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Appearing and disappearing dividends: the link to catering incentives

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Abstract

We document a close link between fluctuations in the propensity to pay dividends and catering incentives. First, we use the methodology of Fama and French (2001) to identify a total of four distinct trends in the propensity to pay dividends between 1963 and 2000. Second, we show that each of these trends lines up with a corresponding fluctuation in catering incentives: The propensity to pay increases when a proxy for the stock market dividend premium is positive and decreases when it is negative. The lone disconnect is attributable to Nixon-era controls.

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1. Introduction

In an important paper, Fama and French (2001) document a major time-series shift in dividend policy. Between 1978 and 1999, the fraction of their Compustat sample that pays dividends fell from 67% to 21%. They trace part of this decline to a composition effect. In recent years, an increasing fraction of firms were small and unprofitable but apparently had strong growth opportunities, so they would not have been expected to pay dividends. However, even after accounting for this effect, Fama and French find a large decline in the residual "propensity to pay dividends." In this sense, dividends have been disappearing since 1978.

In this paper, we ask whether the catering view of dividends in Baker and Wurgler (2003) sheds light on the propensity to pay dividends. That view argues that when investor demand for payers is high (low) and Modigliani-Miller-style arbitrage is limited, a stock price premium (discount) could appear on payers (nonpayers), and firms on the margin could then cater to the implied investor demand in an attempt to capture this "dividend premium." Thus, leaving aside its allowance of a role for sentiment, the catering view can be seen as a disequilibrium version of the clientele equilibrium view in Black and Scholes (1974). Baker and Wurgler construct proxies for the time-varying dividend premium, or catering incentive, and find that they help to explain the aggregate rate of dividend initiation and omission.

We start the current analysis by applying the methodology of Fama and French to earlier data. This leads to our first main finding: There are actually four distinct trends in the propensity to pay dividends between 1963 and 2000. The post-1977 decline is certainly the largest and longest, but the three earlier fluctuations are clearly evident. While these trends are interesting in their own right, more important for us is that they essentially quadruple the degrees of freedom available for our analysis. Our second main finding is that each of these four trends can be

connected to a corresponding fluctuation in a proxy for catering incentives, the stock market dividend premium variable from Baker and Wurgler. This variable, measured annually, is defined as the log difference in the value-weighted average market-to-book of payers and the value-weighted average market-to-book of nonpayers.

Specifically, the dividend premium is positive in the mid-1960s, coinciding with the first (increasing) trend in the propensity to pay that we document. Then it falls to negative territory through 1969, suggesting a premium for nonpayers, and accurately predicts the onset of the second (decreasing) trend. The dividend premium goes positive once again in 1970 and remains positive through 1977. While the propensity to pay does not begin its third (increasing) trend until 1973 or 1975, depending on how this variable is constructed, there is a simple explanation for the brief misfit. In the early 1970s, Nixon's Committee on Interest and Dividends actively discouraged increases in dividends in an effort to fight inflation. Once their artificial controls were lifted, however, the propensity to pay immediately resumed alignment with catering incentives. Most striking of all, the dividend premium goes back to negative values in 1978 and remains negative essentially through 2000. Thus it accurately predicts both the onset and continuation of the fourth (decreasing) trend, the post-1977 disappearance.

Further analysis firms up the link between catering incentives and the propensity to pay. Going beyond a qualitative correspondence, we find that the dividend premium is able to explain the actual magnitude of the post-1977 disappearance in an out-of-sample test. We also find that the dividend premium and changes in the propensity to pay forecast the relative stock returns of payers and nonpayers, which bolsters the argument that these variables were associated with a real or perceived mispricing driven by investor demand.

Finally, we conduct an exhaustive review of historical *New York Times* articles pertaining to dividends to better understand fluctuations in the investor demand for payers. This review suggests an intuitive pattern. The dividend premium tends to be negative, and the propensity to pay tends to decrease, when sentiment for growth stocks (characteristically nonpayers) is high, such as in the late 1960s and late 1990s. Following crashes in growth stocks, demand appears to favor the "safe" returns on payers, the dividend premium rises, and dividends appear. This appears to characterize the mid-1960s, early to mid-1970s, and perhaps the early 2000s.

