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Sticky dividends: A new explanation☆

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ABSTRACT

This study proposes a generalized partial adjustment model of dividends in which managers set target dividends based on adaptively-formed earnings prospects. We show that firms adjust dividends to their target payouts much faster than previously documented. When managers form future earnings expectations based on a longer time-series of earnings, target dividends tend to become more stable. Thus, actual dividends tend to be more in line with the targets, driving up the speed of adjustment. Our model offers an insight that sticky dividends could be a consequence of managers' attempts to match dividend payouts with the smooth targets.

1. Introduction

Since Lintner (1956) studied corporate dividend policy and practice using a partial adjustment model, extensive prior research has documented a series of empirical findings and their plausible explanations.[1] Yet dividends remain one of the most contested and thorniest puzzles in corporate finance (Allen et al., 2000). Research in more recent years, in particular, provides evidence that many of those empirical findings and underlying theories are to be revised or refuted. Among others, Brav et al. (2005), using survey and field interviews with financial executives, provide a new perspective on various aspects of corporate payout policy such as managers' beliefs and stances concerning dividend policy and its determinants. Of particular interest for this paper is their finding that more than four-fifths of executives target to remain consistent with historical dividend policy and take lagged dividends as a benchmark when choosing the current dividend policy. Also, the majority of firms are known to tie their dividends to the sustainable future earnings. While these managerial tendencies are in line with dividend conservatism, they also offer some clues on how firms and managers are likely to set the dividend targets.

Building on the documented managerial attention to past dividend history and future earnings prospects in setting today's dividend policy, this study aims to offer a novel insight into the mechanism through which firms' actual dividends remain sticky.[2] To that end, we propose a generalized partial adjustment model with adaptive expectations for future

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[1] See Allen and Michaely (1995) and DeAngelo et al. (2009) for excellent reviews of the related literature.

[2] In Appendix A, we present the analysis of the time-series evolution of dividends for our cross-section of the firms following Lemmon et al. (2008). A preliminary examination reveals the presence of a permanent or long-run component that leads to highly persistent cross-sectional differences in dividend

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earnings.[3] In our proposed model, the managerial attention to past dividends is reflected in the way managers form the future earnings prospects which has also been documented to be an important consideration for dividend payout decision. Hence, our model does capture the spirit of managers' tendency to consider both historical dividends and future earnings prospects in determining the current dividend policy. Our model is also consistent with managers' motive to maintain smooth dividends because of asymmetric response of the market to dividend increases and cuts. By allowing managers to set target dividends based on expected future earnings,[4] our model can generate a smoother path of target dividends provided that managers form expectations adaptively when assessing future earnings prospects. Note that with adaptive expectation formation, future earnings prospects are formed as a weighted average of current and past earnings with geometrically declining weights.

Among the reported stylized facts lie the slow adjustments of dividends toward target payouts. For example, Fama and Babiak (1968) and Fama and French (2002) report quite low adjustment speeds of 0.37 and 0.33, respectively. Given the volatility in firms' earnings, it has remained a puzzle that actual dividends paid out do not reflect that volatility. Our model allows us to reexamine the adjustment speed of dividends to payout targets by explicitly modeling the dividend target formation process. Existing research often attributes smooth dividends to firms' reluctance to change dividends due to asymmetric information (i.e., signaling effect (Bhattacharya, 1979)) or agency conflicts (e.g., irrelevance of short-term profits to dividend decision (Easterbrook, 1984)).[5] One important implication of those theories is that the manager's information set for dividend decision is likely to contain a longer series of past dividends as well as future earnings prospects. Incorporating this aspect of firms' dividend decisions, this study provides an alternative and richer explanation for this long-lived puzzle by showing that firms' target dividend payouts themselves are much "smoother" than previously documented. While volatile target payouts in conventional models result in fairly low speeds of adjustment, our estimation results suggest that firms tend to adjust their dividend payouts to the targets much faster.

2. Data and methodology

This study uses annual accounting data from the CRSP/Compustat Merged Database (CCM) for the years 1970–2015. Firms with standard industrial classification (SIC) codes between 6000 and 6999, between 4900 and 4999, or between 9000 and 9999 are excluded as these firms are in financial services, regulated utilities, or public administration. We require that each firm have at least 12 years of observations and there be no gaps in the middle of the sample period. We drop the observations if the dividend-to-total assets ratio (denoted $D_{i,t}$), earnings-to-total assets ratio (denoted $E_{i,t}$), or a proxy for Tobin's Q as measured by the sum of the book value of debt and market value of equity divided by the book value of total assets (denoted $Q_{i,t}$) is missing. All variables are winsorized at the 1st and 99th percentiles to minimize the effects of outliers. There are a total of 24,926 firm-year observations, corresponding to 981 firms. Industry dummies are constructed according to Fama and French (1997) 48 industry classification.

Waud (1966) shows that a conventional partial adjustment model and an adaptive expectations model yield indistinguishable empirical specifications as far as estimation is concerned. Hence, one cannot tell whether the estimated coefficient of the lagged dividend ratio is driven by the speed of dividend adjustment (γ) or the speed of expectations revision (ρ). See Appendix B for a detailed discussion of the identification problem. A novel feature of our model presented in this section is that it includes the ingredients of both the partial adjustment model and the adaptive expectations model. This feature allows us to sort out the respective effects of dividend adjustment speed (γ) and expectations revision speed (ρ) in the dynamics of corporate dividend policy. In addition, our model takes into account unobserved firm heterogeneity in setting dividend targets.

A generalized partial adjustment model of dividends with an adaptive expectations formation process in the panel data setting consists of the following three equations:

$$D_{i,t} - D_{i,t-1} = \gamma (D^{\star}_{i,t} - D_{i,t-1}) + \pi_j + \kappa_t + \nu_{i,t}; \tag{1}$$

$$D^{\star}_{i,t} = \alpha E^{e}_{i,t} + \beta Q_{i,t-1} + \mu_i; \tag{2}$$

$$E^{e}_{i,t} - E^{e}_{i,t-1} = \rho (E_{i,t} - E^{e}_{i,t-1}), \tag{3}$$

ratios. In addition, both nonparametric and parametric (ANCOVA) analyses of variance decomposition show that the time-invariant firm-specific components are the major source of total variation in dividends. That is, the majority of the total variation in dividends comes from cross-sectional differences as opposed to time-series variation. See Appendix A for further details.

[3] Chow (2011) provides a statistical reason and strong econometric evidence for supporting the adaptive expectations hypothesis in economics.

[4] Setting dividend targets in this manner is in line with the signaling hypothesis of dividends (Bhattacharya, 1979; Miller and Rock, 1985; John and Williams, 1985).

[5] See Leary and Michaely (2011) for a comprehensive survey of the theoretical models.

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