and Medium Sized Enterprises (SMEs). Based on a sample of 110,050 Belgian SMEs, our data reveal that firm-year and firm-level differences explain most of the variance of dividend policies which is in line with the resource based theory. Industry-level differences and region differences matter very little for dividend policy of SMEs.

Keywords: Dividend policy, SMEs, Variance decomposition

1. Introduction

Factors which drive dividend decisions keep to puzzle scholars even more as they are a phenomenon also common among privately held firms, specifically SMEs. However, it is still relatively little known about the dividend decisions of SMEs, which are the most important firms in the economy, and globally the most dominant type of firm (Gao, Hsu & Li, 2018). For example, in Belgium they account for 99.9 percent of all firms, employing 65 percent of working population and producing almost 60 percent of national GDP[1]. Despite their importance, little is known about their dividend policies. Dividends are mainly regarded as a financial decision of a large, mature, profitable and listed firms (Brockman and Unlu, 2011; DeAngelo, DeAngelo and Stultz, 2006; Fama and French, 2001). However, many privately held firms pay out dividends as they are a source of cash for the rather illiquid private firms' shares (Berzins, Bøhren, and Stacescu, 2018, 2019). Few studies found dividend payouts of private firms to be more erratic, less smoothed and lower than in listed firms (Michaely and Roberts, 2012; Rommens, Cuyvers and Deloof, 2012). In this study, we dwell deeper on which factors account for the most of the variation among dividend policy of SMEs by decomposing its variance on firm-year, firm, industry and region level effects that affect dividend decision of SMEs.

Few studies of dividend policy of privately held firms together with an extensive literature of dividend policy of listed firm identified different factors that significantly affect managers decision on whether and which amount of dividend to pay out. Drivers of dividend payouts are, for instance, profitability, leverage, earned-contributed capital mix, agency costs, ownership structure (Berzins et al., 2018, 2019; Brockman and Unlu, 2011; DeAngelo, et al., 2006; Fama and French, 2001; Michaely and Roberts, 2012, Michiels, Voordeckers, Lybaert et al., 2015). These studies mainly focused on firm level determinants of dividend payout decisions.

[1] Data are for the year 2019, retrieved from Eurostat (https://ec.europa.eu/eurostat/web/structural-business-statistics/small-and-medium-sized-enterprises)

However, untangling the dividend phenomena by observing only one or few factors in isolation provides an incomplete picture of the underlying mechanisms that drive the differences in firm's dividend decisions (Erkan, Fainshmidt, Judge 2016). Moreover, many of the underlying theories are tested on listed firms and do not explain the dividend policy of private firms. Dividends provide liquidity and diversification for private firm owners. A private firm has rather dividends as a source of cash instead of capital gains due to the illiquidity of shares (Fitza and Tihanyi, 2017). Without the obligation to disclose information to the financial markets, private firms have a competitive advantage by shielding their strategies. In this paper we will untangle a part of their strategy by analysing how a range of different effects actually "matter" in explaining the variation in their dividend decisions. We therefore examine the relative contribution of firm-year, firm and industry effect to the total variance of dividend policy of SMEs.

Furthermore, we account for the region effects, as additional level which could contribute to the variance of dividend policy. Previous studies found that different regional development within one country significantly matter for firm financial policies (see e.g. Chan, Makino and Isobe, 2010; Deloof and La Rocca, 2015; Guiso, Sapienza, Zigales, 2004), survival of SMEs (Arcuri and Levratto, 2020), capital structure (La Rocca, La Rocca and Cariola, 2010). This is the first paper to look whether these differences affect dividend policy of SMEs. Belgium is suitable to test a significance of region effects because it provides diverse setting with within different formal and informal institutions. Heterogeneous macroeconomic environment is reflected through three different regions and eleven provinces which could lead to different decisions among differently located SMEs.

We contribute to the scarce literature on dividend policy of SMEs by breaking down the variance on four different levels and we hypothesise these effects have the significant influence on the total variation of dividend policy. Furthermore, we account for previously overlooked region effects and argue that they should contribute to the meaningful variation in dividend

policy of SMEs. Culture also plays an important role in firms' dividend strategies and significantly affect the levels of dividends paid (Bae, Chang and Kang, 2012; Erkan et al., 2016; Fidrmuc and Jacob, 2010). Taking into regard the diversity in both formal and informal, cultural differences within Belgium we examine whether and to what extend they matter for dividend policy of SMEs. We , therefore, shed light on the factors driving the dividend decisions of SMEs.

Dividends and their significant factors have been studied quite thoroughly, but no one has yet studied the contribution of each effect to dividend payouts of privately held firms. To do so we apply a variance decomposition methodology, specifically Hierarchical linear modelling (HLM). We analyse the relative importance of firm-year, firm, industry and region effects on the heterogeneity of dividend policy. Since Schmalensee (1985) pioneered with his study on the variance decomposition of firms profitability into components associated with year, industry, the corporate-parent, and business-specific effects, this method found a wide application in strategic management (Fitza, 2014; McGahan and Porter, 2002; Rumelt, 1991) and international business studies (McGahan and Victer, 2010). These studies drove the attention on the importance of looking into factors inherent to industry and country levels where firms operate and interact. Over the years, in addition to these other relevant effect levels were identified, such as accelerators (Chan, Patel and Phan, 2020), a CEO (Withers and Fitza, 2017), business models (Sohl, Vroom and Fitza, 2020), an ownership (Fitza and Tihanyi, 2017) and others. By applying the variance decomposition method on dividend policy, we contribute to this literature which has been focused on the factors driving the variance of firm performance.

We simultaneously decompose the variance of the dividend policy of 110,050 Belgian SMEs during 14-year period, at each level of the analysis. We observe alternative measures of dividend policy, namely, whether SMEs decides to pay a dividend, dividend dummy, dividend to assets ratios, dividend to cash flow and dividend to earnings ratio. We find that not all levels

are important for dividend decisions of SMEs. The most important are the firm-year and firm effects, while the industry and region level effects were less important in our data. Specifically, firm-year level effects account for 47–67 percent, and firm effects account for 32-56 percent of the variance in dividend payouts. Industry play only a minor role as a determinants of the dividend policy of SMEs. However, we find that these effects are statistically significant and should not be ignored for dividend decisions. In addition, to these effects we find that regions account for a limited variation in dividend to cash flow and dividend to earnings ratios, up to 2% of the total variance. Finally, we analyse whether there are differences in the relative contribution of these four levels for different types of firms. Our results stay consistent for the sample of small and micro firms, new and more established firms as well as when we use three level HLM.

The remainder of the paper is organized as follows. In Section 2 we summarize dividend literature and derive our hypotheses. Section 3 describes the data, methodology and variables. Section 4 discusses the results and we conclude in Section 5.

2. Theoretical framework

2.1 Firm year effect

SMEs have a more erratic dividend policy than listed firms, whereby they are less reluctant to cut dividends and smooth dividends significantly less (Michaely and Roberts, 2006). Listed firms smooth dividends when they target a long term payout ratio to provide a consistent stream of dividends from year to year. Dividend smoothing helps to avoid the negative reactions by market participants or shareholders (Cejnek, Randl and Zechner, 2021; Leary and Michaely, 2011; Wu, 2017). However, SMEs with few external investors have less motives to signal the state of the firm (Michaely and Roberts, 2006; Rommens et al., 2012). Lack of market scrutiny in this sense provides more flexibility and discretion to SMEs which should eventually lead to more variation in their dividend policy over the years. To cut or reduce dividend amounts in

times of a crisis such as during the recent pandemic could ensure these firms an additional source of liquidity and a cushion in times of uncertainty (Krieger, Mauck and Pruitt, 2021).

Recent work shows that the life cycle of privately held firms significantly affects their propensity to pay dividends, and the amounts paid (Cadenovic, Deloof and Paeleman, 2022). As privately held firms mature, grow and retain more of their profits, they are more likely to initiate and provide a dividend payout. Previous scholars on dividend policies acknowledge that dividend payers are more likely to be larger and mature firms, while dividend nonpayers are often young and growing firms with abundance of profitable investment opportunities to exploit (Brockman and Unlu, 2011; DeAngelo et al., 2006; Fama and French, 2001; Grullon, Michaely and Swaminathan, 2002). Contrary to negative effect of growth on dividend policy, reputation building theory proposes arguments on a positive effect whereby relatively higher growth firms pay higher dividends (Flavin and O'Connor, 2017). In general, whether there are appealing growth opportunities for a firm, both shareholders and firm managers prefer reinvestment for the sake of the higher payouts in the future. This heterogeneity in dividend policy are, indeed, highly driven by the changing firm characteristics over time which eventually decide SMEs to initiate or cut dividends.

Therefore, multiple perspectives expect that dividend payouts vary over time within the same firm and we expect that firm-year level factors may explain meaningful variance in the dividend policies of privately held SMEs. Thus,:

Hypothesis 1: A significant portion of variation in dividend payout policies of SMEs is attributable to firm-year specific effects.

2.2 Firm effect

Existing literature mostly focuses on how firm characteristics impact dividend policies. Scholars have shown that they are the most important determinant of dividend variation among

listed firms (Erkan et al., 2016), while there is a lack of evidence to what degree dividends of SMEs vary due to firm specific factors. Resource-based theory, in general, claims that firms differ from each other by the way managers allocate resources and capabilities resulting in different strategies (Barney, 1991). Financing policies such as cash, profitability, debt and growth opportunities are found to be both statistically significant and economically important for dividend policy in listed firms (Brockman and Unlu, 2011; DeAngelo, DeAngelo and Stultz, 2006; Fama and French, 2001) and in privately held firms (Cadenovic, Deloof and Paeleman, 2022; Michiels, Voordeckers, Lybaert and Steijvers, 2015). Privately held firm's cash, profitability, size and age increase the likelihood of paying out dividends, while debt and investment opportunities discourage paying out dividends (Cadenovic et al., 2022). Managers are in control over the future free cash flow and they are often pressured by firm shareholders "not to sit on the cash" but distribute it in the form of dividends. Free cash flow theory suggests that excess cash directs managers toward the low return projects, and proposes debt as a substitute for dividends to prevent managers in wasting cash (Jensen, 1986). Nevertheless, more debt will incur higher bankruptcy risk and higher interest rates. Private firms must pay higher borrowing costs than public firms (Campello, Giambona, Graham, and Harvey, 2011; Saunders and Steffen, 2011). For SMEs that excessively rely on debt as a source of funding (Berger and Udell, 1998; Deloof et al., 2015; Hanssens et al., 2016; La Rocca et al., 2010;) this implies they will give the priority in servicing loans and refrain from paying out dividends while in the same time creditor contracts restrict distribution of dividends (Borckman an Unlu, 2009). SME's debt policy thus significantly determine their dividend policy.

Differences in ownership structures of privately held SMEs might also influence their dividend policies. Traditionally, scholars view dividends as a tool to limit the rent extraction by controlling shareholders, where they commit to pay the dividends to all shareholders (Faccio, Lang and Young, 2001; La Porta et al., 2000; Rommmens et al., 2012). In privately held firms with a few outside shareholders, where the roles of owner and manager are often not

separated, dividends can serve as a conflict-reducing tool between controlling and minority shareholders, and a tool to attract minority investments (Berzins, Bøhren, and Stacescu, 2018). Controlling shareholders of privately held firms could use dividends intentionally to build the trust and "reputation for fairness". Higher equity stakes represent a higher potential for conflicts which, in contrast to opportunistic theory, will induce firms to pay higher dividends. Eventually, this will attract more minority investments in the firm (Berzins et al., 2018). In addition, privately held firms with less shareholders cut dividends more often than those with more dispersed ownership (Michaely and Robert, 2006). Similarly, fully owned firms, without minority shareholders, pay fewer dividends, while privately held firms that are part of the group pay more dividends than independently owned firms (Rommens, Cuyvers and Deloof, 2012). Scholars also showed that intra-familial, principal–principal conflicts within privately held family firms lead to a higher likelihood of paying out dividends (Michiels, Voordeckers, Lybaert et al., 2015). These findings strongly suggest that a considerable variation among dividend policy is due to the specific firm level ownership structure. Based on the previous findings and theory, we expect that firm level factors may explain meaningful variance in the dividend policies of privately held SMEs. Thus, :

Hypothesis 2: A significant portion of variation in dividend payout policies of SMEs is attributable to firm specific effects.

2.3 Industry effect

Firms tend to strategically cluster within industries to improve their competitive advantage and performance (McNamara, Aimeand and Vaaler, 2005). Firms are economically bounded at the industry level as they serve the same customers and compete for the financial and human capital (Grennan, 2019). In a dividend context, firms tend to behave similarly, whereby peer effects are reflected through variations in firms' behaviour as a response to industry behaviour

(Grennan, 2019). Industry players 'execute' a shared reality regarding strategic decision-making processes (Van Caneghem and Aerts, 2011).

Growth potential of a firms depends on the growth prospects of the industry it is operating in. Early work of Baker (1988) and Michel (1979) show there is a significant variation in dividend payouts of listed firms operating in different industries. Dempsey, Mlaber and Rozeff (1993) build on their findings and argue whether industry effect persist over time. Authors found the effect, however only in few industries was persistent over time. Firms operating in a capital intensive industry are expected to provide less dividends than in a labour intensive industry, such as services (Manneh and Naser, 2015). Since more funds are needed for capital investments than for paying employees, those firms would refrain from paying dividends. Private firms have a competitive advantage compared to their listed peers due to nondisclosure requirements, which shields their strategies. This could reflect in smaller industry effects on their dividend policy. Moreover, a niche market or a dominant position in a smaller part of the market can be appealing to private firms (Ebben and Johnson, 2005) which further could reduce the industry effect due to lower competition.

Firms often make dividend decisions by replicating direct competitors within an industry, which Van Caneghem and Aerts (2011) call intra-industry conformance effect in dividend policies. These authors argue that the firms in their sample of US large, listed firms are more likely to pay dividends if they are active in an industry with a high density of dividend paying peers, where individual dividend payout levels tightly follow the industry average payout. However, current empirical work is lacking onto what extent industry effects matter for dividend policy of SMEs. We expect that “shared reality” in a specific industry, thus, shared systematic risk significantly contributes to the overall variation in dividend policies. For example, due to a trade-off between persistent dividends and exploitable investment opportunities, we could expect that a SME would change its dividend policy as investment opportunities change in a particular industry. For example, the fast growing technology sector

induced many firms to forgo dividends and pursue investment opportunities (see: DeAngelo, DeAngelo and Skinner, 2004; Denis and Osobov, 2008). As industry matures overall it further increases the chances of all its firms to opt for distribution. Furthermore, SMEs could compete for outside investors by providing regular dividends. Using a large international sample of listed firms, Javakhadze, Ferris and Sen (2014) find a strong positive effect of industry competitiveness and dividend smoothing. These authors argue that as competitiveness in an industry declines, firms smooth dividends less, suggesting that firms use dividends to distinguish from the peers when attracting new investors. The same effect could be incorporated in an overall industry level effect driving the variation in dividend policy of SMEs due to their more limited access to external capital in compare to listed firms. Javakhadze et al, (2014) also find that industry opacity is inversely related to dividend smoothing, which means that increased information asymmetry in an industry decreases dividend smoothing. Overall, based on these arguments, industry level effects are found to be relevant in explaining the variation of dividend policy and we aim to measure its proportion for dividend payout policies of SMEs. Finally, variation in dividend policy of listed firms created by industry peers (Massa, Rehman and Vermaelen, 2007) is known as a payout wave (Farre-Mensa, Michaely, and Schmalz, 2014). However, this evidence does not explain whether the phenomena could be found among dividend policy of SMEs, and we lack the knowledge whether they conform or dilute with the industry average. Nevertheless, we expect that industry level factors may explain meaningful variance in dividend policies of privately held SMEs. Thus, :

Hypothesis 3: A significant portion of variation in dividend payout policies of SMEs is attributable to industry specific effects.

2.4 Region effect

Different regions within a country represent a different economic environment with relatively homogenous formal and informal institutions. Regions are territorially and institutionally bounded and those boundaries have the autonomous power to shape their development (Chan, Makino and Isobe, 2010). A within country local financial system is found to significantly affect the financial policies of privately held firms (Deloof et al., 2019; Deloof and La Rocca, 2015; La Rocca et al., 2010). Different regions within one country significantly affect SMEs' access to debt, determine their use of trade credit (Deloof and La Rocca, 2015; La Rocca et al., 2010), and cash holdings (Fasano and Deloof, 2019). Local financial development decreases bankruptcy chances of medium-sized firms and increases access to credit for small firms (Arcuri and Levratto, 2020). However, evidence on how different regions (with their own characteristics) within one country influence dividend policies of SMEs is limited. Previous scholars found that country-specific regulations such as tax policies (see: Berzins, Bøhren, and Stacescu, 2018; 2019) significantly affect dividend policy of privately held firms. Institutions not only vary substantially between countries, but also within them (Chan et al., 2010). Firms tend to concentrate in the locations where institutional and financial development is favourable and create investment opportunities. Local financial development is positively related to growth opportunities (Guiso, Sapienza and Zingales, 2004) and growth further affects dividend policy of privately held firms (Cadenovic et al., 2022). In a less developed financial environment with limited access to debt, privately held firms will have to keep more precautionary cash (Fasano and Deloof, 2021) which could have as a consequence a decreased ability to provide dividends. Persistent influence of regions on firm performance found among listed firms (Chan et al., 2010) evokes the question to what extent regions affect SMEs.