In sum, our results profitably marry the work of Fama and French (2001) and Baker and Wurgler (2003). While more research on the demand side is necessary, our results establish that the catering view of the supply side offers an empirically successful account of the post-1977 disappearance of dividends as well as earlier appearances and disappearances. Of course, our results do not rule out that other influences affect the propensity to pay—recent work finds some effect of repurchases (Grullon and Michaely, 2002), executive stock options (Fenn and Liang, 2001), and asymmetric information (Amihud and Li, 2002)—but they raise the bar from explaining one trend to explaining four.

This paper proceeds as follows. Section 2 describes four trends in the propensity to pay dividends between 1963 and 2000. Section 3 matches these to catering incentives and Nixon-era controls. Section 4 explores evidence on investor demand. Section 5 concludes.

2. Four trends in the propensity to pay dividends, 1963–2000

Here we use the methodology of Fama and French (2001) to describe the evolution of the propensity to pay dividends from 1963 through 2000. Our sample is defined as there (pp. 40-41): "The Compustat sample for calendar year t … includes those firms with fiscal year-ends in t that

have the following data (Compustat annual data items in parentheses): total assets (6), stock price (199) and shares outstanding (25) at the end of the fiscal year, income before extraordinary items (18), interest expense (15), [cash] dividends per share by ex date (26), preferred dividends (19), and (a) preferred stock liquidating value (10), (b) preferred stock redemption value (56), or (c) preferred stock carrying value (130). Firms must also have (a) stockholder's equity (216), (b) liabilities (181), or (c) common equity (60) and preferred stock par value (130). Total assets must be available in years *t* and *t*-1. The other items must be available in *t*. … We exclude firms with book equity below $250,000 or assets below $500,000. To ensure that firms are publicly traded, the Compustat sample includes only firms with CRSP share codes of 10 or 11, and we use only the fiscal years a firm is in the CRSP database at its fiscal year-end. … We exclude utilities (SIC codes 4900-4949) and financial firms (SIC codes 6000-6999)." The average number of firms in our sample is 1,776 between 1963 and 1977 and 3,797 between 1978 and 2000.

Size, investment opportunities, profitability characteristics, and dividend payment are also defined as in Fama and French. *NYP* is the NYSE market capitalization percentile, i.e., the fraction of NYSE firms having equal or smaller capitalization than firm *i* in year *t*. *M/B* is the market-to-book ratio, defined as book assets minus book equity plus market equity all divided by book assets. Market equity is fiscal year closing price times shares outstanding. Book equity is stockholders' equity (or first available of common equity plus preferred stock par value or book assets minus liabilities) minus preferred stock liquidating value (or first available of redemption value or carrying value) plus balance sheet deferred taxes and investment tax credit (35) if available and minus post-retirement assets (330) if available. Growth in book assets *dA/A* is self-explanatory. Profitability *E/A* is earnings before extraordinary items plus interest expense plus

income statement deferred taxes (50) divided by book assets. A firm-year observation is a payer if it has positive dividends per share by the ex date, else it is a nonpayer.

Panels A and B of Fig. 1 show the actual percentage of the sample that pays dividends in each year, as well as the percentage of firms that would be expected to be payers given their characteristics. The expected percentage is based on firm-level logit models of the probability that a firm with given characteristics is a payer. Each year between 1963 and 1977, we estimate two models. One includes *NYP*, *M/B*, *dA/A*, and *E/A*, and the other excludes *M/B*. (As noted by Fama and French, *M/B* wears several theoretical hats and so it is useful to establish robustness of various results to its exclusion.) The average yearly coefficient from these regressions, known as Fama-MacBeth estimates, imply the following models:

[INSERT FIG. 1 NEAR HERE]

$$\Pr(Payer_{it}=1)=\text{logit}\left(-0.14+4.26NYP_{it}-0.81\frac{M}{B}_{it}-1.07\frac{dA}{A}_{it}+15.57\frac{E}{A}_{it}\right) \quad (1)$$

and

$$\Pr(Payer_{it}=1)=\text{logit}\left(-0.63+3.60NYP_{it}-1.39\frac{dA}{A}_{it}+10.34\frac{E}{A}_{it}\right). \quad (2)$$

The expected percentage of dividend payers in the Compustat sample in year *t* is then estimated by applying Eqs. (1) and (2) to the values of the explanatory variables for each firm, summing over firms, dividing by the number of firms, and multiplying by 100.[1] The "propensity to pay dividends" is defined as the difference between the actual percentage and the expected and is plotted in Panels C and D. The change in the propensity to pay is plotted in Panels E and F.

