



# The behavioral foundations of corporate dividend policy a cross-country analysis



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## ABSTRACT

We study a model that relates dividend payout policy to behavioral issues based on the ideas of mental accounting. A panel analysis across 29 countries and over 43,000 firm-years demonstrates that our model studying the relation between dividends and patience, loss aversion, and ambiguity aversion can be verified empirically. Our paper seems to be the first that highlights empirically in a straightforward way the relevance of behavioral patterns as important determinants for corporate dividend policy, while previous empirical studies could tackle this issue only indirectly. With several robustness tests we also address potential doubts concerning the quality of our data and analyze further implications of our theory.

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## 1. Introduction

Corporate dividend policies vary significantly across different countries. Traditionally, these variations are explained by differences in the tax systems and the relevance of informational asymmetries depending on the cross-country differences in legal frameworks (see La Porta et al., 2000; Brockman and Unlu, 2009). Recently, cultural aspects have been suggested as another reason that can explain the cross-country differences in dividend payouts controlling for other firm-specific determinants (see Khambata and Liu, 2005; Fidrmuc and Jacob, 2010; Shao et al., 2010; Bae et al., 2012). Moreover, it is often argued that behavioral biases resulting from bounded investor rationality identified by descriptive decision theory may be a main determinant of corporate dividend policy as well, since firms adapt their policies in order to cater to investor demand (Baker and Wurgler, 2004; Becker et al., 2011). However, up to now, there has been no empirical analysis aiming at explaining cross-country differences in corporate dividend policy by behavioral patterns. Furthermore, previous behavioral

approaches have not discussed empirically which factors would drive investors' demand for dividends in the first place and they have not yet succeeded in tying behavioral factors to investors' dividend demand empirically in a straightforward way.

In this paper, we want to close these gaps: We show that loss aversion, ambiguity aversion, and the level of time discounting (i.e. the extent of investors' (im-) patience) are main determinants for corporate dividend policies across a sample of 43,000 firm-years from 29 countries for which data on behavioral variables have been collected via a comprehensive survey. By doing so, our paper contributes to the existing literature in several ways: First of all, we seem to be the first who address empirically the influence of loss aversion and ambiguity aversion on corporate dividend policy. Secondly, we contribute to the literature which investigates the relevance of time preferences for dividend demand of investors, as up to now this issue has only been examined in an indirect manner based on demographic factors. Thirdly, by doing so, we are able to offer an alternative behavioral explanation for cross-country differences in corporate dividend policy and the valuation of dividends. Finally, our paper also provides a new theoretical model that can explain the impact of different preference parameters simultaneously.

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Our paper is organized as follows: In Section 2, we present the current state of research with respect to the determinants of corporate dividend policy. Section 3 explains the role which behavioral patterns may play in determining corporate dividend payouts. In order to examine these relations in a more rigorous manner, we present a formal model that is motivated by Shefrin and Statman (1984) as well as by Shefrin and Thaler (1988). Based on our theory, we state our hypotheses. Section 4 describes our data and empirical results are presented in Section 5. Section 6 is devoted to the discussion of our results and robustness tests. Section 7 concludes.

## 2. The determinants of corporate dividend policy: literature overview

The analysis of the determinants of corporate dividend policy belongs to the core issues in modern financial theory. Beginning with the celebrated irrelevancy theorem of Miller and Modigliani (1961) which relies on cash dividends and capital gains being perfect substitutes in a perfect capital market, several avenues have been taken to identify reasons for the importance of corporate dividend policy. First of all, it is easy to understand that the tax system may influence corporate dividend policy. Although it started to change in recent years, dividends are typically more heavily taxed than capital gains and, thus, paying dividends makes little sense under those considerations. This finding leads Black (1976) to speak of a dividend puzzle (see also Feldstein and Green, 1983). In order to resolve the dividend puzzle, informational asymmetries have been propagated as another main determinant of corporate dividend policy. In this regard, in a world with less informed investors, dividend payments may have benefits, since they can be perceived as a signal for the future profitability of a company (Bhattacharya, 1979; Miller and Rock, 1985; Kumar, 1988).

