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Variance decomposition of the country, industry, firm, and firm-year effects on dividend policy

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ABSTRACT

Why some firms distribute generous cash dividends while others are reluctant to do so remains an unanswered question despite decades of scholarly examination. Although the extant literature on dividend policy has explored the effects of determinants at the country, industry, firm, and firm-year levels, it remains unclear whether and how much each level of analysis matters to dividend policy. Consequently, this study seeks to move the literature forward by decomposing the variance at each level associated with dividend policies in a global sample of 8903 firms over an 11-year time period. We employ hierarchical linear modeling and find that all four levels of analysis help to explain dividend policy, but the firm and firm-year effects account for the majority of variance. Furthermore, decomposing the variance within each year reveals that the firm level has the strongest effect on dividend policy. Finally, while the variance in dividend policy explained by each level varies according to the dividend policy measure used, it is largely stable over our study period. We discuss implications of these findings for future research on dividend policy and for the field of comparative corporate governance.

1. Introduction

Publicly-held firms listed in the U.S. paid an astonishing yearly average of $367.3 billion in dividends between 2003 and 2012 (Standard and Poor's Dividend Report, 2012), and this sizeable figure accounts for less than 10 percent of total annual dividends paid by firms around the world (Fatemi & Bildik, 2012). Dividends account for approximately 30 percent of corporate profits of publicly-traded firms around the world (Fatemi & Bildik, 2012), and previous research indeed shows that managers view dividend policy as a critical strategic decision (Baker, Singleton, & Veit, 2011). Unfortunately, the dividend literature is mired with equivocal and dispersed assertions and empirical evidence, rendering our knowledge of determinants of dividend policies, especially outside the U.S., quite limited. Consequently, why some firms distribute higher cash dividends while others are more reluctant to do so remains a largely unanswered question despite decades of research (Baker et al., 2011; Thomson, 2011).

The extant literature on dividend policy identifies many specific country-, industry-, firm-, and firm-year-level determinants of dividend policy (e.g., La Porta, Lopez, Shleifer, & Vishny, 2000; Shao, Kwok, & Guedhami, 2010; Jensen, 1986; DeAngelo, & DeAngelo, 2006; DeAngelo, DeAngelo, & Stulz, 2006; Baker & Wurgler, 2004a, 2004b; Fatemi & Bildik, 2012; Zhou, Booth, & Chang, 2013). Unfortunately, these studies tend to empirically analyze the influence of such dividend policy determinants in an isolated way. Hence, while these studies have undoubtedly contributed to our knowledge, it remains unclear whether and how much each level of analysis, when examined simultaneously with other levels, matters to dividend policy. Before focusing on what the best predictors might be at various levels, it is important to take a step back and understand what level(s) account for the primary variance in dividend policy. As Short, Ketchen, Palmer, and Hult (2007) noted in their variance decomposition study of firm performance across firm, strategic group, and industry levels, unless we examine the importance of all levels simultaneously, research risks focusing on predictors at a particular level of analysis that are not primary or significant. They state: "If a study includes only one or two of the levels, the resulting portrayal of the interwoven systems that collectively shape firm outcomes is incomplete" (p. 148).

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Following Short et al.'s (2007) insights, this study seeks to move the dividend literature forward by decomposing the variance at each level associated with dividend policies across countries, industries, firms, and firm-years. In other words, our study attempts to address the following two research questions: (1) does each level of analysis explain statistically significant variance in dividend policy when examined simultaneously with other levels? and (2) what is the relative importance of the variance explained at each level of analysis to dividend policy?

Similar to previous variance decomposition studies (e.g., McGahan & Victer, 2010; Short et al., 2007; Goldszmidt, Brito, & de Vasconcelos, 2011; Kayo & Kimura, 2011), we first review the extant dividend policy literature across the relevant levels of analysis. This provides the basis for our expectation that each level of analysis should explain statistically significant variance in dividend policy. Next, we discuss the theoretical importance of not only examining whether each level of analysis is statistically significant, but also going one step further to explore how much of the variance in dividend policy is attributed to each level. To achieve these goals, we utilize hierarchical linear modeling to decompose the variance at each level associated with dividend policies in a global sample of 8903 firms over an 11-year time period. Thus, this study seeks to contribute to the literature in three important ways.

First, the study of dividend policy is crucial to publicly-traded firms because they are subject to increased monitoring from investor markets (Michaely & Roberts, 2011). Dividends may act as a signal of commitment and competence that managers send to investor markets in order to reduce perceptions of agency costs and overinvestment (Baker & Powell, 1999; Yoon & Starks, 1995). Similarly, dividends may signal that the board of directors expects strong current and future firm performance (Fosberg, 2001), thus affecting corporate reputation and firm value (Basdeo, Smith, Grimm, Rindova, & Derfus, 2006). Remarkably, to the best of our knowledge, no previous research has yet attempted to examine the significance and relative importance of levels of analysis in explaining dividend policy decisions. Hence, in light of the lack of a clear understanding of determinants of dividend policy (Baker et al., 2011; Denis & Osobov, 2008; Shao et al., 2010), evaluating the effects on the different levels of analysis will allow a re-examination of existing explanations yielding a more focused future inquiry (cf. McGahan & Victer, 2010).