Besides formal institutions, national culture plays an important role in firms financial decisions and economic outcomes (Guiso, Sapienza and Zingales, 2006). National culture effect is widespread, from its effect on the protection of creditor's rights (Stulz and Williamson,

2003), corporate governance (Licht et al., 2005), investor's risk aversion (Frijs, Gilbert, Lehnert et al., 2013; Hilary and Hui, 2009). Few scholars observed national culture as a significant factor that affects manager's decisions. Namely, national culture shapes the manager's perception of agency and information asymmetry problems within a firm (Javakhadze et al., 2014), while shareholders shape their preferences according to their cultural values. Their perception, thus, transfers on firm's dividend decisions and creates a significant effect of national culture on dividend policy (Javakhadze et al., 2014; Shao, Kwok and Guedhami, 2010). Indeed, Shao et al. (2010) suggest that pronounced social trait such as conservatism, where investors value more family security and the harmonious relationships with managers and choose low risk assets, positively affect dividend payouts. On the contrary, a mastery, treat depicting more independent societies where managers and shareholders favour investing cash in future growing opportunities, lowers dividend payouts (Shao et al., 2010). Similarly, cultural individualism and masculinity increase dividend smoothing (Javakhadze et al., 2014). However, all these studies lack the evidence on the within country, national differences in social treats and their effect on dividend policy. We address this question and investigate to what extent dividend policy of SMEs varies across different regions in Belgium where SMEs operate in three culturally and administratively diverse regions with their own language, government, legislation and independent decision making.

Overall, we expect that region level factors may explain meaningful variance in dividend policies of privately held SMEs. Thus, :

Hypothesis 4: A significant portion of variation in dividend payout policies of SMEs is attributable to within country, region effects.

3. Data, Variables and Methods

3.1 Sample

We test our hypotheses on a sample of independent, privately held Belgian SMEs between 2005 and 2018. We collect data from the Bel-First database maintained by Bureau van Dijk (BvD), a Moody's Analytics company, and one of Europe's leading electronic publishers of business information, which offers electronic access to detailed yearly financial statements of all Belgian firms (Paeleman, Fuss and Vanacker, 2017). First, we selected Belgian privately held SMEs. Following the EU definition, SMEs are those that employ less than 250 full time employees and that report annual turnover of less than 50 million euros (and/or annual balance sheet total less than 43 million euros) (European Commission, 2015). Second, we excluded financial and utility firms as those are subject to different government regulations (e.g., Allen and Michaely, 2003; Berzins et al., 2018; DeAngelo et al., 2006; Grullon and Michaely, 2002). Third, we also excluded 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. Fourth, we selected firms with minimum one employee to eliminate "ghost" firms and we considered only those firms with positive total equity (e.g., DeAngelo et al., 2006; Hasan and Cheung, 2018; Owen and Yawson, 2010). Fifth, we exclude firm-years when the firm is not legally allowed to pay a dividend according to Belgian legislation. Belgian firms cannot 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 (De Backer et al., 2014). Finally, we deleted firms with less than three firm-year observations, to enable us a reliable variance decomposition estimation (Erkan et al., 2016; Goldszmidt, Brito, and Vasconcelos, 2010). Our sampling procedure results in an unbalanced panel of 800,049 firm-year observations nested in 110,246 Belgian, independent SMEs, allowed to pay dividends, operating in 514 different 4-digit NACEBEL industry codes (64 different 2-digit NACEBEL industry codes) and located in three regions (including 11 different provinces) for

the period between 2005 and 2018.[2] All variables used in this study are based on unconsolidated financial statements.

3.2 The Belgian context

In this paper we focus on the Belgian context. Belgium consists of eleven different provinces in which SMEs are nested and operate (including Antwerp, Walloon Brabant, Brussels, East-Flanders, Hainaut, Liège, Limburg, Luxembourg, Namur, Flemish Brabant and West-Flanders). Together they form three wider Belgian territory regions: the Flemish Region, the Brussels-Capital region and the Walloon Region. All provinces are administratively independent and exercise their power autonomously. However, the power is bounded to the province and its interests while higher authorities are in place for the general, federal state interests. Language and culture also differ significantly. These three independent regions have their own government and legislation and independent decision making upon matters such as culture, education, language etc. Therefore, these three unique cultural groups, with different language and independent decision making form a diverse setting in Belgium which allows us to investigate the effect of region effects (and as such different formal and informal institutions) on the dividend policy of differently located SMEs. Firstly, we decompose the variance on a province level because we expect that provinces proxy better for economic differences compared to the three wider Belgian territory regions. In addition, we conduct a robustness analysis where we account for three different and wider defined regions where cultural differences could play a more important role in driving differences in financial behaviour of firms.

3.3 Variables

We decompose, break down, the variation of dividend policy. We use different measures of dividend policy. Consistent with prior research (Brockman and Unlu, 2011; DeAngelo et

[2] We collected 2004 data to calculate the lagged variables for the initial year 2005 in our data.

al., 2006; Erkan et al., 2006; Fama and French, 2001; Michiels et al., 2015; Rommens et al., 2012; Shao et al., 2010), we measure dividend policy by using a dummy *DIV*, which is equal to one if the firm pays dividends in year t and zero otherwise. Second, we use the dividend to total assets ratio, *Div/TA*, which is equal to total dividends paid in year t over the total assets in year t (Rommens et al., 2012; Shao et al., 2010). Third, we use the dividend to cash flow ratio, *Div/CF*, which is dividends paid in year t scaled by cash flow in year t-1 (Faccio et al., 2001; La Porta et al., 2000; Rommens et al., 2012). Fourth, we use the dividend to earnings ratio, *Div/E* which is dividends paid in year t over net income in year t-1 (Berzins et al., 2018, 2019; Faccio et al., 2001). Definitions of all variables are summarized in the Table 1.

Insert Table 1 here

We include four independent variables to examine the heterogeneity in dividend policy. The *Firm-year* effect accounts for the amount of variation across the 14-year period studied between 2005 and 2018 of dividend policy of SMEs. The year of observation reflects the firm-year effect. The *Firm* effect denotes the portion of the variance in dividend policy that can be attributed to the differences among the SMEs themselves. We use a unique ID code for each firm. The *Industry* effect denotes the portion of the variance in dividend policy attributable to the differences among 4-digit NACEBEL industries in which the SMEs operate. In addition, we use 2-digit NACEBEL industry codes in the robustness analysis. Finally, the *Region* effect that accounts for the portion of differences among dividend policy of SMEs operating in different regions in Belgium. We use two different measures to capture the effect of region. In our main analysis we use eleven different provinces in Belgium to capture the effect of different economic prospective for firms registered in these provinces. In the robustness analysis we use three wider regions Flanders, Wallonia and Brussels.

3.4 Variance decomposition analysis

Several techniques have been used throughout the literature in decomposing the variance of firm financial policies, for example: standard errors (SE), nested analysis of variance (ANOVA) or variance components analysis (VCA) (i.e. McGahan and Porter, 2002; McGahan and Victer, 2010; Schmalensee, 1985; Short et al., 2007). However, research found several drawbacks of these methods (see Misangyi, Elms, Greckhamer et al., 2006 for a detailed overview). For example, ANOVA does not account for an order in which effects are analyzed, and which in turn can affect the results. In addition, it has difficulties in estimating the size of effects. Hierarchical linear modelling (HLM) technique, on the other hand, enables us to directly and simultaneously estimate the portion of the variance accounted for each level of nesting in the data (Chan et al., 2010; Erkan et al., 2016). Namely, HLM estimates how much each level of analysis contributes to the overall variance in dividend policy of SMEs. The main advantage is that it addresses the lack of the independence between the effects (Misangyi et al., 2006). We hypothesise that the dividend policy of SMEs vary significantly at four different levels, namely, firm-year, firm, industry and region levels. Therefore, these levels in sum account for the total variance of dividend policy. The model we apply is an empty, intercept-only model, which does not incorporate any explanatory variable within levels. In this study, we simply break down the variance without specifying any of the variables that explain it.

Multilevel models, unlike standard linear models, assume that intercepts and slopes of the units of analysis (in our case SMEs) vary across the levels (in our case firm-year, firm, industry or region). In our study, this means that intercept for dividend policy is different for different SMEs, years or industries. Therefore, these coefficients are random which the HLM model aims to explain (Erkan et al., 2016). Varying intercepts will move the average value for the entire level of analysis, while different slopes indicate that the relationship between the dependent and independent variable is not the same across the level (Hox, Moerbeek and Schoot, 2018). This arises from the assumption that the units from the same group will be more similar to each other than to units in another group. This assumption is valid because, for

instance, firms operating in the same industry are more similar to each other, than to firms active in another industry. As a result, the average correlation (the so-called intraclass correlation) between variables measured in SMEs from the same industry will be higher than the average correlation between variables measured in SMEs from different industries. Standard statistical tests that rely on the assumption of independent observations will, thus, not hold, and that is always the case for nested data (Hox et al., 2018). Therefore, in this study we assume that dividend policy of SMEs operating in the same industry will be more similar to one another than to dividend policy of SMEs from another industry and we, thus, hypothesize that industry significantly matters in explaining the variation of dividend policy. This is the main advantage of the multilevel model which allows modelling the random effect on the outcome variable for each level of the data hierarchy (Hough, 2006), i.e., dividend policy differences within the firms across the years, dividend policy differences between firms, differences between firms within industries and differences between firms within same regions.

It is important to note that in the Tables 3-9 we decompose the variance of the intercept only model, namely the variance of the averages of dividend measures while imposing no explanatory variable to observe whether they explain that variation. Thus, we acknowledge that the average dividend policy differs from firm to firm, industry to industry, and from region to region. By specifying a simple OLS regression equation with the one effect in isolation we would ignore this heterogeneity. Following the previous literature on variance decomposition methods (e.g. Chan et al., 2010; Erkan et al., 2016; Short, Ketchen, Palmer et al., 2007) we define four different levels, decomposed as follows:

Level 1 model:

$$Dividend\ policy_{ijkl} = \alpha_{0jkl} + e_{ijkl}$$

Level 2 model:

$$\alpha_{0jkl} = \beta_{00kl} + r_{0jkl}$$

Level 3 model:

$$\beta_{00kl} = \gamma_{000l} + u_{00kl}$$

Level 4 model:

$$\gamma_{000l} = \delta_{0000} + v_{000l}$$

where Dividend policy$_{ijkl}$ represents a dividend measure of *i*th firm-year in the *j*th firm, operating in the *k*th industry and located in the *l*th region. α_{0jkl} is the dividend policy average for the firm j in which firm-year ijkl is nested, while e_{ijkl} is a level 1 error term, which denotes the deviation of dividend policy of firm-year ijkl from the firm's average. Furthermore, firm's average dividend policy is explained by the kth industry average dividend policy, β_{00kl} nested in the region l, summed with the deviation of firm's jkl dividend policy from the industry average, r_{0jkl}. Similarly, industry average dividend policy in level 3 is explained by the average regional dividend policy k, $\gamma_{000l,}$ and an error term u_{00kl}. Finally, a region's average dividend policy is explained by the average dividend policy of all regions δ_{0000} and the error term which measures the deviation of the dividend policy of a region l from the global mean, v_{000l}. When combined into mixed model, we estimate the following equation:

$$Dividend\ policy_{ijkl} = \delta_{0000} + v_{000l} + u_{00kl} + r_{0jkl} + e_{ijkl}$$

We use MIXED command in STATA to analyse this model, which we estimate with the maximum likelihood method.

4 Variance Decomposition Results

4.1 Summary statistics

Our sample is mainly consistent of dividend nonpayers. Out of 800,049 observations, 17% are paying dividend. On average dividends are 11% of total assets, 61% of cash flow and 157% of earnings. Earnings are lagged since the last year earnings will affect dividend decisions more

than earnings in the same year. These statistics reveal that dividends are economically important for SMEs. Most of the dividend payers are located in provinces of Antwerp, 18%, East-Flanders 14% and West Flanders 13%. Those provinces are part of the wider Flanders region, where the most of SMEs are located. Statistics for the whole sample of dividend payers located in all of the provinces are reported in the appendix. In terms of industries, the most of the dividend payers operate in a wholesale trade 19%, retail trade 16% and construction 14%. These statistics show that location and industry could play an important part in their decisions whether to provide a dividend payout.

4.2 Relative contribution of firm-year, firm, industry and region effects to dividend policy of SMEs

Table 3 provide the variance component estimates for the four independent effects, firm-year, firm, industry and provinces. Next to the estimates we report percentages that show the relative importance of each of the levels. We decompose the variance of different dividend policy measures, i.e., dividend dummy (Model 1), dividend to total assets ratio (Model 2), dividend to cash flow ratio (Model 3), and dividend to earnings ratio (Model 4). All variables are defined as in Table 1. In Table 3 we treat firms-years as nested within firms, firms within industries and industries within provinces (Ma, Yong and Fitza, 2013; Chan et al., 2010). In Model 1, where our dependent variable is dividend dummy (DIV) we apply the HLM method on the whole sample of SMEs, both which pay and do not pay dividends. In the Models 2-4 we select only those observations from our sample which pay dividends. Our results show that firm-year and firm levels are the most relevant levels of the analysis for dividend policy of SMEs. In Model 1, the variance of whether SME will pay out dividends accounts for 63% on the firm-year level. Firm level accounts for 35% and the remaining 2% is driven by industry specific factors. Provinces do not account for any variation in the SMEs decision to pay dividends. Model 2 shows almost equal importance of firm-year and firm level factors in the

variation of dividend to total assets ratio (Div/TA), 47% and 53% respectively. While the remaining two levels, industry and provinces, do not account for any of the variation in Div/TA. In model 3, firm-year effects account for a significant 56% of the variation in Div/CF. The next most important driver are firm level effects with 41% stake in the total variance. Industry and provinces account for negligible 1% each in the variation of Div/CF. Finally, in Model 4 we find similar pattern with 67% of variation in Div/E attributable to firm-year effects, and 32% attributable to firm level effects. These results support our Hypothesis 1 and 2. While, the negligible economic effect, although statistically significant, of industry and provinces do not provide support for Hypothesis 3 and 4. Chi-square test shows that all of the independent effect variables are statistically significant at 1%. We repeat the same analysis to check whether 2-digit industry codes would affect our results. The results (available in the appendix, Table A.1) are identical.

Insert Table 3 here

In Table 4 we assume provinces are nested within industry. Namely, province development can significantly vary due to the types of industry they are focused on (Ma et al., 2013). Thus, when a province or a region specializes in one type of industry we could assume industry to be higher level, and thus threat provinces as nested within industries. Therefore, in Table 4 we observe the relative importance of the firm-year effects nested within firms, firm effects nested in provinces, while provinces are nested within an industry as the highest level of the analysis. Similarly, as in Table 3, we find that all the effects are statistically significant at a 1% level. Results are very consistent. We find that firm-year and firm effects are the most important, both accounting for 97% of variation in SMEs' decision to provide a dividend. 1% of a variation is attributable to provinces and remaining 2% to differences in industry. Variation decomposition of SMEs' Div/TA, Div/CF and Div/E remain the same as in Table 3. Firm-year effects and firm effects remain the most important in driving the differences in these ratios. We

fail to find the economically significant effect of provinces and industry. Results, thus, provide the support for Hypothesis 1 and 2, while our results do not support Hypothesis 3 and 4. In addition, we run the model with the industry level defined at 2-digit NACEBEL codes. Results stay the same (available in the appendix, Table A.2).

Insert Table 4 here

In Tables 5-6 we report the results of the variation in dividend policy of SMEs while we observe firms as nested within wider regions, namely Flanders, Wallonia and Brussels-capital region, instead of provinces. We find that all the independent effects are still statistically significant at 1% level. The firm-year level account for the most variation in all dividend policy measures of SMEs, followed by firm level effects as next most important driver of the differences in their dividend decisions. 62% of the differences between the decision whether to pay a dividend (DIV) are driven by firm-year effects. Firm level effects account for 35%, and industry for the remaining 3%. The variation in all the dividend payout ratios in Model 2-4 are fairly consistent with the result in Tables 3 and 4. We additionally address the grouping of industry at the 2-digit NACEBEL code levels as a robustness analysis. The results stay the same (available in the appendix, Table A.3 and Table A.4). Our results are strongly robust and provide support for the Hypothesis 1 and 2, while we reject the Hypothesis 3 and 4.

Insert Table 5 and Table 6 here

Additionally, we analyse the relative importance of our three-level model over time. We want to analyse whether effects stay stable or show a trend over time. Effect sizes are reported in Table 7 over the observed period from 2005 to 2018. Firm level effect remain the most important and the largest effect driving dividend policy of SMEs over time. There are no large fluctuations over the years and they are without a clear trend. Industry and provinces play a slightly more important role for dividend to total assets and dividend to cash flow ratios than

for dividend to earnings ratio. However, the time variant portion of firm, industry and province levels in the main analysis is likely included in the firm-year effect (Erkan et al, 2016). Industry level effect appears to increase, especially in 2017 , accounting for 6% of variation of Div/TA and Div/CF. Provinces still drive very small percentage, up to 2% of the total variation in dividend measures.

Insert Table 7 here

Since our province level include eleven provinces where SMEs are nested, for the robustness of our results we repeat our analysis using restricted maximum likelihood which should provide consistent estimates when the level has more limited number of groups. We obtain identical results as in tables we reported. To further check the robustness of our results, we exclude province level and analyse three level HLM model. The results remain the same.

4.2 Young versus mature firms

Firms are more likely to pay dividends the more mature they become and more established firms have been the primary focus in the literature on firm dividends. Also in the variance decomposition literature most studies have focused on large, multinationals (an exception is Short, McKelvie, Ketchen and Chandler, 2009). In this analysis, we check to what extent dividend policy determinants can differ between new firms and more established ones. While young firms will opt for exploiting investment opportunities rather than provide a payout, more established firms are more likely to have the excess cash for payout while they exhausted all the investment opportunities (Brockman and Unlu, 2011, DeAngelo et al., 2006). New firms are also facing a strong competition from their more established peers and they also face a liability of newness (Stinchcombe, 1965). Industry specific characteristics such as barriers to entry and fierce competition could lead to their failure (Shepherd, Douglas and Shanley, 2000; Short et al., 2009). These firms could be more affected by industry effects than their peers as

they face barriers of entry, they lack market legitimacy, especially form customers, financiers and suppliers (Short et al., 2009). New firms have to develop brand awareness and market acceptance while learning new tasks (McDougall, Oviatt and Shrader, 2003). Moreover, new firms are likely to be short on cash and less likely to provide a dividend (DeAngelo et al., 2006). We, therefore, investigate to what extent firm-year, firm, industry and provinces levels play a different role in dividend decisions of new SMEs and more established SMEs. We use the age threshold of six years (e.g., Brush, 1995; Zahra, Ireland and Hitt, 2000) to create two subsamples in our data. We also check for the threshold of ten years as a robustness analysis.