While the exact timing of the breaks vary depending on how one measures the propensity to pay, the figure reveals four clear trends: (1) an increase from 1963 through 1966–1968; (2) a

decrease from 1967–1969 through 1972–1974; (3) an increase from 1973–1975 through 1977; and (4) the decrease from 1978 onward identified by Fama and French. Each trend involves hundreds if not thousands of firms. Thus, while the latest decline has understandably received the most attention, dividends have to some extent "appeared" and "disappeared" before.

3. Catering incentives and the propensity to pay dividends

Here we document that the four historical trends in the propensity to pay dividends roughly coincide with four broad fluctuations in catering incentives. Once account is taken of the intervention by the Nixon administration in the early 1970s, the correspondence is all but perfect. We then show that these forces can statistically "explain" the post-1977 disappearance of dividends in an out-of-sample test. We close with a complementary analysis of stock returns.

3.1. Catering incentives

Baker and Wurgler (2003) suggest that managers could try to cater to prevailing investor demand for dividends by paying dividends when investors are putting a premium on dividend payers, and not paying when the dividend premium is negative. While surely not the only omitted influence on dividend payment in Eqs. (1) and (2), catering incentives vary over time and to an extent are separate from firm characteristics. It is natural to examine whether they influence the propensity to pay.

We measure catering incentives between 1962 and 1999 using the "dividend premium" variable in Baker and Wurgler. It is defined as follows. Each year, we compute the book-value-weighted average market-to-book ratio for dividend payers and the average for nonpayers. The dividend premium is the difference between the logs of these averages. The market-to-book ratio

[1] The in-sample nature of the 1963–1977 expected payer estimates is not problematic. The year-by-year model coefficients are relatively stable, so similar results obtain if the training period is instead 1978–2000 or 1963–2000.

used here is defined using the calendar-year end stock price, instead of the fiscal-year end price, but otherwise follows the definition given above.

Baker and Wurgler (2003) find that this variable is significantly correlated with other plausible measures of investor demand for dividends, including a high correlation with a dividend premium variable based on the dual-class structure of the Citizens Utilities company and a significant positive correlation with the average announcement effect of dividend initiators. It is also significantly negatively correlated with the future returns of a portfolio that is long payers and short nonpayers (although a formal predictive relationship is not established there). These correlations suggest that the dividend premium variable, while crude, is a reasonable candidate for measuring the relative investor demand for payers.

The catering theory involves dynamics in disequilibrium and thus essentially maintains that uninformed investor demand for dividend payers fluctuates faster than firms can or do adjust. A nontrivial dividend premium (or discount) appears, and firms are presumed to cater to the implied excess demand. The appropriate comparison is thus between changes in the propensity to pay and the beginning-of-period level of the dividend premium. Fig. 2 plots the (lagged) dividend premium against the annual changes in the propensity to pay.

[INSERT FIG. 2 NEAR HERE]

Fig. 2 illustrates an impressive degree of agreement between the two series. In terms of the four trends, (1) The dividend premium predicts an increasing propensity to pay between 1963 and 1967 (i.e., it takes positive values between 1962 and 1966), and the propensity to pay is indeed rising between 1963 and 1966 (no *M/B*) or 1968 (*M/B*), an essentially perfect fit, and (2) The dividend premium then goes negative to predict a declining propensity to pay from 1968 through 1970. This predicted turning point is also borne out in the data.