Second, this study contributes to the comparative corporate governance literature by examining the extent to which differences in external context impact managerial decision making. A main assertion in this literature is that the context in which firms operate matters (Peng, Sun, Pinkham, & Chen, 2009). Similarly, Judge, Fainshmidt and Brown (2014: 17) assert: “If context matters, the field needs to clearly specify what the most theoretically-relevant context might be in order to move to theories that are more parsimonious, accurate, and generalizable to the global economy.” While our study focuses on one very important strategic decision, it nevertheless provides insights as to the importance of context at various levels of analysis, which may inform comparative governance research in a valuable way.

Third, hierarchical linear modeling (HLM), a statistical technique well-suited for nested data and variance decomposition (Hofmann, 1997; Ozkaya et al., 2013; Short et al., 2007), is employed to examine our research question with a comprehensive, cross-national, and longitudinal dataset. While several variance decomposition techniques are available (e.g., Ayyagari, Kunt, & Maksimovic, 2008; Campbell, 1991; Frank & Goyal, 2009; Lemmon, Roberts, & Zender, 2008; Chen, 2010; McGahan & Victer, 2010), the main advantage of HLM is that it allows for the direct estimation of variance components at multiple levels of analysis, without needing to specify predictors or estimate standard errors but still accounting for the nested nature of data (Fitza, 2014; Hofmann, 1997; Primo, Jacobsmeier, & Milyo, 2007; Short et al., 2007). As such, we attempt to make an important methodological contribution to the dividend literature as well.

2. Theoretical framework

Dividend policy is defined as the set of guidelines a company uses to decide how much of its financial resources it will payout to shareholders, when it is not required by law (Kato, Loewenstein, & Tsai, 1997). In some industries and/or countries, dividend payout is involuntary and specified by law (La Porta et al., 2000). For instance, real estate investment trusts (REITs) are required to payout 90 percent of their taxable income as dividend in exchange for tax-exemption (Ghosh & Sirmans, 2006). Such imposed regulation decreases the level of managerial discretion in resource-allocation decisions (Finkelstein & Hambrick, 1990). Therefore, this study specifically focuses on voluntary dividend payouts.

2.1. Country-level effects on dividend policy

Dividend policies have been shown to vary substantially across countries (e.g., Denis & Osobov, 2008). The dominant theory in cross-country research on dividend policy is based on agency explanations (Shao et al., 2010). Because of agency's emphasis on formal rules and regulations, it has been more naturally drawn to national formal institutions (North, 1990) and their influence on dividends. Formal institutions represent the set of rules, laws, and sanctions in a particular country that shape patterns of decision making by managers (Xu & Shenkar, 2002). Studies in this stream have shown that dividend policy is affected by formal institutions focused on investor protection (La Porta et al., 2000), creditor rights (Brockman & Unlu, 2009), tax rates and nature of legal system (Faccio, Lang, & Young, 2001; La Porta et al., 2000; Lin, 2002), and business disclosure standards (Brockman & Unlu, 2011). For instance, La Porta et al. (2000) argue that dividend payouts tend to be higher in countries with strong shareholder protection because minority shareholders have a stronger legal claim for dividend payments in such environments.

Countries are gestalts of governance mechanisms that facilitate the way in which managers allocate resources to various organizational activities as well as the way in which corporate governance is wielded (Ward, Brown, & Rodriguez, 2009). Millar, Eldomiaty, Choi, and Hilton (2005) suggested that differences among these governance bundles cause variation in information-asymmetries across economies. As such, this makeup of formal institutions shapes the way agency costs are perceived and mitigated by shareholders and managers. Further, these institutionalized arrangements shape the “means by which a nation constrains and directs corporate power so that it efficiently creates economic value and equitably distributes economic wealth” (Judge, Douglas, & Kutan, 2008: 766). Hence, the system of national formal institutions in a country is influential for corporate policies and dividend decisions.

Nevertheless, national informal institutions – shared norms, beliefs, values, and cognitive processes (Estrin, Bagdasaryan, & Meyer, 2009) – may also play an important part in influencing dividend policies around the world. Patterns of decision making by managers vary across countries due to, for instance, differences in national cultural norms and values (Xu & Shenkar, 2002). In other words, firm behavior is partially rooted in both the formal and informal institutional context surrounding it, and these institutions wary considerably across national boundaries (Dunning & Lundan, 2010). For example, Aivazian, Booth, and Cleary (2003) found that firms from emerging markets exhibit dividend patterns