Results are shown in Table 8. In Panel A, Models 1-4 we compare the results of variance decomposition between new firms, i.e., firms six years old or younger, and established firms, i.e., firms more than six years old. In Panel B, Models 5-8 we compare the results of variance decomposition using the 10 years threshold between new and established firms. The most of the differences between dividend polices of both new and established firms, in both Panel A and B, is due to firm-year effects, except for DIV/TA, models 2 and 6, where firm effects play more important role. We observe little difference between panels in terms of firm year and firm effects for both new and established firms. Industry effects become more important the younger the firm is. In Panel A, Model 2 industry accounts for 7% for the variation in DIV/TA of young firms, and play no role for established firms. In Model 3, industry account for 4% and provinces for 2% in DIV/CF. In Panel B, the highest industry effects of 2% is on DIV and DIV/CF, in Models 5 and 7. Finally, province effects remain consistent across the subsamples, showing no importance except for 2% in DIV/CF for both panels. There is an evident difference in the number of observations which could affect our results. We observe almost no difference between new and established firms in the relative importance of the effects for DIV/E. We also observe less difference in the results between new and established firms when we apply the higher threshold of 10 years. Thus, we can conclude the lower threshold we impose and the younger firm is that breakthrough in the market significantly affects the variation between their

dividend policy. However, the moment we impose higher threshold between new and established firms, the industry effect vanishes.

Insert Table 8 here

4.3 Small versus large firms

Firm size is an inevitable factor observed in the studies of dividend policies, and it was always found to significantly affect dividend policy. It is thus important to account for difference in firm size while we decompose the variance of dividend policy. We decompose the variance of dividend policy of micro, small and medium firms. We use the definition of European Commission and split our sample in three different subsamples according to firm size measured by the total number of employees. Namely, micro firms have less than 10 employees, small firms employ between 50 and 10 employees, while medium firms employ between 250 and 50 employees. Results are presented in Table 9. Most firms in our sample are micro firms. Our findings show that firm-year and firm effects are still the most important factors driving the differences between dividend policies among all three subsamples. Industry account for 10% of the variation of dividend payout measured by dividend to assets ratio for the sample of medium firms, while it plays no role for the samples of small and micro firms. Provinces account the most for dividend to cash flow ratio of medium and small firms, that is 3%.

Insert Table 9 here

5 Conclusion

In this study we decompose the variance of dividend policy to investigate which are the most important drivers of its difference among SMEs. Previous studies looked at the factors affecting their dividend decisions in isolation, while we simultaneously analyse four different levels of effects which account for a significant part of their variance. Even though SMEs pay dividends on a regular basis and they account for the important part of their cash, we do not know what are the most important drivers of those decisions. Our results show that firm-year and firm specific factors are the most important in the variance of dividend policy and account for the largest portion. Differences in a decision whether to pay a dividend, dividend to total assets ratio, dividend to cash flow and dividend to earnings ratio are by far mostly affected by firm-year and firm level factors, while industry and provinces play a very little role. Firm level effects are the most important when observed over time. Our results are robust on different grouping of industries, namely 4-digit and 2-digit NACEBEL codes, as well as on using provinces or wider defined, regions in Belgium. Our findings on the firm-year and firm level effects are consistent with the results on a sample of listed firms across countries (Erkan et al., 2016). Furthermore, variance decomposition studies on firm performance showed the firm level effects are by far the most important effects in driving the differences between the performance of the firms (see e.g. Hawawini et al., 2003; Misangyi et al., 2006; Rumelt, 1991). Industry-level effects account for between 4 and 20 percent of performance variance (McGahan and Porter, 1997; Rumelt, 1991). Similarly as in Rumelt (1991), we can draw the conclusion that firms, and their dividend policy, differ from one another within industries "a great deal more than industries differ from one another." Namely in our study "intra-industry effect dominated the inter-industry effect" (Rumelt, 1991, pp 170). Industry is least important compared to firm intrinsic effects that are the most important factors driving the differences in dividend policy of SMEs.

Our study contributes to the scares literature on dividend policy of privately held firms. Unlike other studies that mostly analysed listed firms, we are interested in SMEs, the most

dominant type of firms in the world. Their payout decisions are economically important and account for more than a 60% of their cash flow. Furthermore, in previous dividend literature and literature on SMEs, the role of regions in driving their financial decisions is still relatively underexplored. We add to the literature by examining the within country, region effects in driving dividend policy of SMEs. The effect of regions has not been studied in dividend literature so far. We shed new light by finding that provinces or regions play very limited role whatsoever in driving the variation between dividend policy of SMEs. We fail to find the evidence of the economically important portion of the variance in dividend policy driven by this effect, however, it is statistically significant effect.

Finally, we add to the literature which applies variance decomposition method by looking at firm dividend policy, as a strategic decision of SMEs. Studies that used the variance decomposition method predominantly explored the drivers of firm profitability. Most of the these studies find the firm specific factors to be the most important factors in driving the differences in firm performance (see: Goldszmidt et al., 2010; Hawawini et al., 2004; Hough, 2006; Misangyi et al., 2006; Short et al., 2007). Firm level effects are dominant in driving sales and sales growth among new ventures, while less in the total variance of the performance of new ventures compared to more established firms (Short et al., 2009). Industry matters little for the survival of such firms, while studies on performance found that industry-level effects account for between 4 and 20 percent of its variance (McGahan and Porter, 1997; Rumelt, 1991). Chan et al. (2010) identifies the importance of subnational effects, next to the firm, industry and country levels in the total variance of firm performance. However, our findings are contrary to Chan et al. (2010) who instead find an important portion of variation of foreign affiliate performance driven by regions in emerging economies, while less so in advanced economies. Belgium is an advanced, but rather a small economy. Thus, provinces may not exhibit a greater difference in terms of macroeconomic environment for firm development and which lead to less heterogeneity in financial decisions of SMEs.

This study has several limitations. Firstly, we don't examine the reasons behind variation in dividend policy of SMEs across different levels. We merely show how much each level contributes to the overall variation in dividend policy. Secondly, we focused on one country, while an international sample could shed more light on a variation in SMEs from different (but similar) countries. An interesting future research could be done in the direction of differences between advanced and emerging countries, and their privately held firms. Finally, we assume that after applying firm, industry and region level effects, the residual variance is due to variation over time, however, other levels might be introduced such as corporate groups, in which firms are naturally nested.

References

Arcuri, G., and Levratto, N. (2020). Early stage SME bankruptcy: does the local banking market matter?. *Small Business Economics*, *54*(2), 421-436. https://doi.org/10.1007/s11187-018-0042-4

Barney, J. (1991). Special Theory Forum The Resource-Based Model of the Firm: Origins, Implications, and Prospects. *Journal Of Management*, *17*(1), 97-98. https://doi.org/10.1177/014920639101700107

Bae, S., Chang, K., and Kang, E. (2012). Culture, corporate governance, and dividend policy: International evidence. *Journal Of Financial Research*, *35*(2), 289-316. https://doi.org/10.1111/j.1475-6803.2012.01318

N. Berger, A., and F. Udell, G. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal Of Banking & Finance*, *22*(6-8), 613-673. https://doi.org/10.1016/S0378-4266(98)00038-7

Berzins, J., Bøhren, Ø., and 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., and 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

Baker, H.K. (1988). The Relationship Between Industry Classification and Dividend Policy. *Southern Business Review*, *14*(1), 1-8.

Brav, A., Graham, J., Harvey, C., and Michaely, R. (2005). Payout policy in the 21st century. *Journal of Financial Economics*, *77*(3), 483-527. https://doi.org/10.1016/j.jfineco.2004.07.004

Brockman, P., and 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

Campello, M., Giambona, E., Graham, J., and Harvey, C. (2011). Liquidity Management and Corporate Investment During a Financial Crisis. *Review Of Financial Studies*, *24*(6), 1944-1979. https://doi.org/10.1093/rfs/hhq131

Cejnek, G., Randl, O., and Zechner, J. (2021). The COVID-19 Pandemic and Corporate Dividend Policy. *Journal of Financial and Quantitative Analysis*, *56*(7), 2389–2410. https://doi.org/10.1017/S0022109021000533

Chan, C., Makino, S., and Isobe, T. (2010). Does subnational region matter? Foreign affiliate performance in the United states and China. *Strategic Management Journal*, *31*(11), 1226-1243. https://doi.org/10.1002/smj.854

Chan, C., Patel, P., and Phan, P. (2020). Do differences among accelerators explain differences in the performance of member ventures? Evidence from 117 accelerators in 22 countries. *Strategic Entrepreneurship Journal*, *14*(2), 224-239. https://doi.org/10.1002/sej.1351

Dempsey, S. J., Laber, G. and Rozeff, M. S. (1993). Dividend Policies in Practice: Is There an Industry Effect?. *Quarterly Journal of Business and Economics*, *32*(4), 3-13. https://www.jstor.org/stable/40473096

DeAngelo, H., DeAngelo, L., and Skinner, D. (2004). Are dividends disappearing? Dividend concentration and the consolidation of earnings. *Journal Of Financial Economics*, *72*(3), 425-456. https://doi.org/10.1016/s0304-405x(03)00186-7

DeAngelo, H., DeAngelo, L., and 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

Deloof, M., and La Rocca, M. (2015). Local financial development and the trade credit policy of Italian SMEs. *Small Business Economics*, *44*(4), 905-924. https://doi.org/10.1007/s11187-014-9617-x

Deloof, M., La Rocca, M., and Vanacker, T. (2018). Local Banking Development and the Use of Debt Financing by New Firms. *Entrepreneurship Theory And Practice*, *43*(6), 1250-1276. https://doi.org/10.1177/1042258718783486

Denis, D., and Osobov, I. (2008). Why do firms pay dividends? International evidence on the determinants of dividend policy☆. *Journal Of Financial Economics*, *89*(1), 62-82. https://doi.org/10.1016/j.jfineco.2007.06.006

Ebben, J., and Johnson, A. (2005). Efficiency, flexibility, or both? Evidence linking strategy to performance in small firms. *Strategic Management Journal*, *26*(13), 1249-1259. https://doi.org/10.1002/smj.503

Erkan, A., Fainshmidt, S., and Judge, W. Q. (2016). Variance decomposition of the country, industry, firm, and firm-year effects on dividend policy. *International Business Review*, *25*(6), 1309–1320. https://doi.org/10.1016/j.ibusrev.2016.04.003

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

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

Fama, E., and 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

Fasano, F., and Deloof, M. (2021). Local financial development and cash holdings in Italian SMEs. *International Small Business Journal: Researching Entrepreneurship*, *39*(8), 781-799. https://doi.org/10.1177/02662426211011554

Fidrmuc, J. P., and Jacob M. (2010). Culture, Agency Costs, And Dividends. *Journal Of Comparative Economics*, *38*(3), 321-339. https://doi.org/10.1016/j.jce.2010.04.002

Fitza, M., and Tihanyi, L. (2017). How Much Does Ownership Form Matter?. *Strategic Management Journal*, *38*(13), 2726-2743. https://doi.org/10.1002/smj.2671

Flavin, T., and O'Connor, T. (2017). Reputation building and the lifecycle model of dividends. *Pacific-Basin Finance Journal*, *46*, 177–190. https://doi.org/10.1016/j.pacfin.2017.09.006

Frijns, B., Gilbert, A., Lehnert, T., and Tourani-Rad, A. (2013). Uncertainty avoidance, risk tolerance and corporate takeover decisions. *Journal Of Banking & Finance*, *37*(7), 2457-2471. https://doi.org/10.1016/j.jbankfin.2013.02.010

Goldszmidt, R., Brito, L., and de Vasconcelos, F. (2011). Country effect on firm performance: A multilevel approach. *Journal Of Business Research*, 64(3), 273-279. https://doi.org/10.1016/j.jbusres.2009.11.012

Grennan, J. (2019). Dividend payments as a response to peer influence. *Journal Of Financial Economics*, *131*(3), 549-570. https://doi.org/10.1016/j.jfineco.2018.01.012

Guiso, L., Sapienza, P., and Zingales, L. (2004). Does Local Financial Development Matter?. *The Quarterly Journal Of Economics*, *119*(3), 929-969. https://doi.org/10.1162/0033553041502162

Guiso, L., Sapienza, P. and Zingales, L., 2006. Does Culture Affect Economic Outcomes?. *Journal of Economic Perspectives*, *20*(2), 23-48. http://dx.doi.org/10.2139/ssrn.876601

Grullon, G., Michaely, R., and 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

Javakhadze, D., Ferris, S., and Sen, N. (2014). An international analysis of dividend smoothing. *Journal Of Corporate Finance*, *29*, 200-220. https://doi.org/10.1016/j.jcorpfin.2014.09.007

Hawawini, G., Subramanian, V., and Verdin, P. (2004). The home country in the age of globalization: how much does it matter for firm performance?. *Journal Of World Business*, 39(2), 121-135. https://doi.org/10.1016/j.jwb.2003.08.012

Hox, J., Moerbeek, M. and Schoot, R. (2018). *Multilevel analysis*. 3rd ed. New York, NY: Routledge.

Hough, J. (2006). Business segment performance redux: a multilevel approach. *Strategic Management Journal*, *27*(1), 45-61. https://doi.org/10.1002/smj.498

Krieger, K., Mauck, N., and Pruitt, S. (2021). The impact of the COVID-19 pandemic on dividends. *Finance Research Letters*, *42*, 101910. https://doi.org/10.1016/j.frl.2020.101910

La Rocca, M., La Rocca, T., and Cariola, A. (2010). The influence of local institutional differences on the capital structure of SMEs: Evidence from Italy. *International Small Business Journal: Researching Entrepreneurship*, *28*(3), 234-257. https://doi.org/10.1177/0266242609360614

Leary, M., and Michaely, R. (2011). Determinants of Dividend Smoothing: Empirical Evidence. *Review Of Financial Studies*, *24*(10), 3197-3249. https://doi.org/10.1093/rfs/hhr072

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. W. (2000). Agency Problems and Dividend Policies around the World. *The Journal of Finance*, *55*(1), 1-33. https://doi.org/10.1111/0022-1082.00199

Licht, A., Goldschmidt, C., and Schwartz, S. (2005). Culture, Law, and Corporate Governance. *International Review Of Law And Economics*, *25*(2), 229-255. https://doi.org/10.1016/j.irle.2005.06.005

Lintner, J. (1956). Distribution of Incomes of Corporations Among Dividends Retained Earnings and Taxes. *The American Economic Review*, *46*(2), 97-113. http://www.jstor.org/stable/1910664

Ma, X., Tong, T., and Fitza, M. (2013). How much does subnational region matter to foreign subsidiary performance? Evidence from Fortune Global 500 Corporations' investment in China. *Journal Of International Business Studies*, *44*(1), 66-87. https://doi.org/10.1057/jibs.2012.32

Manneh, M., and Naser, K. (2015). Determinants of Corporate Dividends Policy: Evidence from an Emerging Economy. *International Journal Of Economics And Finance*, *7*(7). http://dx.doi.org/10.5539/ijef.v7n7p229

Massa, M., Rehman, Z., and Vermaelen, T. (2007). Mimicking repurchases. *Journal Of Financial Economics*, *84*(3), 624-666. https://doi.org/10.1016/j.jfineco.2006.02.006

McDougall, P., Oviatt, B., and Shrader, R. (2003). *Journal Of International Entrepreneurship*, *1*(1), 59-82. https://doi.org/10.1023/A:1023246622972

McGahan, A., and Porter, M. (2002). What Do We Know About Variance in Accounting Profitability?. *Management Science*, *48*(7), 834-851. https://doi.org/10.1287/mnsc.48.7.834.2816

McGahan, A. and Victer, R. (2010). How much does home country matter to corporate profitability?. *Journal of International Business Studies*, *41*(1), 142-165. https://doi.org/10.1057/jibs.2009.69

McNamara, G., Aime, F., and Vaaler, P. M. (2005). Is Performance Driven by Industry- or Firm-Specific Factors? A Response to Hawawini, Subramanian, and Verdin. *Strategic Management Journal*, *26*(11), 1075–1081. https://doi.org/10.1002/smj.496

Michaely, R., and Roberts, M. R. (2012). Corporate Dividend Policies: Lessons from Private Firms. *Review of Financial Studies*, *25*(3), 711–746. https://doi.org/10.1093/rfs/hhr108

Michel, A. (1979). Industry Influence On Dividend Policy. *Financial Management*, *8*(3), 22-26. https://doi.org/10.2307/3665034

Michiels, A., Voordeckers, W., Lybaert, N., and 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

Misangyi, V. F., Elms, H., Greckhamer, T., and Lepine, J. A. (2006). A New Perspective on a Fundamental Debate: A Multilevel Approach to Industry, Corporate, and Business Unit

Effects. *Strategic Management Journal*, *27*(6), 571–590. http://www.jstor.org/stable/20142357

Ozkaya, Erkan, H., Dabas, C., Kolev, K., Hult, G., Dahlquist, S., and Manjeshwar, S. (2013). An assessment of hierarchical linear modeling in international business, management, and marketing. *International Business Review*, *22*(4), 663-677. https://doi.org/10.1016/j.ibusrev.2012.10.002

Rommens, A., Cuyvers, L., and 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

Rumelt, R. (1991). How much does industry matter?. *Strategic Management Journal*, *12*(3), 167-185. https://doi.org/10.1002/smj.4250120302

Saunders, A., and Steffen, S. (2011). The Costs of Being Private: Evidence from the Loan Market. *Review Of Financial Studies*, *24*(12), 4091-4122. https://doi.org/10.1093/rfs/hhr083

Schmalensee, R. 1985). Do markets differ much? *The American Economic Review*, *75*(3), 341–351. https://www.jstor.org/stable/1814804?seq=1

Shao, L., Kwok, C., and Guedhami, O. (2010). National culture and dividend policy. *Journal Of International Business Studies*, *41*(8), 1391-1414. https://doi.org/10.1057/jibs.2009.74

Short, J., Ketchen, D., Palmer, T., and Hult, G. (2007). Firm, strategic group, and industry influences on performance. Strategic Management Journal, 28(2), 147-167. https://doi.org/10.1002/smj.574

Short, J., McKelvie, A., Ketchen, D., and Chandler, G. (2009). Firm and industry effects on firm performance: A generalization and extension for new ventures. *Strategic Entrepreneurship Journal*, *3*(1), 47-65. https://doi.org/10.1002/sej.53

Sohl, T., Vroom, G., and Fitza, M. (2020). How Much Does Business Model Matter for Firm Performance? A Variance Decomposition Analysis. *Academy Of Management Discoveries*, *6*(1), 61-80. https://doi.org/10.5465/amd.2017.0136

Stulz, R., and Williamson, R. (2003). Culture, openness, and finance. *Journal Of Financial Economics*, *70*(3), 313-349. https://doi.org/10.1016/S0304-405X(03)00173-9

Withers, M., and Fitza, M. (2017). Do board chairs matter? The influence of board chairs on firm performance. *Strategic Management Journal*, *38*(6), 1343-1355. https://doi.org/10.1002/smj.2587

Van Caneghem, T., and Aerts, W. (2011). Intra-industry conformity in dividend policy. *Managerial Finance*, *37*(6), 492-516. https://doi.org/10.1108/03074351111134718

Wu, Y. (2017). What's behind Smooth Dividends? Evidence from Structural Estimation. *The Review Of Financial Studies*, *31*(10), 3979-4016. https://doi.org/10.1093/rfs/hhx119

Tables and Figures

Table 1. Variable definitions

Dependent variables	**Definition**
Measures of dividend policies	
DIV	Dummy equal to 1 if a firm paid a dividend in year t, zero otherwise
Div/TA	Total dividends paid in year t over the total assets in year t
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

Table 2. Summary statistics.
Number of dividend payers, mean, standard error, 5th percent, median and 95th percent of dividend measures for: the whole sample, three provinces and the three industries with the most concentrated dividend payers. Industries are represented by NACEBEL 2-digit codes.