Regarding trend (3), the dividend premium flips sign again in the early 1970s, its lag predicting a rising propensity to pay from 1971 through 1978. However, there are a few years of misfit here. The propensity to pay does not start rising until 1973 (no *M/B*) or 1975 (*M/B*). After that, however, it does rise through 1977 by both measures. Thus, although the second appearance of dividends did ultimately occur, it was predicted a few years too early. (More on this period below.) Finally, the dividend premium's most striking success is in predicting the (4) post-1977 disappearance. The dividend premium falls sharply around this period, and goes from positive to negative precisely in 1978. Moreover, it remains negative through the end of the data, except for a brief flirtation in 1998. Thus it predicts not only the onset but also the continued fall in the propensity to pay over this long period.

In sum, the dividend premium has run through four positive/negative cycles in this sample period, and these correspond closely with the four observed trends in the propensity to pay. There is no case in which changes in the propensity to pay predate changes in the dividend premium, and only one period in which the lag was substantial. The results suggest that catering incentives may have a central effect on the propensity to pay.

3.2. Nixon-era dividend controls

From August 15 through December 31, 1971 the Nixon administration declared a dividend freeze as part of its efforts to curb inflation. In November 1971 the Committee on Interest and Dividends announced that corporations should observe a 4% dividend growth guideline in declaring dividends, effective January 1, 1972. The base for this calculation was the maximum of total dividends per share paid in any of the three prior fiscal years. As a result, a corporation that paid zero dividends per share in these years would, under the text of the

guideline, also be limited to zero dividends in 1972. Essentially similar guidelines remained in place until the committee was dissolved on April 30, 1974.

While compliance with these guidelines was ostensibly voluntary, "the Administration put heavy pressure on corporations to comply with the President's request" (*New York Times*, November 3, 1971), and the available evidence indicates that the policy had bite. In the first several months of the program, the committee monitored 7,000 firms and requested that a dividend increase be rolled back by only 29, most of which met the request (*New York Times*, May 7, 1972). Related evidence appears in Dann (1981), who finds that repurchases, which did not violate the controls, spiked in 1973 and 1974.[2]

The Nixon controls likely explain the dividend premium's brief misfit in the early 1970s. The years 1972, 1973, and 1974 are shaded in Fig. 2. The controls appear to have kept the propensity to pay in decline even though catering incentives pointed the other way. Once the controls were lifted, the propensity to pay realigned with catering incentives.

3.3. Regressions and an out-of-sample test

It is clear from the plots that the dividend premium will predict changes in the propensity to pay. Table 1 confirms this formally. We report univariate regressions that include only the dividend premium and bivariate specifications that include a dummy for the Nixon controls.

$$\Delta PTP_t = a + bP_{t-1}^{D-ND} + cNixon_t + v_t \qquad (3)$$

This specification is appropriate for a disequilibrium theory such as catering. We run Eq. (3) for both versions of the propensity to pay *PTP* series and for both the full sample and the 1963–1977 subperiod.

[INSERT TABLE 1 NEAR HERE]

[2] Perhaps unaware of the controls, Dann (1981) expresses some puzzlement at the data (p. 121), but Bagwell and Shoven (1989) make the connection.

The dividend premium $P^{D\text{-}ND}$ is standardized in this regression, so the results indicate that a 1.0 standard deviation higher level of catering incentives (about an 18 percentage point higher value of the dividend premium) is associated with a 1.0 to 1.7 percentage point increase in the propensity to pay dividends, while the Nixon controls appear to have reduced the propensity to pay by a few percentage points per year.

Given the prominence of the post-1977 decline in the propensity to pay, an important question is whether catering incentives can empirically "explain" it. To give a precise answer to this question one must stay faithful to Fama and French's empirical framework. They use the 1963–1977 Compustat data to fit a model of the expected percentage of payers, and then they evaluate this model at the sample characteristics that prevail from 1978 and forward to make a true out-of-sample forecast of the expected percentage in each year. The difference between the actual and the expected percentage is the propensity to pay.

By analogy, the way to determine whether catering incentives could account for the decline within this framework is to first take the propensity to pay variable as data. Then fit a regression model between the propensity to pay and the (lagged) dividend premium over the 1963–1977 series, and use the fitted model to forecast the expected propensity to pay from 1978 forward. To the extent that the actual decline in the propensity to pay lines up with this forecast, the disappearance is explained, as an empirical matter.