In addition to signaling aspects, agency problems may affect corporate dividend policy. According to the free cash flow hypothesis (Jensen and Meckling, 1976), managers invest in projects with negative net present values in order to increase personal utility by a growth in power and company size. Such an overinvestment problem can be counteracted by increasing dividend payments in order to reduce free cash flow available to the management of a firm. Therefore, all other things being equal, corresponding agency costs are decreasing in dividends. This will enhance the popularity of dividends as a commitment device (see Grossman and Hart, 1982; Easterbrook, 1984).

However, dividend payments also increase the risk of default by reducing the amount of assets that is accessible for debt holders. Thus, Kalay (1982) suggests that the observed dividend restrictions serve as a prerequisite for borrowing to take this issue under control. This would imply that firms with higher debt-equity ratios should favor lower dividend rates. This link is going to be especially important for firms with higher idiosyncratic risk (Brav et al., 2005).

Still, tax considerations, signaling aspects, and agency problems due to external equity or debt financing can only account for a small portion of the variation in corporate dividend policies. Furthermore, these theories come up short to explain several issues such as reactions to stock dividends, which are basically stock splits (De Bondt and Thaler, 1985), or a preference for non-decreasing dividends (Lintner, 1963). Moreover, many empirical studies suggest a higher marginal propensity to consume from dividends than from capital gains (see Baker et al., 2007) indicating that investors do not treat dividends as a substitute for capital gains and process them in different accounts as a result of their limited information processing abilities.

Hence, those observations led to a discussion regarding the role of bounded investor rationality for dividend policies. The behavioral explanation of dividend policy of Shefrin and Statman (1984) provides such an approach. Its main element is the distinction of different mental accounts for dividends and capital gains which brings us to the behavioral life cycle model of Shefrin and Thaler (1988). According to this model, people allocate their income in three different accounts: the current income account ( $I$ ), the (current) asset account ( $A$ ), and the future income account ( $F$ ). Based on this differentiation, several reasons have been proposed to explain why investors with different preferences may prefer different dividend distributions.

- (1) Consumption financed from the account  $A$  and especially from  $F$  involves subjectively felt “penalties”, as investors want to exercise self-control regarding the potential danger of excessive consumption due to time-inconsistent behavior. Current cash dividends are placed into the  $I$  account and therefore there is no penalty involved for the consumption financed by cash dividends, whereas future dividends are placed into the  $F$  account and consuming from this account will cause disutility. Accordingly, money is (mentally) not transferable between different accounts, and – as a consequence – capital gains are not perfect substitutes for dividends. Since dividends are assigned to the  $I$  account, they are better suited for consumption purchases and impatient investors who want to consume with a clear conscience will prefer firms that pay out a larger share of their earnings as dividends. On the other hand, when investors want to save, but lack the willpower to do so, companies should retain earnings. In both scenarios, the dividend policy should account for investors’ time preferences (Shefrin and Statman, 1984; Becker et al., 2011).
- (2) Dividends are “a bird in the hand”, while retained earnings only lead to uncertain future earnings so that ambiguity averse investors should prefer dividends even if retained and future earnings are completely reflected in current stock prices. Investors thus tend to perceive dividends as a safety net. This is solely a psychological phenomenon, because investors can obtain the same consumption path by selling their stocks. The study of Cyert and March (1993) proceeds from this “bird in the hand” explanation as well and argues that people prefer dividend payments to retained earnings, because they try to avoid uncertainties as much as possible.
- (3) Dividends reduce the exposure of investors to future shocks. If there is a positive probability that future shocks cause negative returns, dividends can be utilized in order to reduce the exposure to potential future losses for investors. This result is driven by the specific curvature of the investors’ value functions which have a kink according to prospect theory implying that avoiding a loss is more important for investors than to acquire a gain of the same size. Due to this “loss aversion”, investors may try to avoid potential future losses by increased current dividends based on a very similar logic as in the second argument.

These arguments might not appear very original at first. In particular, the classical bird-in-the-hand literature goes back to Lintner (1962) and Gordon (1963) and connects risk preferences to dividend policies in a very similar sense as in our second and third line of reasoning. These papers state that shareholders are risk averse and thus prefer to receive dividend payments rather than to wait for future capital gains. Apparently, there is a certain relation between this argument and the impact of ambiguity aversion and loss aversion on dividend policy, as we discuss in the second and the third argument. One of our contributions is that

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