Dividend payers	N	Mean	SE	p5	Median	p95
Whole sample	132,784					
DIV/TA	132,784	0.11	0.12	0.00	0.06	0.40
DIV/CF	116,692	0.61	0.69	0.02	0.35	2.44
DIV/E	116,172	1.57	2.00	0.00	0.80	7.11
Province						
Antwerp	24,303					
DIV/TA	24,303	0.13	0.13	0.00	0.08	0.40
DIV/CF	21,428	0.68	0.71	0.02	0.43	2.44
DIV/E	21,341	1.69	2.04	0.00	0.90	7.11
East-Flanders	18,918					
DIV/TA	18,918	0.12	0.12	0.00	0.06	0.40
DIV/CF	16,649	0.64	0.72	0.02	0.36	2.44
DIV/E	16,593	1.66	2.08	0.00	0.82	7.11
West-Flanders	17,803					
DIV/TA	17,803	0.11	0.12	0.00	0.06	0.40
DIV/CF	15,762	0.63	0.73	0.02	0.34	2.44
DIV/E	15,693	1.70	2.15	0.00	0.80	7.11
Industry						
Wholesale trade, except of motor vehicles and motorcycles						
DIV/TA	25,382	0.11	0.12	0.00	0.06	0.40
DIV/CF	22,402	0.62	0.68	0.02	0.38	2.44
DIV/E	22,346	1.49	1.88	0.01	0.80	7.11
Retail trade, except of motor vehicles and motorcycles						
DIV/TA	21,262	0.10	0.12	0.00	0.06	0.40
DIV/CF	18,851	0.58	0.69	0.02	0.32	2.44
DIV/E	18,765	1.52	2.00	0.00	0.74	7.11
Specialized construction activities						
DIV/TA	19,201	0.11	0.12	0.00	0.06	0.40
DIV/CF	17,026	0.62	0.72	0.02	0.34	2.44
DIV/E	16,920	1.68	2.11	0.00	0.81	7.11

Table 3. Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).
In Model 1 we decompose the variance of a decision whether SME will pay divided, dividend dummy (DIV) and we use the complete sample of dividend payers and dividend nonpayers. In Models 2-4 we decompose the variance of dividend to total assets ratio (Div/TA), dividend to cash flow ratio (Div/CF) and dividend to earnings ratio (Div/E) on a sample of dividend payers.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.082	63%	0.007	47%	0.306	56%	2.931	67%
Firm	0.045	35%	0.008	53%	0.222	41%	1.379	31%
Industry	0.003	2%	0.000	0%	0.005	1%	0.028	1%
Province	0.000	0%	0.000	0%	0.009	2%	0.040	1%
Total	0.130	100%	0.015	100%	0.542	100%	4.378	100%
N	800,049		126,773		111,629		111,140	

Notes. Firms are nested in industries, industries are nested in regions.

Table 4. Dividend policy variance decomposition using four-level Hierarchical linear model (HLM) where provinces are nested in industries. In Model 1 we decompose the variance of a decision whether SME will pay divided, dividend dummy (DIV) and we use the complete sample of dividend payers and dividend nonpayers. In Models 2-4 we decompose the variance of dividend to total assets ratio (Div/TA), dividend to cash flow ratio (Div/CF) and dividend to earnings ratio (Div/E) on a sample of dividend payers.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.082	63%	0.007	47%	0.306	57%	2.929	67%
Firm	0.045	34%	0.008	53%	0.223	41%	1.386	32%
Province	0.001	1%	0.000	0%	0.009	2%	0.056	1%
Industry	0.003	2%	0.000	0%	0.003	1%	0.015	0%
Total	0.131	100%	0.015	100%	0.541	100%	4.386	100%
N	800,049		126,773		111,629		111,140	

Notes. Firms are nested in regions, regions are nested in industries.

Table 5. Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).
In Model 1 we decompose the variance of a decision whether SME will pay divided, dividend dummy (DIV) and we use the complete sample of dividend payers and dividend nonpayers. In Models 2-4 we decompose the variance of dividend to total assets ratio (Div/TA), dividend to cash flow ratio (Div/CF) and dividend to earnings ratio (Div/E) on a sample of dividend payers. Regions represent the differences between Flanders, Wallonia and Brussels capita region.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.082	62%	0.007	44%	0.306	57%	2.929	67%
Firm	0.046	35%	0.009	56%	0.223	41%	1.387	32%
Industry	0.004	3%	0.000	0%	0.005	1%	0.024	1%
Region	0.000	0%	0.000	0%	0.005	1%	0.027	1%
Total	0.132	100%	0.016	100%	0.539	100%	4.367	100%
N	800,108		126,781		111,636		111,147	

Notes. Firms are nested in industries, industries are nested in regions.

Table 6. Dividend policy variance decomposition using four-level Hierarchical linear model (HLM) where regions are nested in industries.
In Model 1 we decompose the variance of a decision whether SME will pay divided, dividend dummy (DIV) and we use the complete sample of dividend payers and dividend nonpayers. In Models 2-4 we decompose the variance of dividend to total assets ratio (Div/TA), dividend to cash flow ratio (Div/CF) and dividend to earnings ratio (Div/E) on a sample of dividend payers. Regions represent the differences between Flanders, Wallonia and Brussels capita region.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.082	62%	0.007	44%	0.306	57%	2.928	67%
Firm	0.046	35%	0.009	56%	0.223	41%	1.389	32%
Region	0.001	1%	0.000	0%	0.011	2%	0.059	1%
Industry	0.003	2%	0.000	0%	0.000	0%	0.000	0%
Total	0.132	100%	0.016	100%	0.540	100%	4.376	100%
N	800,108		126,781		111,636		111,147	

Note: Firms are nested in regions, regions are nested in industries.

Table 7. The firm-, industry- and province-level effects over time using three-level Hierarchical linear model (HLM).
The variance decomposition of dividend to total assets (Div/TA), dividend to cash flow (Div/CF) and dividend to earnings ratio (Div/E) over time using three-level HLM on a sample of dividend payers. We applied restricted maximum likelihood estimation.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Div/TA														
Firm	96%	98%	98%	97%	98%	98%	97%	97%	95%	95%	98%	96%	93%	94%
Industry	2%	0%	1%	1%	1%	0%	1%	1%	3%	2%	1%	2%	6%	4%
Province	2%	2%	1%	2%	1%	2%	2%	2%	2%	3%	1%	2%	1%	2%
N	6,284	5,937	7,704	7,949	8,024	11,371	12,319	10,674	16,260	11,788	7,060	5,544	4,344	5,260
Div/CF														
Firm	96%	98%	98%	97%	98%	98%	97%	97%	95%	95%	98%	96%	93%	94%
Industry	2%	0%	1%	1%	1%	0%	1%	1%	3%	2%	1%	2%	6%	4%
Province	2%	2%	1%	2%	1%	2%	2%	2%	2%	3%	1%	2%	1%	2%
N	6,029	5,337	6,347	7,312	7,580	8,511	11,621	10,253	15,715	11,434	6,834	5,386	4,198	5,072
Div/E														
Firm	99%	100%	100%	99%	98%	99%	98%	99%	95%	97%	99%	100%	97%	96%
Industry	1%	0%	0%	0%	2%	0%	1%	0%	3%	1%	1%	0%	3%	2%
Province	0%	0%	0%	1%	0%	1%	1%	1%	2%	2%	0%	0%	0%	2%
N	6,012	5,308	6,324	7,283	7,547	8,451	11,582	10,218	15,655	11,390	6,793	5,355	4,185	5,037

Table 8. Variance decomposition of dividend policy of new and established firms using four-level Hierarchical linear model (HLM).
In Models 1-4 we split the sample using 6 years threshold, where new firms are 6 years old or younger, and established firms are older than 6 years. In Models 5-8 we use a 10 years threshold, where new firms are 10 years old or younger, and established firms are older than 10 years. In Models 1 and 5 we use the sample of both dividend payers and dividend nonpayers. In all other models we only use the sample of dividend payers.

	Panel A				Panel B			
	6 years old threshold				10 years old threshold			
Model	1	2	3	4	5	6	7	8
	DIV	DIV/TA	DIV/CF	DIV/E	DIV	DIV/TA	DIV/CF	DIV/E
	%	%	%	%	%	%	%	%
New firms								
Firm Year	60%	36%	62%	73%	62%	43%	62%	72%
Firm	38%	57%	32%	26%	36%	57%	34%	26%
Industry	2%	7%	4%	1%	2%	0%	2%	1%
Province	0%	0%	2%	1%	0%	0%	2%	0%
N	131,520	15,457	12,054	11,975	212,265	27,173	22,179	22,038
Established firms								
Firm Year	62%	44%	55%	65%	62%	44%	54%	64%
Firm	36%	56%	42%	33%	36%	56%	43%	34%
Industry	2%	0%	1%	1%	2%	0%	1%	1%
Province	0%	0%	2%	1%	0%	0%	2%	1%
N	668,529	111,316	99,575	99,165	587,784	99,600	89,450	89,102

Table 9. Variance decomposition of dividend policy of medium, small and micro firms using four-level Hierarchical linear model (HLM). Medium firms employ between 250 and 50 people, small firms employ between 50 and 10 people, micro firms employ less than 10 people. In Model 1 we use the sample of both dividend payers and dividend nonpayers. In Models 2-4 we only use the sample of dividend payers. We apply restricted maximum likelihood estimation method.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Medium firms								
Firm Year	0.123	57%	0.004	40%	0.213	55%	1.968	67%
Firm	0.087	40%	0.005	50%	0.151	39%	0.897	31%
Industry	0.005	2%	0.001	10%	0.013	3%	0.037	1%
Province	0.001	0%	0.000	0%	0.012	3%	0.036	1%
N	25,885		8,296		7,322		7,316	
Small firms								
Firm Year	0.101	58%	0.005	45%	0.247	59%	2.582	73%
Firm	0.067	39%	0.006	55%	0.159	38%	0.894	25%
Industry	0.004	2%	0.000	0%	0.003	1%	0.039	1%
Province	0.001	1%	0.000	0%	0.011	3%	0.037	1%
N	172,910		39,097		35,049		34,985	
Micro firms								
Firm Year	0.074	65%	0.008	47%	0.348	58%	3.219	67%
Firm	0.037	33%	0.009	53%	0.235	39%	1.508	31%
Industry	0.002	2%	0.000	0%	0.005	1%	0.028	1%
Province	0.000	0%	0.000	0%	0.010	2%	0.056	1%
N	605,250		80,557		70,340		69,920	

Appendix

Table A.1 Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.083	64%	0.007	44%	0.308	56%	2.941	67%
Firm	0.045	35%	0.009	56%	0.226	41%	1.403	32%
Industry	0.002	2%	0.000	0%	0.004	1%	0.018	0%
Province	0.000	0%	0.000	0%	0.009	2%	0.040	1%
Total	0.130	100%	0.016	100%	0.547	100%	4.402	100%
N	800,049		126,773		111,629		111,140	

Note: Industries are grouped in 2-digit NACEBEL codes.

Table A.2 Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.083	62%	0.007	44%	0.308	57%	2.940	67%
Firm	0.045	34%	0.009	56%	0.226	41%	1.403	32%
Province	0.001	1%	0.000	0%	0.009	2%	0.053	1%
Industry	0.004	3%	0.000	0%	0.002	0%	0.009	0%
Total	0.133	100%	0.016	100%	0.545	100%	4.405	100%
N	800,049		126,773		111,629		111,140	

Note: Industries are grouped in 2-digit NACEBEL codes.

Table A.3 Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.083	63%	0.007	44%	0.308	57%	2.941	67%
Firm	0.045	34%	0.009	56%	0.227	42%	1.407	32%
Industry	0.003	2%	0.000	0%	0.004	1%	0.015	0%
Region	0.000	0%	0.000	0%	0.006	1%	0.028	1%
Total	0.131	100%	0.016	100%	0.545	100%	4.391	100%
N	800,108		126,781		111,636		111,147	

Note: Industries are grouped in 2-digit NACEBEL codes.

Table A.4 Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.083	62%	0.007	44%	0.308	56%	2.940	67%
Firm	0.045	34%	0.009	56%	0.227	42%	1.407	32%
Region	0.001	1%	0.000	0%	0.011	2%	0.048	1%
Industry	0.004	3%	0.000	0%	0.000	0%	0.000	0%
Total	0.133	1.000	0.016	100%	0.546	100%	4.395	100%
N	800,108		126,781		111,636		111,147	

Note: Industries are grouped in 2-digit NACEBEL codes.

Table A.5 Summary statistics of dividend paying SMEs in 10 Belgian provinces and Brussels.

Province	N	Mean	SE	p5	Median	p95
Antwerp	24,303					
DIV/TA	24,303	0.13	0.13	0.00	0.08	0.40
DIV/CF	21,428	0.68	0.71	0.02	0.43	2.44
DIV/E	21,341	1.69	2.04	0.00	0.90	7.11
Walloon Brabant	5,493					
DIV/TA	5,493	0.10	0.11	0.00	0.06	0.40
DIV/CF	4,762	0.57	0.64	0.02	0.35	2.44
DIV/E	4,728	1.45	1.87	0.00	0.75	7.11
Brussels	11,955					
DIV/TA	11,955	0.12	0.12	0.01	0.08	0.40
DIV/CF	10,355	0.63	0.65	0.03	0.41	2.44
DIV/E	10,310	1.48	1.82	0.00	0.86	7.11
East-Flanders	18,918					
DIV/TA	18,918	0.12	0.12	0.00	0.06	0.40
DIV/CF	16,649	0.64	0.72	0.02	0.36	2.44
DIV/E	16,593	1.66	2.08	0.00	0.82	7.11
Hainaut	10,431					
DIV/TA	10,431	0.09	0.11	0.00	0.05	0.38
DIV/CF	9,180	0.53	0.64	0.02	0.29	2.44
DIV/E	9,157	1.40	1.88	0.00	0.69	7.11
Limburg	9,290					
DIV/TA	9,290	0.12	0.13	0.00	0.06	0.40
DIV/CF	8,124	0.67	0.75	0.02	0.37	2.44
DIV/E	8,083	1.73	2.16	0.00	0.84	7.11
Liège	15,147					
DIV/TA	15,147	0.09	0.11	0.00	0.04	0.39
DIV/CF	13,323	0.49	0.61	0.02	0.26	2.30
DIV/E	13,265	1.28	1.78	0.00	0.63	6.89
Luxembourg	2,842					
DIV/TA	2,842	0.08	0.10	0.00	0.04	0.35
DIV/CF	2,520	0.46	0.60	0.02	0.24	2.36
DIV/E	2,503	1.31	1.84	0.00	0.62	7.11
Namur	5,077					
DIV/TA	5,077	0.08	0.10	0.00	0.04	0.36
DIV/CF	4,450	0.47	0.61	0.02	0.24	2.22
DIV/E	4,412	1.32	1.81	0.00	0.64	7.11
Flemish Brabant	11,517					
DIV/TA	11,517	0.13	0.13	0.00	0.08	0.40
DIV/CF	10,132	0.68	0.72	0.02	0.42	2.44
DIV/E	10,080	1.68	2.03	0.00	0.90	7.11
West-Flanders	17,803					
DIV/TA	17,803	0.11	0.12	0.00	0.06	0.40
DIV/CF	15,762	0.63	0.73	0.02	0.34	2.44
DIV/E	15,693	1.70	2.15	0.00	0.80	7.11

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Dividend policy of SMEs: A variance decomposition approach

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DIVIDEND POLICY OF SMEs: A VARIANCE DECOMPOSITION APPROACH

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Abstract:

Previous research on dividend policies in privately held firms has been largely focused on the determinants of dividend policies which are identified at the firm-year, firm, and industry levels. Studying these effects in isolation would, however, provide an incomplete picture of the overall drivers of dividend policy. In this study we go a step further by analysing these effects simultaneously by applying a variance decomposition method to explore how much each level of the analysis contributes to dividend policy of Small and Medium Sized Enterprises (SMEs). Based on a sample of 110,050 Belgian SMEs, our data reveal that firm-year and firm-level differences explain most of the variance of dividend policies which is in line with the resource based theory. Industry-level differences and region differences matter very little for dividend policy of SMEs.