Table 2 shows that the dividend premium is able to account for the magnitude of the post-1977 disappearance.[3] One can calculate that the average absolute forecast error when market-to-book is included is only 3.4 percentage points (usually positive), and 4.0 percentage points

[3] Because the dividend premium-based forecasts are generated from regressions of changes on levels in Table 1, we forecast changes in the propensity to pay, starting in 1978, and then cumulate them to estimate the expected propensity to pay from year to year.

(usually negative) when it is excluded. The table also reports out-of-sample forecasts made by the bivariate model that includes the Nixon dummy. This brings the average absolute forecast error down to only 2.2 percentage points in the case where market-to-book is included. Given that *PTP* is itself measured with at least a few percentage points of error, these forecasts seem about as accurate as one could reasonably expect.

[INSERT TABLE 2 NEAR HERE]

3.4. Evidence from returns

Some additional evidence consistent with catering comes from stock return predictability regressions. Baker and Wurgler (2003) find that the aggregate rate of dividend initiation and omission predict the relative stock returns of payers and nonpayers. When initiations (omissions) are common, returns on payers are relatively low (high) over the next one to three years. The results are consistent with the joint hypothesis of catering-motivated decisions and medium-horizon reversal of relative mispricing.[4] We briefly extend this analysis by testing the predictive power of the two variables focused on here: the dividend premium variable itself and changes in *PTP*. We view predictive power for the dividend premium as more of an assumption of the catering view, and predictive power for changes in *PTP* as more of a novel implication.

As the difference between two scaled-price variables, the dividend premium might be expected to have some power to predict the difference in returns of payers and nonpayers. Panel A of Table 3 generally confirms this. The table reports both OLS coefficients and coefficients adjusted for the Stambaugh (1999) small-sample bias. We use the (standardized) dividend premium to forecast the difference between the annual returns on value-weighted indexes of payers and nonpayers. We find that a 1.0 standard deviation increase in the dividend premium is

[4] One can also imagine a somewhat less stark model in which managers are not explicitly motivated by perceived stock market mispricing but simply cater to extreme investor demands.

associated with a relative return on payers over nonpayers that is 3.6 percentage points lower in the first year ahead, 8.9 percentage points lower in the second year ahead, and 10.9 percentage points lower in the third year ahead. The results for the one- and two-year ahead returns are significant using the bootstrap described in Baker and Wurgler (2003).

[INSERT TABLE 3 NEAR HERE]

Changes in the propensity to pay could also be expected to have some predictive power, given the aforementioned results for the raw rate of initiations and omissions. The mechanical connection between those raw rates and the perhaps more interesting changes in *PTP* variable is hardly exact, however, because of new lists, delists, and the netting out of firm characteristics in *PTP*. The effect of all these adjustments is a priori unclear, but Panels B, C, D, and E of Table 3 generally support the hypothesized pattern. The independent variable in each of these panels is a version of the (standardized) change in *PTP*.

The results suggest that a 1.0 standard deviation increase in the propensity to pay is associated with future relative returns on payers that are lower by roughly several percent per year. However, statistical significance is sensitive to horizon, which the theory does not specify. One notable pattern is the effect of including market-to-book in the *PTP* definition. Results that include it are marginal at best, while those that exclude it are strong. Fig. 1 provides an account for this difference. Panels C and D there show that the inclusion of market-to-book appears to add high-frequency noise to the four low-frequency trends. The fact that the predictability evidence gets stronger when this variation is cut out tends to increase our confidence that it is genuine. Overall, the returns predictability results provide some additional evidence that appears consistent with the catering story.

4. Investor demand for payers and nonpayers

The results above establish a tight link between a proxy for catering incentives and the propensity to pay dividends. This is the main message of the paper. Taking this as evidence that catering motives are important to the supply of paying firms, the rest of the story pertains to the demand side. To what investor demand are firms catering? There are two broad possibilities: traditional dividend clienteles, such as those outlined by Miller and Modigliani (1961) and Black and Scholes (1974), and some notion of investor sentiment.

Our first approach to understanding the demand side is to extend the Baker and Wurgler (2003) analysis of the raw rate of initiations and omissions and regress changes in *PTP* directly on three proxies for dividend clienteles. Because the approach is similar, we summarize the exercise only briefly. We form three clientele proxies. The personal tax advantage for dividends (in practice, a net disadvantage) is the relative after-tax income from dividends versus long-term capital gains for individual investors as calculated by the NBER TAXSIM model (Feenberg and Coutts, 1993). The corporate tax advantage of dividend income is the relative after-tax income from dividends versus long-term capital gains for C corporations. Corporate rates for 1970–2000 are from Graham (2003). Earlier ones are from various issues of the *IRS Statistics of Income.* Finally, to proxy for transaction cost-driven clienteles, total one-way trading costs are defined as one-half the average bid-ask spread on DJIA stocks plus the average commission on round-lot NYSE transactions. The transaction cost data are from Jones (2002).

We then regress these clientele proxies on changes in *PTP* as in Eq. (3). We exclude the dividend premium from these regressions, because in the logic of the theory it represents a summary statistic for excess clientele demand. We find that none of these three proxies has a

robust effect on the change in *PTP*.[5] Indeed, the tax clientele proxies are consistently the wrong sign. While these proxies surely mis-measure clientele demands to some extent, they appear to be straightforward measures and have been used in prior work.

Our second approach to understanding demand is an exhaustive analysis of *New York Times* articles pertaining to dividends. We use the search engine Factiva to identify all *New York Times* articles published between January 1, 1969 (when Factiva coverage begins) and December 31, 2001 that contain "dividend" or "dividends" at least twice in the abstract.[6] This leads to an initial sample of 1,567 articles to inspect more closely. We read the abstract of each of these articles to determine whether the article may contain some discussion of dividends that goes beyond firm characteristics, and hence could be relevant to understanding the propensity to pay. Most articles do not satisfy this screen. Ultimately, 103 of the initial set of abstracts suggest that the article contains some useful commentary, and we read the full text of each of these articles from the *New York Times* archives.

We find that a large number of these stories are suggestive of time-varying catering incentives. In particular, while references to clienteles based on transaction costs or institutional investment constraints are almost nonexistent, many mentions are made of dividends in the context of taxes and investor sentiment. However, many of the tax references involve tax policy proposals that were ultimately not implemented. For instance, those that appear around the crucial 1977–1978 turning point in *PTP* include a proposal to eliminate double taxation of dividends and a proposal to withhold taxes on dividend income. Both proposals were defeated and thus could have no persistent effect on *PTP*. More generally, little agreement exists between

[5] A table is available upon request.

[6] The search engine for historical *Wall Street Journal* articles is not sufficiently precise. For example, one cannot exclude advertisements. This causes thousands of false hits and makes the analysis unmanageable.

the timing and content of the tax-related articles and actual fluctuations in the dividend premium or *PTP*. This seems consistent with our own "nonresults" described above.

The sentiment references provide more affirmative evidence. While Baker and Wurgler (2003) report a correlation between the dividend premium and the closed-end fund discount, suggestive of some role for sentiment, the news reports give more descriptive color. Table 4 summarizes the basic pattern through a small sample of *New York Times* quotations. Which ones to present is somewhat arbitrary; those chosen span a wide period and capture themes that appear repeatedly. [7]

[INSERT TABLE 4 NEAR HERE]

The interesting feature of Table 4 is that the clusters of sentiment-related references coincide with observed patterns in the dividend premium and the propensity to pay. For instance, almost all of the references to sentiment for dividends appear in the years just before 1977, as the dividend premium was high and the propensity to pay was rising to a local maximum. The references that suggest sentiment was against payers occur after that, when the propensity to pay was low and falling. Some of these quotations also make reference to the late-1960s market environment (which predates Factiva coverage). They describe a boom in sentiment for new issues and extreme-growth stocks that is similar to the late-1990s boom. This parallel is also noted by Malkiel (1999). In both of these eras, the data suggest a discount on payers and a declining propensity to pay.