Keywords: Dividend policy, SMEs, Variance decomposition

1. Introduction

Factors which drive dividend decisions keep to puzzle scholars even more as they are a phenomenon also common among privately held firms, specifically SMEs. However, it is still relatively little known about the dividend decisions of SMEs, which are the most important firms in the economy, and globally the most dominant type of firm (Gao, Hsu & Li, 2018). For example, in Belgium they account for 99.9 percent of all firms, employing 65 percent of working population and producing almost 60 percent of national GDP[1]. Despite their importance, little is known about their dividend policies. Dividends are mainly regarded as a financial decision of a large, mature, profitable and listed firms (Brockman and Unlu, 2011; DeAngelo, DeAngelo and Stultz, 2006; Fama and French, 2001). However, many privately held firms pay out dividends as they are a source of cash for the rather illiquid private firms' shares (Berzins, Bøhren, and Stacescu, 2018, 2019). Few studies found dividend payouts of private firms to be more erratic, less smoothed and lower than in listed firms (Michaely and Roberts, 2012; Rommens, Cuyvers and Deloof, 2012). In this study, we dwell deeper on which factors account for the most of the variation among dividend policy of SMEs by decomposing its variance on firm-year, firm, industry and region level effects that affect dividend decision of SMEs.

Few studies of dividend policy of privately held firms together with an extensive literature of dividend policy of listed firm identified different factors that significantly affect managers decision on whether and which amount of dividend to pay out. Drivers of dividend payouts are, for instance, profitability, leverage, earned-contributed capital mix, agency costs, ownership structure (Berzins et al., 2018, 2019; Brockman and Unlu, 2011; DeAngelo, et al., 2006; Fama and French, 2001; Michaely and Roberts, 2012, Michiels, Voordeckers, Lybaert et al., 2015). These studies mainly focused on firm level determinants of dividend payout decisions.

[1] Data are for the year 2019, retrieved from Eurostat (https://ec.europa.eu/eurostat/web/structural-business-statistics/small-and-medium-sized-enterprises)

However, untangling the dividend phenomena by observing only one or few factors in isolation provides an incomplete picture of the underlying mechanisms that drive the differences in firm's dividend decisions (Erkan, Fainshmidt, Judge 2016). Moreover, many of the underlying theories are tested on listed firms and do not explain the dividend policy of private firms. Dividends provide liquidity and diversification for private firm owners. A private firm has rather dividends as a source of cash instead of capital gains due to the illiquidity of shares (Fitza and Tihanyi, 2017). Without the obligation to disclose information to the financial markets, private firms have a competitive advantage by shielding their strategies. In this paper we will untangle a part of their strategy by analysing how a range of different effects actually "matter" in explaining the variation in their dividend decisions. We therefore examine the relative contribution of firm-year, firm and industry effect to the total variance of dividend policy of SMEs.

Furthermore, we account for the region effects, as additional level which could contribute to the variance of dividend policy. Previous studies found that different regional development within one country significantly matter for firm financial policies (see e.g. Chan, Makino and Isobe, 2010; Deloof and La Rocca, 2015; Guiso, Sapienza, Zigales, 2004), survival of SMEs (Arcuri and Levratto, 2020), capital structure (La Rocca, La Rocca and Cariola, 2010). This is the first paper to look whether these differences affect dividend policy of SMEs. Belgium is suitable to test a significance of region effects because it provides diverse setting with within different formal and informal institutions. Heterogeneous macroeconomic environment is reflected through three different regions and eleven provinces which could lead to different decisions among differently located SMEs.

We contribute to the scarce literature on dividend policy of SMEs by breaking down the variance on four different levels and we hypothesise these effects have the significant influence on the total variation of dividend policy. Furthermore, we account for previously overlooked region effects and argue that they should contribute to the meaningful variation in dividend

policy of SMEs. Culture also plays an important role in firms' dividend strategies and significantly affect the levels of dividends paid (Bae, Chang and Kang, 2012; Erkan et al., 2016; Fidrmuc and Jacob, 2010). Taking into regard the diversity in both formal and informal, cultural differences within Belgium we examine whether and to what extend they matter for dividend policy of SMEs. We , therefore, shed light on the factors driving the dividend decisions of SMEs.

Dividends and their significant factors have been studied quite thoroughly, but no one has yet studied the contribution of each effect to dividend payouts of privately held firms. To do so we apply a variance decomposition methodology, specifically Hierarchical linear modelling (HLM). We analyse the relative importance of firm-year, firm, industry and region effects on the heterogeneity of dividend policy. Since Schmalensee (1985) pioneered with his study on the variance decomposition of firms profitability into components associated with year, industry, the corporate-parent, and business-specific effects, this method found a wide application in strategic management (Fitza, 2014; McGahan and Porter, 2002; Rumelt, 1991) and international business studies (McGahan and Victer, 2010). These studies drove the attention on the importance of looking into factors inherent to industry and country levels where firms operate and interact. Over the years, in addition to these other relevant effect levels were identified, such as accelerators (Chan, Patel and Phan, 2020), a CEO (Withers and Fitza, 2017), business models (Sohl, Vroom and Fitza, 2020), an ownership (Fitza and Tihanyi, 2017) and others. By applying the variance decomposition method on dividend policy, we contribute to this literature which has been focused on the factors driving the variance of firm performance.

We simultaneously decompose the variance of the dividend policy of 110,050 Belgian SMEs during 14-year period, at each level of the analysis. We observe alternative measures of dividend policy, namely, whether SMEs decides to pay a dividend, dividend dummy, dividend to assets ratios, dividend to cash flow and dividend to earnings ratio. We find that not all levels

are important for dividend decisions of SMEs. The most important are the firm-year and firm effects, while the industry and region level effects were less important in our data. Specifically, firm-year level effects account for 47–67 percent, and firm effects account for 32-56 percent of the variance in dividend payouts. Industry play only a minor role as a determinants of the dividend policy of SMEs. However, we find that these effects are statistically significant and should not be ignored for dividend decisions. In addition, to these effects we find that regions account for a limited variation in dividend to cash flow and dividend to earnings ratios, up to 2% of the total variance. Finally, we analyse whether there are differences in the relative contribution of these four levels for different types of firms. Our results stay consistent for the sample of small and micro firms, new and more established firms as well as when we use three level HLM.

The remainder of the paper is organized as follows. In Section 2 we summarize dividend literature and derive our hypotheses. Section 3 describes the data, methodology and variables. Section 4 discusses the results and we conclude in Section 5.

2. Theoretical framework

2.1 Firm year effect

SMEs have a more erratic dividend policy than listed firms, whereby they are less reluctant to cut dividends and smooth dividends significantly less (Michaely and Roberts, 2006). Listed firms smooth dividends when they target a long term payout ratio to provide a consistent stream of dividends from year to year. Dividend smoothing helps to avoid the negative reactions by market participants or shareholders (Cejnek, Randl and Zechner, 2021; Leary and Michaely, 2011; Wu, 2017). However, SMEs with few external investors have less motives to signal the state of the firm (Michaely and Roberts, 2006; Rommens et al., 2012). Lack of market scrutiny in this sense provides more flexibility and discretion to SMEs which should eventually lead to more variation in their dividend policy over the years. To cut or reduce dividend amounts in

times of a crisis such as during the recent pandemic could ensure these firms an additional source of liquidity and a cushion in times of uncertainty (Krieger, Mauck and Pruitt, 2021).

Recent work shows that the life cycle of privately held firms significantly affects their propensity to pay dividends, and the amounts paid (Cadenovic, Deloof and Paeleman, 2022). As privately held firms mature, grow and retain more of their profits, they are more likely to initiate and provide a dividend payout. Previous scholars on dividend policies acknowledge that dividend payers are more likely to be larger and mature firms, while dividend nonpayers are often young and growing firms with abundance of profitable investment opportunities to exploit (Brockman and Unlu, 2011; DeAngelo et al., 2006; Fama and French, 2001; Grullon, Michaely and Swaminathan, 2002). Contrary to negative effect of growth on dividend policy, reputation building theory proposes arguments on a positive effect whereby relatively higher growth firms pay higher dividends (Flavin and O'Connor, 2017). In general, whether there are appealing growth opportunities for a firm, both shareholders and firm managers prefer reinvestment for the sake of the higher payouts in the future. This heterogeneity in dividend policy are, indeed, highly driven by the changing firm characteristics over time which eventually decide SMEs to initiate or cut dividends.

Therefore, multiple perspectives expect that dividend payouts vary over time within the same firm and we expect that firm-year level factors may explain meaningful variance in the dividend policies of privately held SMEs. Thus,:

Hypothesis 1: A significant portion of variation in dividend payout policies of SMEs is attributable to firm-year specific effects.

2.2 Firm effect

Existing literature mostly focuses on how firm characteristics impact dividend policies. Scholars have shown that they are the most important determinant of dividend variation among

listed firms (Erkan et al., 2016), while there is a lack of evidence to what degree dividends of SMEs vary due to firm specific factors. Resource-based theory, in general, claims that firms differ from each other by the way managers allocate resources and capabilities resulting in different strategies (Barney, 1991). Financing policies such as cash, profitability, debt and growth opportunities are found to be both statistically significant and economically important for dividend policy in listed firms (Brockman and Unlu, 2011; DeAngelo, DeAngelo and Stultz, 2006; Fama and French, 2001) and in privately held firms (Cadenovic, Deloof and Paeleman, 2022; Michiels, Voordeckers, Lybaert and Steijvers, 2015). Privately held firm's cash, profitability, size and age increase the likelihood of paying out dividends, while debt and investment opportunities discourage paying out dividends (Cadenovic et al., 2022). Managers are in control over the future free cash flow and they are often pressured by firm shareholders "not to sit on the cash" but distribute it in the form of dividends. Free cash flow theory suggests that excess cash directs managers toward the low return projects, and proposes debt as a substitute for dividends to prevent managers in wasting cash (Jensen, 1986). Nevertheless, more debt will incur higher bankruptcy risk and higher interest rates. Private firms must pay higher borrowing costs than public firms (Campello, Giambona, Graham, and Harvey, 2011; Saunders and Steffen, 2011). For SMEs that excessively rely on debt as a source of funding (Berger and Udell, 1998; Deloof et al., 2015; Hanssens et al., 2016; La Rocca et al., 2010;) this implies they will give the priority in servicing loans and refrain from paying out dividends while in the same time creditor contracts restrict distribution of dividends (Borckman an Unlu, 2009). SME's debt policy thus significantly determine their dividend policy.

Differences in ownership structures of privately held SMEs might also influence their dividend policies. Traditionally, scholars view dividends as a tool to limit the rent extraction by controlling shareholders, where they commit to pay the dividends to all shareholders (Faccio, Lang and Young, 2001; La Porta et al., 2000; Rommmens et al., 2012). In privately held firms with a few outside shareholders, where the roles of owner and manager are often not

separated, dividends can serve as a conflict-reducing tool between controlling and minority shareholders, and a tool to attract minority investments (Berzins, Bøhren, and Stacescu, 2018). Controlling shareholders of privately held firms could use dividends intentionally to build the trust and "reputation for fairness". Higher equity stakes represent a higher potential for conflicts which, in contrast to opportunistic theory, will induce firms to pay higher dividends. Eventually, this will attract more minority investments in the firm (Berzins et al., 2018). In addition, privately held firms with less shareholders cut dividends more often than those with more dispersed ownership (Michaely and Robert, 2006). Similarly, fully owned firms, without minority shareholders, pay fewer dividends, while privately held firms that are part of the group pay more dividends than independently owned firms (Rommens, Cuyvers and Deloof, 2012). Scholars also showed that intra-familial, principal–principal conflicts within privately held family firms lead to a higher likelihood of paying out dividends (Michiels, Voordeckers, Lybaert et al., 2015). These findings strongly suggest that a considerable variation among dividend policy is due to the specific firm level ownership structure. Based on the previous findings and theory, we expect that firm level factors may explain meaningful variance in the dividend policies of privately held SMEs. Thus, :

Hypothesis 2: A significant portion of variation in dividend payout policies of SMEs is attributable to firm specific effects.

2.3 Industry effect

Firms tend to strategically cluster within industries to improve their competitive advantage and performance (McNamara, Aimeand and Vaaler, 2005). Firms are economically bounded at the industry level as they serve the same customers and compete for the financial and human capital (Grennan, 2019). In a dividend context, firms tend to behave similarly, whereby peer effects are reflected through variations in firms' behaviour as a response to industry behaviour

(Grennan, 2019). Industry players 'execute' a shared reality regarding strategic decision-making processes (Van Caneghem and Aerts, 2011).

Growth potential of a firms depends on the growth prospects of the industry it is operating in. Early work of Baker (1988) and Michel (1979) show there is a significant variation in dividend payouts of listed firms operating in different industries. Dempsey, Mlaber and Rozeff (1993) build on their findings and argue whether industry effect persist over time. Authors found the effect, however only in few industries was persistent over time. Firms operating in a capital intensive industry are expected to provide less dividends than in a labour intensive industry, such as services (Manneh and Naser, 2015). Since more funds are needed for capital investments than for paying employees, those firms would refrain from paying dividends. Private firms have a competitive advantage compared to their listed peers due to nondisclosure requirements, which shields their strategies. This could reflect in smaller industry effects on their dividend policy. Moreover, a niche market or a dominant position in a smaller part of the market can be appealing to private firms (Ebben and Johnson, 2005) which further could reduce the industry effect due to lower competition.

Firms often make dividend decisions by replicating direct competitors within an industry, which Van Caneghem and Aerts (2011) call intra-industry conformance effect in dividend policies. These authors argue that the firms in their sample of US large, listed firms are more likely to pay dividends if they are active in an industry with a high density of dividend paying peers, where individual dividend payout levels tightly follow the industry average payout. However, current empirical work is lacking onto what extent industry effects matter for dividend policy of SMEs. We expect that “shared reality” in a specific industry, thus, shared systematic risk significantly contributes to the overall variation in dividend policies. For example, due to a trade-off between persistent dividends and exploitable investment opportunities, we could expect that a SME would change its dividend policy as investment opportunities change in a particular industry. For example, the fast growing technology sector

induced many firms to forgo dividends and pursue investment opportunities (see: DeAngelo, DeAngelo and Skinner, 2004; Denis and Osobov, 2008). As industry matures overall it further increases the chances of all its firms to opt for distribution. Furthermore, SMEs could compete for outside investors by providing regular dividends. Using a large international sample of listed firms, Javakhadze, Ferris and Sen (2014) find a strong positive effect of industry competitiveness and dividend smoothing. These authors argue that as competitiveness in an industry declines, firms smooth dividends less, suggesting that firms use dividends to distinguish from the peers when attracting new investors. The same effect could be incorporated in an overall industry level effect driving the variation in dividend policy of SMEs due to their more limited access to external capital in compare to listed firms. Javakhadze et al, (2014) also find that industry opacity is inversely related to dividend smoothing, which means that increased information asymmetry in an industry decreases dividend smoothing. Overall, based on these arguments, industry level effects are found to be relevant in explaining the variation of dividend policy and we aim to measure its proportion for dividend payout policies of SMEs. Finally, variation in dividend policy of listed firms created by industry peers (Massa, Rehman and Vermaelen, 2007) is known as a payout wave (Farre-Mensa, Michaely, and Schmalz, 2014). However, this evidence does not explain whether the phenomena could be found among dividend policy of SMEs, and we lack the knowledge whether they conform or dilute with the industry average. Nevertheless, we expect that industry level factors may explain meaningful variance in dividend policies of privately held SMEs. Thus, :

Hypothesis 3: A significant portion of variation in dividend payout policies of SMEs is attributable to industry specific effects.

2.4 Region effect

Different regions within a country represent a different economic environment with relatively homogenous formal and informal institutions. Regions are territorially and institutionally bounded and those boundaries have the autonomous power to shape their development (Chan, Makino and Isobe, 2010). A within country local financial system is found to significantly affect the financial policies of privately held firms (Deloof et al., 2019; Deloof and La Rocca, 2015; La Rocca et al., 2010). Different regions within one country significantly affect SMEs' access to debt, determine their use of trade credit (Deloof and La Rocca, 2015; La Rocca et al., 2010), and cash holdings (Fasano and Deloof, 2019). Local financial development decreases bankruptcy chances of medium-sized firms and increases access to credit for small firms (Arcuri and Levratto, 2020). However, evidence on how different regions (with their own characteristics) within one country influence dividend policies of SMEs is limited. Previous scholars found that country-specific regulations such as tax policies (see: Berzins, Bøhren, and Stacescu, 2018; 2019) significantly affect dividend policy of privately held firms. Institutions not only vary substantially between countries, but also within them (Chan et al., 2010). Firms tend to concentrate in the locations where institutional and financial development is favourable and create investment opportunities. Local financial development is positively related to growth opportunities (Guiso, Sapienza and Zingales, 2004) and growth further affects dividend policy of privately held firms (Cadenovic et al., 2022). In a less developed financial environment with limited access to debt, privately held firms will have to keep more precautionary cash (Fasano and Deloof, 2021) which could have as a consequence a decreased ability to provide dividends. Persistent influence of regions on firm performance found among listed firms (Chan et al., 2010) evokes the question to what extent regions affect SMEs.

Besides formal institutions, national culture plays an important role in firms financial decisions and economic outcomes (Guiso, Sapienza and Zingales, 2006). National culture effect is widespread, from its effect on the protection of creditor's rights (Stulz and Williamson,

2003), corporate governance (Licht et al., 2005), investor's risk aversion (Frijs, Gilbert, Lehnert et al., 2013; Hilary and Hui, 2009). Few scholars observed national culture as a significant factor that affects manager's decisions. Namely, national culture shapes the manager's perception of agency and information asymmetry problems within a firm (Javakhadze et al., 2014), while shareholders shape their preferences according to their cultural values. Their perception, thus, transfers on firm's dividend decisions and creates a significant effect of national culture on dividend policy (Javakhadze et al., 2014; Shao, Kwok and Guedhami, 2010). Indeed, Shao et al. (2010) suggest that pronounced social trait such as conservatism, where investors value more family security and the harmonious relationships with managers and choose low risk assets, positively affect dividend payouts. On the contrary, a mastery, treat depicting more independent societies where managers and shareholders favour investing cash in future growing opportunities, lowers dividend payouts (Shao et al., 2010). Similarly, cultural individualism and masculinity increase dividend smoothing (Javakhadze et al., 2014). However, all these studies lack the evidence on the within country, national differences in social treats and their effect on dividend policy. We address this question and investigate to what extent dividend policy of SMEs varies across different regions in Belgium where SMEs operate in three culturally and administratively diverse regions with their own language, government, legislation and independent decision making.

Overall, we expect that region level factors may explain meaningful variance in dividend policies of privately held SMEs. Thus, :

Hypothesis 4: A significant portion of variation in dividend payout policies of SMEs is attributable to within country, region effects.

3. Data, Variables and Methods

3.1 Sample

We test our hypotheses on a sample of independent, privately held Belgian SMEs between 2005 and 2018. We collect data from the Bel-First database maintained by Bureau van Dijk (BvD), a Moody's Analytics company, and one of Europe's leading electronic publishers of business information, which offers electronic access to detailed yearly financial statements of all Belgian firms (Paeleman, Fuss and Vanacker, 2017). First, we selected Belgian privately held SMEs. Following the EU definition, SMEs are those that employ less than 250 full time employees and that report annual turnover of less than 50 million euros (and/or annual balance sheet total less than 43 million euros) (European Commission, 2015). Second, we excluded financial and utility firms as those are subject to different government regulations (e.g., Allen and Michaely, 2003; Berzins et al., 2018; DeAngelo et al., 2006; Grullon and Michaely, 2002). Third, we also excluded 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. Fourth, we selected firms with minimum one employee to eliminate "ghost" firms and we considered only those firms with positive total equity (e.g., DeAngelo et al., 2006; Hasan and Cheung, 2018; Owen and Yawson, 2010). Fifth, we exclude firm-years when the firm is not legally allowed to pay a dividend according to Belgian legislation. Belgian firms cannot 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 (De Backer et al., 2014). Finally, we deleted firms with less than three firm-year observations, to enable us a reliable variance decomposition estimation (Erkan et al., 2016; Goldszmidt, Brito, and Vasconcelos, 2010). Our sampling procedure results in an unbalanced panel of 800,049 firm-year observations nested in 110,246 Belgian, independent SMEs, allowed to pay dividends, operating in 514 different 4-digit NACEBEL industry codes (64 different 2-digit NACEBEL industry codes) and located in three regions (including 11 different provinces) for

the period between 2005 and 2018.[2] All variables used in this study are based on unconsolidated financial statements.

3.2 The Belgian context

In this paper we focus on the Belgian context. Belgium consists of eleven different provinces in which SMEs are nested and operate (including Antwerp, Walloon Brabant, Brussels, East-Flanders, Hainaut, Liège, Limburg, Luxembourg, Namur, Flemish Brabant and West-Flanders). Together they form three wider Belgian territory regions: the Flemish Region, the Brussels-Capital region and the Walloon Region. All provinces are administratively independent and exercise their power autonomously. However, the power is bounded to the province and its interests while higher authorities are in place for the general, federal state interests. Language and culture also differ significantly. These three independent regions have their own government and legislation and independent decision making upon matters such as culture, education, language etc. Therefore, these three unique cultural groups, with different language and independent decision making form a diverse setting in Belgium which allows us to investigate the effect of region effects (and as such different formal and informal institutions) on the dividend policy of differently located SMEs. Firstly, we decompose the variance on a province level because we expect that provinces proxy better for economic differences compared to the three wider Belgian territory regions. In addition, we conduct a robustness analysis where we account for three different and wider defined regions where cultural differences could play a more important role in driving differences in financial behaviour of firms.

3.3 Variables

We decompose, break down, the variation of dividend policy. We use different measures of dividend policy. Consistent with prior research (Brockman and Unlu, 2011; DeAngelo et

[2] We collected 2004 data to calculate the lagged variables for the initial year 2005 in our data.

al., 2006; Erkan et al., 2006; Fama and French, 2001; Michiels et al., 2015; Rommens et al., 2012; Shao et al., 2010), we measure dividend policy by using a dummy *DIV*, which is equal to one if the firm pays dividends in year t and zero otherwise. Second, we use the dividend to total assets ratio, *Div/TA*, which is equal to total dividends paid in year t over the total assets in year t (Rommens et al., 2012; Shao et al., 2010). Third, we use the dividend to cash flow ratio, *Div/CF*, which is dividends paid in year t scaled by cash flow in year t-1 (Faccio et al., 2001; La Porta et al., 2000; Rommens et al., 2012). Fourth, we use the dividend to earnings ratio, *Div/E* which is dividends paid in year t over net income in year t-1 (Berzins et al., 2018, 2019; Faccio et al., 2001). Definitions of all variables are summarized in the Table 1.

Insert Table 1 here

We include four independent variables to examine the heterogeneity in dividend policy. The *Firm-year* effect accounts for the amount of variation across the 14-year period studied between 2005 and 2018 of dividend policy of SMEs. The year of observation reflects the firm-year effect. The *Firm* effect denotes the portion of the variance in dividend policy that can be attributed to the differences among the SMEs themselves. We use a unique ID code for each firm. The *Industry* effect denotes the portion of the variance in dividend policy attributable to the differences among 4-digit NACEBEL industries in which the SMEs operate. In addition, we use 2-digit NACEBEL industry codes in the robustness analysis. Finally, the *Region* effect that accounts for the portion of differences among dividend policy of SMEs operating in different regions in Belgium. We use two different measures to capture the effect of region. In our main analysis we use eleven different provinces in Belgium to capture the effect of different economic prospective for firms registered in these provinces. In the robustness analysis we use three wider regions Flanders, Wallonia and Brussels.

3.4 Variance decomposition analysis

Several techniques have been used throughout the literature in decomposing the variance of firm financial policies, for example: standard errors (SE), nested analysis of variance (ANOVA) or variance components analysis (VCA) (i.e. McGahan and Porter, 2002; McGahan and Victer, 2010; Schmalensee, 1985; Short et al., 2007). However, research found several drawbacks of these methods (see Misangyi, Elms, Greckhamer et al., 2006 for a detailed overview). For example, ANOVA does not account for an order in which effects are analyzed, and which in turn can affect the results. In addition, it has difficulties in estimating the size of effects. Hierarchical linear modelling (HLM) technique, on the other hand, enables us to directly and simultaneously estimate the portion of the variance accounted for each level of nesting in the data (Chan et al., 2010; Erkan et al., 2016). Namely, HLM estimates how much each level of analysis contributes to the overall variance in dividend policy of SMEs. The main advantage is that it addresses the lack of the independence between the effects (Misangyi et al., 2006). We hypothesise that the dividend policy of SMEs vary significantly at four different levels, namely, firm-year, firm, industry and region levels. Therefore, these levels in sum account for the total variance of dividend policy. The model we apply is an empty, intercept-only model, which does not incorporate any explanatory variable within levels. In this study, we simply break down the variance without specifying any of the variables that explain it.

Multilevel models, unlike standard linear models, assume that intercepts and slopes of the units of analysis (in our case SMEs) vary across the levels (in our case firm-year, firm, industry or region). In our study, this means that intercept for dividend policy is different for different SMEs, years or industries. Therefore, these coefficients are random which the HLM model aims to explain (Erkan et al., 2016). Varying intercepts will move the average value for the entire level of analysis, while different slopes indicate that the relationship between the dependent and independent variable is not the same across the level (Hox, Moerbeek and Schoot, 2018). This arises from the assumption that the units from the same group will be more similar to each other than to units in another group. This assumption is valid because, for

instance, firms operating in the same industry are more similar to each other, than to firms active in another industry. As a result, the average correlation (the so-called intraclass correlation) between variables measured in SMEs from the same industry will be higher than the average correlation between variables measured in SMEs from different industries. Standard statistical tests that rely on the assumption of independent observations will, thus, not hold, and that is always the case for nested data (Hox et al., 2018). Therefore, in this study we assume that dividend policy of SMEs operating in the same industry will be more similar to one another than to dividend policy of SMEs from another industry and we, thus, hypothesize that industry significantly matters in explaining the variation of dividend policy. This is the main advantage of the multilevel model which allows modelling the random effect on the outcome variable for each level of the data hierarchy (Hough, 2006), i.e., dividend policy differences within the firms across the years, dividend policy differences between firms, differences between firms within industries and differences between firms within same regions.

It is important to note that in the Tables 3-9 we decompose the variance of the intercept only model, namely the variance of the averages of dividend measures while imposing no explanatory variable to observe whether they explain that variation. Thus, we acknowledge that the average dividend policy differs from firm to firm, industry to industry, and from region to region. By specifying a simple OLS regression equation with the one effect in isolation we would ignore this heterogeneity. Following the previous literature on variance decomposition methods (e.g. Chan et al., 2010; Erkan et al., 2016; Short, Ketchen, Palmer et al., 2007) we define four different levels, decomposed as follows:

Level 1 model:

$$Dividend\ policy_{ijkl} = \alpha_{0jkl} + e_{ijkl}$$

Level 2 model:

$$\alpha_{0jkl} = \beta_{00kl} + r_{0jkl}$$

Level 3 model:

$$\beta_{00kl} = \gamma_{000l} + u_{00kl}$$

Level 4 model:

$$\gamma_{000l} = \delta_{0000} + v_{000l}$$

where Dividend policy$_{ijkl}$ represents a dividend measure of *i*th firm-year in the *j*th firm, operating in the *k*th industry and located in the *l*th region. α_{0jkl} is the dividend policy average for the firm j in which firm-year ijkl is nested, while e_{ijkl} is a level 1 error term, which denotes the deviation of dividend policy of firm-year ijkl from the firm's average. Furthermore, firm's average dividend policy is explained by the kth industry average dividend policy, β_{00kl} nested in the region l, summed with the deviation of firm's jkl dividend policy from the industry average, r_{0jkl}. Similarly, industry average dividend policy in level 3 is explained by the average regional dividend policy k, $\gamma_{000l,}$ and an error term u_{00kl}. Finally, a region's average dividend policy is explained by the average dividend policy of all regions δ_{0000} and the error term which measures the deviation of the dividend policy of a region l from the global mean, v_{000l}. When combined into mixed model, we estimate the following equation:

$$Dividend\ policy_{ijkl} = \delta_{0000} + v_{000l} + u_{00kl} + r_{0jkl} + e_{ijkl}$$

We use MIXED command in STATA to analyse this model, which we estimate with the maximum likelihood method.

4 Variance Decomposition Results

4.1 Summary statistics

Our sample is mainly consistent of dividend nonpayers. Out of 800,049 observations, 17% are paying dividend. On average dividends are 11% of total assets, 61% of cash flow and 157% of earnings. Earnings are lagged since the last year earnings will affect dividend decisions more

than earnings in the same year. These statistics reveal that dividends are economically important for SMEs. Most of the dividend payers are located in provinces of Antwerp, 18%, East-Flanders 14% and West Flanders 13%. Those provinces are part of the wider Flanders region, where the most of SMEs are located. Statistics for the whole sample of dividend payers located in all of the provinces are reported in the appendix. In terms of industries, the most of the dividend payers operate in a wholesale trade 19%, retail trade 16% and construction 14%. These statistics show that location and industry could play an important part in their decisions whether to provide a dividend payout.

4.2 Relative contribution of firm-year, firm, industry and region effects to dividend policy of SMEs

Table 3 provide the variance component estimates for the four independent effects, firm-year, firm, industry and provinces. Next to the estimates we report percentages that show the relative importance of each of the levels. We decompose the variance of different dividend policy measures, i.e., dividend dummy (Model 1), dividend to total assets ratio (Model 2), dividend to cash flow ratio (Model 3), and dividend to earnings ratio (Model 4). All variables are defined as in Table 1. In Table 3 we treat firms-years as nested within firms, firms within industries and industries within provinces (Ma, Yong and Fitza, 2013; Chan et al., 2010). In Model 1, where our dependent variable is dividend dummy (DIV) we apply the HLM method on the whole sample of SMEs, both which pay and do not pay dividends. In the Models 2-4 we select only those observations from our sample which pay dividends. Our results show that firm-year and firm levels are the most relevant levels of the analysis for dividend policy of SMEs. In Model 1, the variance of whether SME will pay out dividends accounts for 63% on the firm-year level. Firm level accounts for 35% and the remaining 2% is driven by industry specific factors. Provinces do not account for any variation in the SMEs decision to pay dividends. Model 2 shows almost equal importance of firm-year and firm level factors in the

variation of dividend to total assets ratio (Div/TA), 47% and 53% respectively. While the remaining two levels, industry and provinces, do not account for any of the variation in Div/TA. In model 3, firm-year effects account for a significant 56% of the variation in Div/CF. The next most important driver are firm level effects with 41% stake in the total variance. Industry and provinces account for negligible 1% each in the variation of Div/CF. Finally, in Model 4 we find similar pattern with 67% of variation in Div/E attributable to firm-year effects, and 32% attributable to firm level effects. These results support our Hypothesis 1 and 2. While, the negligible economic effect, although statistically significant, of industry and provinces do not provide support for Hypothesis 3 and 4. Chi-square test shows that all of the independent effect variables are statistically significant at 1%. We repeat the same analysis to check whether 2-digit industry codes would affect our results. The results (available in the appendix, Table A.1) are identical.

Insert Table 3 here

In Table 4 we assume provinces are nested within industry. Namely, province development can significantly vary due to the types of industry they are focused on (Ma et al., 2013). Thus, when a province or a region specializes in one type of industry we could assume industry to be higher level, and thus threat provinces as nested within industries. Therefore, in Table 4 we observe the relative importance of the firm-year effects nested within firms, firm effects nested in provinces, while provinces are nested within an industry as the highest level of the analysis. Similarly, as in Table 3, we find that all the effects are statistically significant at a 1% level. Results are very consistent. We find that firm-year and firm effects are the most important, both accounting for 97% of variation in SMEs' decision to provide a dividend. 1% of a variation is attributable to provinces and remaining 2% to differences in industry. Variation decomposition of SMEs' Div/TA, Div/CF and Div/E remain the same as in Table 3. Firm-year effects and firm effects remain the most important in driving the differences in these ratios. We

fail to find the economically significant effect of provinces and industry. Results, thus, provide the support for Hypothesis 1 and 2, while our results do not support Hypothesis 3 and 4. In addition, we run the model with the industry level defined at 2-digit NACEBEL codes. Results stay the same (available in the appendix, Table A.2).

Insert Table 4 here

In Tables 5-6 we report the results of the variation in dividend policy of SMEs while we observe firms as nested within wider regions, namely Flanders, Wallonia and Brussels-capital region, instead of provinces. We find that all the independent effects are still statistically significant at 1% level. The firm-year level account for the most variation in all dividend policy measures of SMEs, followed by firm level effects as next most important driver of the differences in their dividend decisions. 62% of the differences between the decision whether to pay a dividend (DIV) are driven by firm-year effects. Firm level effects account for 35%, and industry for the remaining 3%. The variation in all the dividend payout ratios in Model 2-4 are fairly consistent with the result in Tables 3 and 4. We additionally address the grouping of industry at the 2-digit NACEBEL code levels as a robustness analysis. The results stay the same (available in the appendix, Table A.3 and Table A.4). Our results are strongly robust and provide support for the Hypothesis 1 and 2, while we reject the Hypothesis 3 and 4.

Insert Table 5 and Table 6 here

Additionally, we analyse the relative importance of our three-level model over time. We want to analyse whether effects stay stable or show a trend over time. Effect sizes are reported in Table 7 over the observed period from 2005 to 2018. Firm level effect remain the most important and the largest effect driving dividend policy of SMEs over time. There are no large fluctuations over the years and they are without a clear trend. Industry and provinces play a slightly more important role for dividend to total assets and dividend to cash flow ratios than

for dividend to earnings ratio. However, the time variant portion of firm, industry and province levels in the main analysis is likely included in the firm-year effect (Erkan et al, 2016). Industry level effect appears to increase, especially in 2017 , accounting for 6% of variation of Div/TA and Div/CF. Provinces still drive very small percentage, up to 2% of the total variation in dividend measures.

Insert Table 7 here

Since our province level include eleven provinces where SMEs are nested, for the robustness of our results we repeat our analysis using restricted maximum likelihood which should provide consistent estimates when the level has more limited number of groups. We obtain identical results as in tables we reported. To further check the robustness of our results, we exclude province level and analyse three level HLM model. The results remain the same.

4.2 Young versus mature firms

Firms are more likely to pay dividends the more mature they become and more established firms have been the primary focus in the literature on firm dividends. Also in the variance decomposition literature most studies have focused on large, multinationals (an exception is Short, McKelvie, Ketchen and Chandler, 2009). In this analysis, we check to what extent dividend policy determinants can differ between new firms and more established ones. While young firms will opt for exploiting investment opportunities rather than provide a payout, more established firms are more likely to have the excess cash for payout while they exhausted all the investment opportunities (Brockman and Unlu, 2011, DeAngelo et al., 2006). New firms are also facing a strong competition from their more established peers and they also face a liability of newness (Stinchcombe, 1965). Industry specific characteristics such as barriers to entry and fierce competition could lead to their failure (Shepherd, Douglas and Shanley, 2000; Short et al., 2009). These firms could be more affected by industry effects than their peers as

they face barriers of entry, they lack market legitimacy, especially form customers, financiers and suppliers (Short et al., 2009). New firms have to develop brand awareness and market acceptance while learning new tasks (McDougall, Oviatt and Shrader, 2003). Moreover, new firms are likely to be short on cash and less likely to provide a dividend (DeAngelo et al., 2006). We, therefore, investigate to what extent firm-year, firm, industry and provinces levels play a different role in dividend decisions of new SMEs and more established SMEs. We use the age threshold of six years (e.g., Brush, 1995; Zahra, Ireland and Hitt, 2000) to create two subsamples in our data. We also check for the threshold of ten years as a robustness analysis.

Results are shown in Table 8. In Panel A, Models 1-4 we compare the results of variance decomposition between new firms, i.e., firms six years old or younger, and established firms, i.e., firms more than six years old. In Panel B, Models 5-8 we compare the results of variance decomposition using the 10 years threshold between new and established firms. The most of the differences between dividend polices of both new and established firms, in both Panel A and B, is due to firm-year effects, except for DIV/TA, models 2 and 6, where firm effects play more important role. We observe little difference between panels in terms of firm year and firm effects for both new and established firms. Industry effects become more important the younger the firm is. In Panel A, Model 2 industry accounts for 7% for the variation in DIV/TA of young firms, and play no role for established firms. In Model 3, industry account for 4% and provinces for 2% in DIV/CF. In Panel B, the highest industry effects of 2% is on DIV and DIV/CF, in Models 5 and 7. Finally, province effects remain consistent across the subsamples, showing no importance except for 2% in DIV/CF for both panels. There is an evident difference in the number of observations which could affect our results. We observe almost no difference between new and established firms in the relative importance of the effects for DIV/E. We also observe less difference in the results between new and established firms when we apply the higher threshold of 10 years. Thus, we can conclude the lower threshold we impose and the younger firm is that breakthrough in the market significantly affects the variation between their

dividend policy. However, the moment we impose higher threshold between new and established firms, the industry effect vanishes.

Insert Table 8 here

4.3 Small versus large firms

Firm size is an inevitable factor observed in the studies of dividend policies, and it was always found to significantly affect dividend policy. It is thus important to account for difference in firm size while we decompose the variance of dividend policy. We decompose the variance of dividend policy of micro, small and medium firms. We use the definition of European Commission and split our sample in three different subsamples according to firm size measured by the total number of employees. Namely, micro firms have less than 10 employees, small firms employ between 50 and 10 employees, while medium firms employ between 250 and 50 employees. Results are presented in Table 9. Most firms in our sample are micro firms. Our findings show that firm-year and firm effects are still the most important factors driving the differences between dividend policies among all three subsamples. Industry account for 10% of the variation of dividend payout measured by dividend to assets ratio for the sample of medium firms, while it plays no role for the samples of small and micro firms. Provinces account the most for dividend to cash flow ratio of medium and small firms, that is 3%.

Insert Table 9 here

5 Conclusion

In this study we decompose the variance of dividend policy to investigate which are the most important drivers of its difference among SMEs. Previous studies looked at the factors affecting their dividend decisions in isolation, while we simultaneously analyse four different levels of effects which account for a significant part of their variance. Even though SMEs pay dividends on a regular basis and they account for the important part of their cash, we do not know what are the most important drivers of those decisions. Our results show that firm-year and firm specific factors are the most important in the variance of dividend policy and account for the largest portion. Differences in a decision whether to pay a dividend, dividend to total assets ratio, dividend to cash flow and dividend to earnings ratio are by far mostly affected by firm-year and firm level factors, while industry and provinces play a very little role. Firm level effects are the most important when observed over time. Our results are robust on different grouping of industries, namely 4-digit and 2-digit NACEBEL codes, as well as on using provinces or wider defined, regions in Belgium. Our findings on the firm-year and firm level effects are consistent with the results on a sample of listed firms across countries (Erkan et al., 2016). Furthermore, variance decomposition studies on firm performance showed the firm level effects are by far the most important effects in driving the differences between the performance of the firms (see e.g. Hawawini et al., 2003; Misangyi et al., 2006; Rumelt, 1991). Industry-level effects account for between 4 and 20 percent of performance variance (McGahan and Porter, 1997; Rumelt, 1991). Similarly as in Rumelt (1991), we can draw the conclusion that firms, and their dividend policy, differ from one another within industries "a great deal more than industries differ from one another." Namely in our study "intra-industry effect dominated the inter-industry effect" (Rumelt, 1991, pp 170). Industry is least important compared to firm intrinsic effects that are the most important factors driving the differences in dividend policy of SMEs.

Our study contributes to the scares literature on dividend policy of privately held firms. Unlike other studies that mostly analysed listed firms, we are interested in SMEs, the most

dominant type of firms in the world. Their payout decisions are economically important and account for more than a 60% of their cash flow. Furthermore, in previous dividend literature and literature on SMEs, the role of regions in driving their financial decisions is still relatively underexplored. We add to the literature by examining the within country, region effects in driving dividend policy of SMEs. The effect of regions has not been studied in dividend literature so far. We shed new light by finding that provinces or regions play very limited role whatsoever in driving the variation between dividend policy of SMEs. We fail to find the evidence of the economically important portion of the variance in dividend policy driven by this effect, however, it is statistically significant effect.

Finally, we add to the literature which applies variance decomposition method by looking at firm dividend policy, as a strategic decision of SMEs. Studies that used the variance decomposition method predominantly explored the drivers of firm profitability. Most of the these studies find the firm specific factors to be the most important factors in driving the differences in firm performance (see: Goldszmidt et al., 2010; Hawawini et al., 2004; Hough, 2006; Misangyi et al., 2006; Short et al., 2007). Firm level effects are dominant in driving sales and sales growth among new ventures, while less in the total variance of the performance of new ventures compared to more established firms (Short et al., 2009). Industry matters little for the survival of such firms, while studies on performance found that industry-level effects account for between 4 and 20 percent of its variance (McGahan and Porter, 1997; Rumelt, 1991). Chan et al. (2010) identifies the importance of subnational effects, next to the firm, industry and country levels in the total variance of firm performance. However, our findings are contrary to Chan et al. (2010) who instead find an important portion of variation of foreign affiliate performance driven by regions in emerging economies, while less so in advanced economies. Belgium is an advanced, but rather a small economy. Thus, provinces may not exhibit a greater difference in terms of macroeconomic environment for firm development and which lead to less heterogeneity in financial decisions of SMEs.

This study has several limitations. Firstly, we don't examine the reasons behind variation in dividend policy of SMEs across different levels. We merely show how much each level contributes to the overall variation in dividend policy. Secondly, we focused on one country, while an international sample could shed more light on a variation in SMEs from different (but similar) countries. An interesting future research could be done in the direction of differences between advanced and emerging countries, and their privately held firms. Finally, we assume that after applying firm, industry and region level effects, the residual variance is due to variation over time, however, other levels might be introduced such as corporate groups, in which firms are naturally nested.

References

Arcuri, G., and Levratto, N. (2020). Early stage SME bankruptcy: does the local banking market matter?. *Small Business Economics*, *54*(2), 421-436. https://doi.org/10.1007/s11187-018-0042-4

Barney, J. (1991). Special Theory Forum The Resource-Based Model of the Firm: Origins, Implications, and Prospects. *Journal Of Management*, *17*(1), 97-98. https://doi.org/10.1177/014920639101700107

Bae, S., Chang, K., and Kang, E. (2012). Culture, corporate governance, and dividend policy: International evidence. *Journal Of Financial Research*, *35*(2), 289-316. https://doi.org/10.1111/j.1475-6803.2012.01318

N. Berger, A., and F. Udell, G. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal Of Banking & Finance*, *22*(6-8), 613-673. https://doi.org/10.1016/S0378-4266(98)00038-7

Berzins, J., Bøhren, Ø., and 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., and 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

Baker, H.K. (1988). The Relationship Between Industry Classification and Dividend Policy. *Southern Business Review*, *14*(1), 1-8.

Brav, A., Graham, J., Harvey, C., and Michaely, R. (2005). Payout policy in the 21st century. *Journal of Financial Economics*, *77*(3), 483-527. https://doi.org/10.1016/j.jfineco.2004.07.004

Brockman, P., and 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

Campello, M., Giambona, E., Graham, J., and Harvey, C. (2011). Liquidity Management and Corporate Investment During a Financial Crisis. *Review Of Financial Studies*, *24*(6), 1944-1979. https://doi.org/10.1093/rfs/hhq131

Cejnek, G., Randl, O., and Zechner, J. (2021). The COVID-19 Pandemic and Corporate Dividend Policy. *Journal of Financial and Quantitative Analysis*, *56*(7), 2389–2410. https://doi.org/10.1017/S0022109021000533

Chan, C., Makino, S., and Isobe, T. (2010). Does subnational region matter? Foreign affiliate performance in the United states and China. *Strategic Management Journal*, *31*(11), 1226-1243. https://doi.org/10.1002/smj.854

Chan, C., Patel, P., and Phan, P. (2020). Do differences among accelerators explain differences in the performance of member ventures? Evidence from 117 accelerators in 22 countries. *Strategic Entrepreneurship Journal*, *14*(2), 224-239. https://doi.org/10.1002/sej.1351

Dempsey, S. J., Laber, G. and Rozeff, M. S. (1993). Dividend Policies in Practice: Is There an Industry Effect?. *Quarterly Journal of Business and Economics*, *32*(4), 3-13. https://www.jstor.org/stable/40473096

DeAngelo, H., DeAngelo, L., and Skinner, D. (2004). Are dividends disappearing? Dividend concentration and the consolidation of earnings. *Journal Of Financial Economics*, *72*(3), 425-456. https://doi.org/10.1016/s0304-405x(03)00186-7

DeAngelo, H., DeAngelo, L., and 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

Deloof, M., and La Rocca, M. (2015). Local financial development and the trade credit policy of Italian SMEs. *Small Business Economics*, *44*(4), 905-924. https://doi.org/10.1007/s11187-014-9617-x

Deloof, M., La Rocca, M., and Vanacker, T. (2018). Local Banking Development and the Use of Debt Financing by New Firms. *Entrepreneurship Theory And Practice*, *43*(6), 1250-1276. https://doi.org/10.1177/1042258718783486

Denis, D., and Osobov, I. (2008). Why do firms pay dividends? International evidence on the determinants of dividend policy☆. *Journal Of Financial Economics*, *89*(1), 62-82. https://doi.org/10.1016/j.jfineco.2007.06.006

Ebben, J., and Johnson, A. (2005). Efficiency, flexibility, or both? Evidence linking strategy to performance in small firms. *Strategic Management Journal*, *26*(13), 1249-1259. https://doi.org/10.1002/smj.503

Erkan, A., Fainshmidt, S., and Judge, W. Q. (2016). Variance decomposition of the country, industry, firm, and firm-year effects on dividend policy. *International Business Review*, *25*(6), 1309–1320. https://doi.org/10.1016/j.ibusrev.2016.04.003

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

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

Fama, E., and 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

Fasano, F., and Deloof, M. (2021). Local financial development and cash holdings in Italian SMEs. *International Small Business Journal: Researching Entrepreneurship*, *39*(8), 781-799. https://doi.org/10.1177/02662426211011554

Fidrmuc, J. P., and Jacob M. (2010). Culture, Agency Costs, And Dividends. *Journal Of Comparative Economics*, *38*(3), 321-339. https://doi.org/10.1016/j.jce.2010.04.002

Fitza, M., and Tihanyi, L. (2017). How Much Does Ownership Form Matter?. *Strategic Management Journal*, *38*(13), 2726-2743. https://doi.org/10.1002/smj.2671

Flavin, T., and O'Connor, T. (2017). Reputation building and the lifecycle model of dividends. *Pacific-Basin Finance Journal*, *46*, 177–190. https://doi.org/10.1016/j.pacfin.2017.09.006

Frijns, B., Gilbert, A., Lehnert, T., and Tourani-Rad, A. (2013). Uncertainty avoidance, risk tolerance and corporate takeover decisions. *Journal Of Banking & Finance*, *37*(7), 2457-2471. https://doi.org/10.1016/j.jbankfin.2013.02.010

Goldszmidt, R., Brito, L., and de Vasconcelos, F. (2011). Country effect on firm performance: A multilevel approach. *Journal Of Business Research*, 64(3), 273-279. https://doi.org/10.1016/j.jbusres.2009.11.012

Grennan, J. (2019). Dividend payments as a response to peer influence. *Journal Of Financial Economics*, *131*(3), 549-570. https://doi.org/10.1016/j.jfineco.2018.01.012

Guiso, L., Sapienza, P., and Zingales, L. (2004). Does Local Financial Development Matter?. *The Quarterly Journal Of Economics*, *119*(3), 929-969. https://doi.org/10.1162/0033553041502162

Guiso, L., Sapienza, P. and Zingales, L., 2006. Does Culture Affect Economic Outcomes?. *Journal of Economic Perspectives*, *20*(2), 23-48. http://dx.doi.org/10.2139/ssrn.876601

Grullon, G., Michaely, R., and 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

Javakhadze, D., Ferris, S., and Sen, N. (2014). An international analysis of dividend smoothing. *Journal Of Corporate Finance*, *29*, 200-220. https://doi.org/10.1016/j.jcorpfin.2014.09.007

Hawawini, G., Subramanian, V., and Verdin, P. (2004). The home country in the age of globalization: how much does it matter for firm performance?. *Journal Of World Business*, 39(2), 121-135. https://doi.org/10.1016/j.jwb.2003.08.012

Hox, J., Moerbeek, M. and Schoot, R. (2018). *Multilevel analysis*. 3rd ed. New York, NY: Routledge.

Hough, J. (2006). Business segment performance redux: a multilevel approach. *Strategic Management Journal*, *27*(1), 45-61. https://doi.org/10.1002/smj.498

Krieger, K., Mauck, N., and Pruitt, S. (2021). The impact of the COVID-19 pandemic on dividends. *Finance Research Letters*, *42*, 101910. https://doi.org/10.1016/j.frl.2020.101910

La Rocca, M., La Rocca, T., and Cariola, A. (2010). The influence of local institutional differences on the capital structure of SMEs: Evidence from Italy. *International Small Business Journal: Researching Entrepreneurship*, *28*(3), 234-257. https://doi.org/10.1177/0266242609360614

Leary, M., and Michaely, R. (2011). Determinants of Dividend Smoothing: Empirical Evidence. *Review Of Financial Studies*, *24*(10), 3197-3249. https://doi.org/10.1093/rfs/hhr072

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. W. (2000). Agency Problems and Dividend Policies around the World. *The Journal of Finance*, *55*(1), 1-33. https://doi.org/10.1111/0022-1082.00199

Licht, A., Goldschmidt, C., and Schwartz, S. (2005). Culture, Law, and Corporate Governance. *International Review Of Law And Economics*, *25*(2), 229-255. https://doi.org/10.1016/j.irle.2005.06.005

Lintner, J. (1956). Distribution of Incomes of Corporations Among Dividends Retained Earnings and Taxes. *The American Economic Review*, *46*(2), 97-113. http://www.jstor.org/stable/1910664

Ma, X., Tong, T., and Fitza, M. (2013). How much does subnational region matter to foreign subsidiary performance? Evidence from Fortune Global 500 Corporations' investment in China. *Journal Of International Business Studies*, *44*(1), 66-87. https://doi.org/10.1057/jibs.2012.32

Manneh, M., and Naser, K. (2015). Determinants of Corporate Dividends Policy: Evidence from an Emerging Economy. *International Journal Of Economics And Finance*, *7*(7). http://dx.doi.org/10.5539/ijef.v7n7p229

Massa, M., Rehman, Z., and Vermaelen, T. (2007). Mimicking repurchases. *Journal Of Financial Economics*, *84*(3), 624-666. https://doi.org/10.1016/j.jfineco.2006.02.006

McDougall, P., Oviatt, B., and Shrader, R. (2003). *Journal Of International Entrepreneurship*, *1*(1), 59-82. https://doi.org/10.1023/A:1023246622972

McGahan, A., and Porter, M. (2002). What Do We Know About Variance in Accounting Profitability?. *Management Science*, *48*(7), 834-851. https://doi.org/10.1287/mnsc.48.7.834.2816

McGahan, A. and Victer, R. (2010). How much does home country matter to corporate profitability?. *Journal of International Business Studies*, *41*(1), 142-165. https://doi.org/10.1057/jibs.2009.69

McNamara, G., Aime, F., and Vaaler, P. M. (2005). Is Performance Driven by Industry- or Firm-Specific Factors? A Response to Hawawini, Subramanian, and Verdin. *Strategic Management Journal*, *26*(11), 1075–1081. https://doi.org/10.1002/smj.496

Michaely, R., and Roberts, M. R. (2012). Corporate Dividend Policies: Lessons from Private Firms. *Review of Financial Studies*, *25*(3), 711–746. https://doi.org/10.1093/rfs/hhr108

Michel, A. (1979). Industry Influence On Dividend Policy. *Financial Management*, *8*(3), 22-26. https://doi.org/10.2307/3665034

Michiels, A., Voordeckers, W., Lybaert, N., and 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

Misangyi, V. F., Elms, H., Greckhamer, T., and Lepine, J. A. (2006). A New Perspective on a Fundamental Debate: A Multilevel Approach to Industry, Corporate, and Business Unit

Effects. *Strategic Management Journal*, *27*(6), 571–590. http://www.jstor.org/stable/20142357

Ozkaya, Erkan, H., Dabas, C., Kolev, K., Hult, G., Dahlquist, S., and Manjeshwar, S. (2013). An assessment of hierarchical linear modeling in international business, management, and marketing. *International Business Review*, *22*(4), 663-677. https://doi.org/10.1016/j.ibusrev.2012.10.002

Rommens, A., Cuyvers, L., and 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

Rumelt, R. (1991). How much does industry matter?. *Strategic Management Journal*, *12*(3), 167-185. https://doi.org/10.1002/smj.4250120302

Saunders, A., and Steffen, S. (2011). The Costs of Being Private: Evidence from the Loan Market. *Review Of Financial Studies*, *24*(12), 4091-4122. https://doi.org/10.1093/rfs/hhr083

Schmalensee, R. 1985). Do markets differ much? *The American Economic Review*, *75*(3), 341–351. https://www.jstor.org/stable/1814804?seq=1

Shao, L., Kwok, C., and Guedhami, O. (2010). National culture and dividend policy. *Journal Of International Business Studies*, *41*(8), 1391-1414. https://doi.org/10.1057/jibs.2009.74

Short, J., Ketchen, D., Palmer, T., and Hult, G. (2007). Firm, strategic group, and industry influences on performance. Strategic Management Journal, 28(2), 147-167. https://doi.org/10.1002/smj.574

Short, J., McKelvie, A., Ketchen, D., and Chandler, G. (2009). Firm and industry effects on firm performance: A generalization and extension for new ventures. *Strategic Entrepreneurship Journal*, *3*(1), 47-65. https://doi.org/10.1002/sej.53

Sohl, T., Vroom, G., and Fitza, M. (2020). How Much Does Business Model Matter for Firm Performance? A Variance Decomposition Analysis. *Academy Of Management Discoveries*, *6*(1), 61-80. https://doi.org/10.5465/amd.2017.0136

Stulz, R., and Williamson, R. (2003). Culture, openness, and finance. *Journal Of Financial Economics*, *70*(3), 313-349. https://doi.org/10.1016/S0304-405X(03)00173-9

Withers, M., and Fitza, M. (2017). Do board chairs matter? The influence of board chairs on firm performance. *Strategic Management Journal*, *38*(6), 1343-1355. https://doi.org/10.1002/smj.2587

Van Caneghem, T., and Aerts, W. (2011). Intra-industry conformity in dividend policy. *Managerial Finance*, *37*(6), 492-516. https://doi.org/10.1108/03074351111134718

Wu, Y. (2017). What's behind Smooth Dividends? Evidence from Structural Estimation. *The Review Of Financial Studies*, *31*(10), 3979-4016. https://doi.org/10.1093/rfs/hhx119

Tables and Figures

Table 1. Variable definitions

Dependent variables	**Definition**
Measures of dividend policies	
DIV	Dummy equal to 1 if a firm paid a dividend in year t, zero otherwise
Div/TA	Total dividends paid in year t over the total assets in year t
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

Table 2. Summary statistics.
Number of dividend payers, mean, standard error, 5th percent, median and 95th percent of dividend measures for: the whole sample, three provinces and the three industries with the most concentrated dividend payers. Industries are represented by NACEBEL 2-digit codes.

Dividend payers	N	Mean	SE	p5	Median	p95
Whole sample	132,784					
DIV/TA	132,784	0.11	0.12	0.00	0.06	0.40
DIV/CF	116,692	0.61	0.69	0.02	0.35	2.44
DIV/E	116,172	1.57	2.00	0.00	0.80	7.11
Province						
Antwerp	24,303					
DIV/TA	24,303	0.13	0.13	0.00	0.08	0.40
DIV/CF	21,428	0.68	0.71	0.02	0.43	2.44
DIV/E	21,341	1.69	2.04	0.00	0.90	7.11
East-Flanders	18,918					
DIV/TA	18,918	0.12	0.12	0.00	0.06	0.40
DIV/CF	16,649	0.64	0.72	0.02	0.36	2.44
DIV/E	16,593	1.66	2.08	0.00	0.82	7.11
West-Flanders	17,803					
DIV/TA	17,803	0.11	0.12	0.00	0.06	0.40
DIV/CF	15,762	0.63	0.73	0.02	0.34	2.44
DIV/E	15,693	1.70	2.15	0.00	0.80	7.11
Industry						
Wholesale trade, except of motor vehicles and motorcycles						
DIV/TA	25,382	0.11	0.12	0.00	0.06	0.40
DIV/CF	22,402	0.62	0.68	0.02	0.38	2.44
DIV/E	22,346	1.49	1.88	0.01	0.80	7.11
Retail trade, except of motor vehicles and motorcycles						
DIV/TA	21,262	0.10	0.12	0.00	0.06	0.40
DIV/CF	18,851	0.58	0.69	0.02	0.32	2.44
DIV/E	18,765	1.52	2.00	0.00	0.74	7.11
Specialized construction activities						
DIV/TA	19,201	0.11	0.12	0.00	0.06	0.40
DIV/CF	17,026	0.62	0.72	0.02	0.34	2.44
DIV/E	16,920	1.68	2.11	0.00	0.81	7.11

Table 3. Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).
In Model 1 we decompose the variance of a decision whether SME will pay divided, dividend dummy (DIV) and we use the complete sample of dividend payers and dividend nonpayers. In Models 2-4 we decompose the variance of dividend to total assets ratio (Div/TA), dividend to cash flow ratio (Div/CF) and dividend to earnings ratio (Div/E) on a sample of dividend payers.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.082	63%	0.007	47%	0.306	56%	2.931	67%
Firm	0.045	35%	0.008	53%	0.222	41%	1.379	31%
Industry	0.003	2%	0.000	0%	0.005	1%	0.028	1%
Province	0.000	0%	0.000	0%	0.009	2%	0.040	1%
Total	0.130	100%	0.015	100%	0.542	100%	4.378	100%
N	800,049		126,773		111,629		111,140	

Notes. Firms are nested in industries, industries are nested in regions.

Table 4. Dividend policy variance decomposition using four-level Hierarchical linear model (HLM) where provinces are nested in industries. In Model 1 we decompose the variance of a decision whether SME will pay divided, dividend dummy (DIV) and we use the complete sample of dividend payers and dividend nonpayers. In Models 2-4 we decompose the variance of dividend to total assets ratio (Div/TA), dividend to cash flow ratio (Div/CF) and dividend to earnings ratio (Div/E) on a sample of dividend payers.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.082	63%	0.007	47%	0.306	57%	2.929	67%
Firm	0.045	34%	0.008	53%	0.223	41%	1.386	32%
Province	0.001	1%	0.000	0%	0.009	2%	0.056	1%
Industry	0.003	2%	0.000	0%	0.003	1%	0.015	0%
Total	0.131	100%	0.015	100%	0.541	100%	4.386	100%
N	800,049		126,773		111,629		111,140	

Notes. Firms are nested in regions, regions are nested in industries.

Table 5. Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).
In Model 1 we decompose the variance of a decision whether SME will pay divided, dividend dummy (DIV) and we use the complete sample of dividend payers and dividend nonpayers. In Models 2-4 we decompose the variance of dividend to total assets ratio (Div/TA), dividend to cash flow ratio (Div/CF) and dividend to earnings ratio (Div/E) on a sample of dividend payers. Regions represent the differences between Flanders, Wallonia and Brussels capita region.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.082	62%	0.007	44%	0.306	57%	2.929	67%
Firm	0.046	35%	0.009	56%	0.223	41%	1.387	32%
Industry	0.004	3%	0.000	0%	0.005	1%	0.024	1%
Region	0.000	0%	0.000	0%	0.005	1%	0.027	1%
Total	0.132	100%	0.016	100%	0.539	100%	4.367	100%
N	800,108		126,781		111,636		111,147	

Notes. Firms are nested in industries, industries are nested in regions.

Table 6. Dividend policy variance decomposition using four-level Hierarchical linear model (HLM) where regions are nested in industries.
In Model 1 we decompose the variance of a decision whether SME will pay divided, dividend dummy (DIV) and we use the complete sample of dividend payers and dividend nonpayers. In Models 2-4 we decompose the variance of dividend to total assets ratio (Div/TA), dividend to cash flow ratio (Div/CF) and dividend to earnings ratio (Div/E) on a sample of dividend payers. Regions represent the differences between Flanders, Wallonia and Brussels capita region.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.082	62%	0.007	44%	0.306	57%	2.928	67%
Firm	0.046	35%	0.009	56%	0.223	41%	1.389	32%
Region	0.001	1%	0.000	0%	0.011	2%	0.059	1%
Industry	0.003	2%	0.000	0%	0.000	0%	0.000	0%
Total	0.132	100%	0.016	100%	0.540	100%	4.376	100%
N	800,108		126,781		111,636		111,147	

Note: Firms are nested in regions, regions are nested in industries.

Table 7. The firm-, industry- and province-level effects over time using three-level Hierarchical linear model (HLM).
The variance decomposition of dividend to total assets (Div/TA), dividend to cash flow (Div/CF) and dividend to earnings ratio (Div/E) over time using three-level HLM on a sample of dividend payers. We applied restricted maximum likelihood estimation.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Div/TA														
Firm	96%	98%	98%	97%	98%	98%	97%	97%	95%	95%	98%	96%	93%	94%
Industry	2%	0%	1%	1%	1%	0%	1%	1%	3%	2%	1%	2%	6%	4%
Province	2%	2%	1%	2%	1%	2%	2%	2%	2%	3%	1%	2%	1%	2%
N	6,284	5,937	7,704	7,949	8,024	11,371	12,319	10,674	16,260	11,788	7,060	5,544	4,344	5,260
Div/CF														
Firm	96%	98%	98%	97%	98%	98%	97%	97%	95%	95%	98%	96%	93%	94%
Industry	2%	0%	1%	1%	1%	0%	1%	1%	3%	2%	1%	2%	6%	4%
Province	2%	2%	1%	2%	1%	2%	2%	2%	2%	3%	1%	2%	1%	2%
N	6,029	5,337	6,347	7,312	7,580	8,511	11,621	10,253	15,715	11,434	6,834	5,386	4,198	5,072
Div/E														
Firm	99%	100%	100%	99%	98%	99%	98%	99%	95%	97%	99%	100%	97%	96%
Industry	1%	0%	0%	0%	2%	0%	1%	0%	3%	1%	1%	0%	3%	2%
Province	0%	0%	0%	1%	0%	1%	1%	1%	2%	2%	0%	0%	0%	2%
N	6,012	5,308	6,324	7,283	7,547	8,451	11,582	10,218	15,655	11,390	6,793	5,355	4,185	5,037

Table 8. Variance decomposition of dividend policy of new and established firms using four-level Hierarchical linear model (HLM).
In Models 1-4 we split the sample using 6 years threshold, where new firms are 6 years old or younger, and established firms are older than 6 years. In Models 5-8 we use a 10 years threshold, where new firms are 10 years old or younger, and established firms are older than 10 years. In Models 1 and 5 we use the sample of both dividend payers and dividend nonpayers. In all other models we only use the sample of dividend payers.

	Panel A				Panel B			
	6 years old threshold				10 years old threshold			
Model	1	2	3	4	5	6	7	8
	DIV	DIV/TA	DIV/CF	DIV/E	DIV	DIV/TA	DIV/CF	DIV/E
	%	%	%	%	%	%	%	%
New firms								
Firm Year	60%	36%	62%	73%	62%	43%	62%	72%
Firm	38%	57%	32%	26%	36%	57%	34%	26%
Industry	2%	7%	4%	1%	2%	0%	2%	1%
Province	0%	0%	2%	1%	0%	0%	2%	0%
N	131,520	15,457	12,054	11,975	212,265	27,173	22,179	22,038
Established firms								
Firm Year	62%	44%	55%	65%	62%	44%	54%	64%
Firm	36%	56%	42%	33%	36%	56%	43%	34%
Industry	2%	0%	1%	1%	2%	0%	1%	1%
Province	0%	0%	2%	1%	0%	0%	2%	1%
N	668,529	111,316	99,575	99,165	587,784	99,600	89,450	89,102

Table 9. Variance decomposition of dividend policy of medium, small and micro firms using four-level Hierarchical linear model (HLM). Medium firms employ between 250 and 50 people, small firms employ between 50 and 10 people, micro firms employ less than 10 people. In Model 1 we use the sample of both dividend payers and dividend nonpayers. In Models 2-4 we only use the sample of dividend payers. We apply restricted maximum likelihood estimation method.

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Medium firms								
Firm Year	0.123	57%	0.004	40%	0.213	55%	1.968	67%
Firm	0.087	40%	0.005	50%	0.151	39%	0.897	31%
Industry	0.005	2%	0.001	10%	0.013	3%	0.037	1%
Province	0.001	0%	0.000	0%	0.012	3%	0.036	1%
N	25,885		8,296		7,322		7,316	
Small firms								
Firm Year	0.101	58%	0.005	45%	0.247	59%	2.582	73%
Firm	0.067	39%	0.006	55%	0.159	38%	0.894	25%
Industry	0.004	2%	0.000	0%	0.003	1%	0.039	1%
Province	0.001	1%	0.000	0%	0.011	3%	0.037	1%
N	172,910		39,097		35,049		34,985	
Micro firms								
Firm Year	0.074	65%	0.008	47%	0.348	58%	3.219	67%
Firm	0.037	33%	0.009	53%	0.235	39%	1.508	31%
Industry	0.002	2%	0.000	0%	0.005	1%	0.028	1%
Province	0.000	0%	0.000	0%	0.010	2%	0.056	1%
N	605,250		80,557		70,340		69,920	

Appendix

Table A.1 Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.083	64%	0.007	44%	0.308	56%	2.941	67%
Firm	0.045	35%	0.009	56%	0.226	41%	1.403	32%
Industry	0.002	2%	0.000	0%	0.004	1%	0.018	0%
Province	0.000	0%	0.000	0%	0.009	2%	0.040	1%
Total	0.130	100%	0.016	100%	0.547	100%	4.402	100%
N	800,049		126,773		111,629		111,140	

Note: Industries are grouped in 2-digit NACEBEL codes.

Table A.2 Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.083	62%	0.007	44%	0.308	57%	2.940	67%
Firm	0.045	34%	0.009	56%	0.226	41%	1.403	32%
Province	0.001	1%	0.000	0%	0.009	2%	0.053	1%
Industry	0.004	3%	0.000	0%	0.002	0%	0.009	0%
Total	0.133	100%	0.016	100%	0.545	100%	4.405	100%
N	800,049		126,773		111,629		111,140	

Note: Industries are grouped in 2-digit NACEBEL codes.

Table A.3 Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.083	63%	0.007	44%	0.308	57%	2.941	67%
Firm	0.045	34%	0.009	56%	0.227	42%	1.407	32%
Industry	0.003	2%	0.000	0%	0.004	1%	0.015	0%
Region	0.000	0%	0.000	0%	0.006	1%	0.028	1%
Total	0.131	100%	0.016	100%	0.545	100%	4.391	100%
N	800,108		126,781		111,636		111,147	

Note: Industries are grouped in 2-digit NACEBEL codes.

Table A.4 Dividend policy variance decomposition using four-level Hierarchical linear model (HLM).

Model	1		2		3		4	
	DIV		DIV/TA		DIV/CF		DIV/E	
	b	%	b	%	b	%	b	%
Firm Year	0.083	62%	0.007	44%	0.308	56%	2.940	67%
Firm	0.045	34%	0.009	56%	0.227	42%	1.407	32%
Region	0.001	1%	0.000	0%	0.011	2%	0.048	1%
Industry	0.004	3%	0.000	0%	0.000	0%	0.000	0%
Total	0.133	1.000	0.016	100%	0.546	100%	4.395	100%
N	800,108		126,781		111,636		111,147	

Note: Industries are grouped in 2-digit NACEBEL codes.

Table A.5 Summary statistics of dividend paying SMEs in 10 Belgian provinces and Brussels.

Province	N	Mean	SE	p5	Median	p95
Antwerp	24,303					
DIV/TA	24,303	0.13	0.13	0.00	0.08	0.40
DIV/CF	21,428	0.68	0.71	0.02	0.43	2.44
DIV/E	21,341	1.69	2.04	0.00	0.90	7.11
Walloon Brabant	5,493					
DIV/TA	5,493	0.10	0.11	0.00	0.06	0.40
DIV/CF	4,762	0.57	0.64	0.02	0.35	2.44
DIV/E	4,728	1.45	1.87	0.00	0.75	7.11
Brussels	11,955					
DIV/TA	11,955	0.12	0.12	0.01	0.08	0.40
DIV/CF	10,355	0.63	0.65	0.03	0.41	2.44
DIV/E	10,310	1.48	1.82	0.00	0.86	7.11
East-Flanders	18,918					
DIV/TA	18,918	0.12	0.12	0.00	0.06	0.40
DIV/CF	16,649	0.64	0.72	0.02	0.36	2.44
DIV/E	16,593	1.66	2.08	0.00	0.82	7.11
Hainaut	10,431					
DIV/TA	10,431	0.09	0.11	0.00	0.05	0.38
DIV/CF	9,180	0.53	0.64	0.02	0.29	2.44
DIV/E	9,157	1.40	1.88	0.00	0.69	7.11
Limburg	9,290					
DIV/TA	9,290	0.12	0.13	0.00	0.06	0.40
DIV/CF	8,124	0.67	0.75	0.02	0.37	2.44
DIV/E	8,083	1.73	2.16	0.00	0.84	7.11
Liège	15,147					
DIV/TA	15,147	0.09	0.11	0.00	0.04	0.39
DIV/CF	13,323	0.49	0.61	0.02	0.26	2.30
DIV/E	13,265	1.28	1.78	0.00	0.63	6.89
Luxembourg	2,842					
DIV/TA	2,842	0.08	0.10	0.00	0.04	0.35
DIV/CF	2,520	0.46	0.60	0.02	0.24	2.36
DIV/E	2,503	1.31	1.84	0.00	0.62	7.11
Namur	5,077					
DIV/TA	5,077	0.08	0.10	0.00	0.04	0.36
DIV/CF	4,450	0.47	0.61	0.02	0.24	2.22
DIV/E	4,412	1.32	1.81	0.00	0.64	7.11
Flemish Brabant	11,517					
DIV/TA	11,517	0.13	0.13	0.00	0.08	0.40
DIV/CF	10,132	0.68	0.72	0.02	0.42	2.44
DIV/E	10,080	1.68	2.03	0.00	0.90	7.11
West-Flanders	17,803					
DIV/TA	17,803	0.11	0.12	0.00	0.06	0.40
DIV/CF	15,762	0.63	0.73	0.02	0.34	2.44
DIV/E	15,693	1.70	2.15	0.00	0.80	7.11