While clear limits exist to this sort of analysis, it sheds some useful, if preliminary, light on the nature of the demand for payers. In particular, the data in Table 4 (and the articles that could not be included there) suggest that the patterns we observe are affected by booms and busts

[7] Complete details of the database search procedure, classification, and results are available upon request.

in extreme-growth stocks, characteristically nonpayers. When sentiment for such stocks is high, as in the late 1960s and the late 1990s, the marginal investor appears to demand opportunities for capital gains, not staid firms that pay dividends. The dividend premium is negative and dividends tend to disappear. When this sentiment reverses, typically following a crash, the marginal investor demands stocks with perceived safe features including dividends. This seems to characterize the mid-1960s (which followed an early-1960s crash in growth stocks) and the mid-1970s, when the dividend premium rises and the propensity to pay increases.[8]

5. Conclusion

We establish a close empirical link between the propensity to pay dividends and catering incentives. First, we apply the methodology of Fama and French (2001) to earlier data to identify four distinct trends in the propensity to pay between 1963 and 2000—two appearances and two disappearances. Second, we show that each of these trends is associated with a corresponding fluctuation in catering incentives, where the latter is measured by the dividend premium variable from Baker and Wurgler (2003). Once the impact of the early 1970s intervention by Nixon's Committee on Interest and Dividends is noted, our analysis addresses essentially all significant fluctuations in the post-1963 propensity to pay time series. Moreover, we find that catering incentives are able to explain, in the appropriate out-of-sample test, the actual magnitude of the post-1977 disappearance documented by Fama and French.

A review of historical articles from the financial press suggests that firms could be catering to sentiment-driven demand. Dividends tend to disappear during pronounced booms in growth stocks and reappear after crashes in such stocks. The next several years may offer an out-

[8] Consistent with this dynamic, Fuller and Goldstein (2002) find that payers have higher (less negative) returns than nonpayers in months in which the S&P Index return is negative. This holds after controlling for factor loadings.

of-sample test of this dynamic. Internet stocks have recently crashed and market observers characterize the current period as a bear market. If market conditions like these continue, history suggests that the dividend premium will rise and dividends will reappear.

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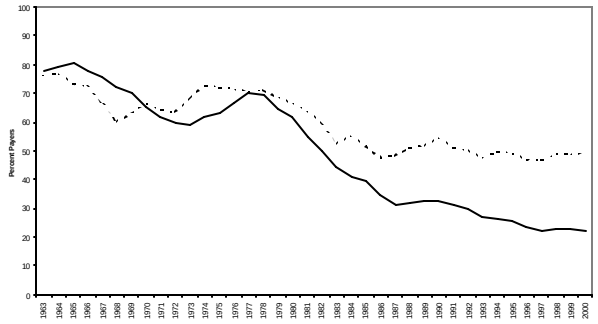
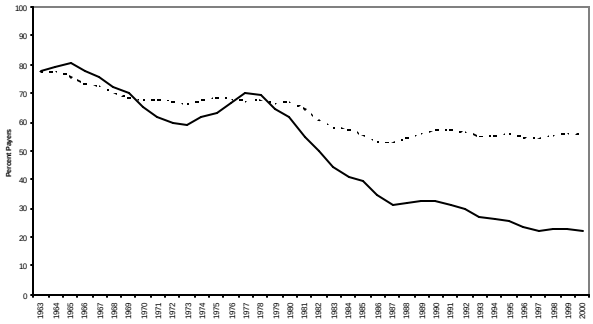
Fig. 1. The propensity to pay dividends, 1963–2000. Panels A and B show the actual percent (solid) and expected percent (dashed) of dividend payers in Compustat. Panels C and D show the propensity to pay dividends, i.e. the difference between the actual and expected percent. Panels E and F show changes in the propensity to pay dividends. Actual percent is the number of dividend payers divided by the number of firms in the sample that year. Expected percent is the expected percent of dividend payers based on prevailing sample characteristics. Following Fama and French (2001), one set of results (Panels A, C, and E) estimates the expected percent of payers with a logit model that includes the NYSE market capitalization percentile, the market-to-book ratio (*M/B*), asset growth, and profitability. The other set (Panels B, D, and F) excludes market-to-book. The propensity to pay dividends *PTP* is the difference between the actual and expected percent.

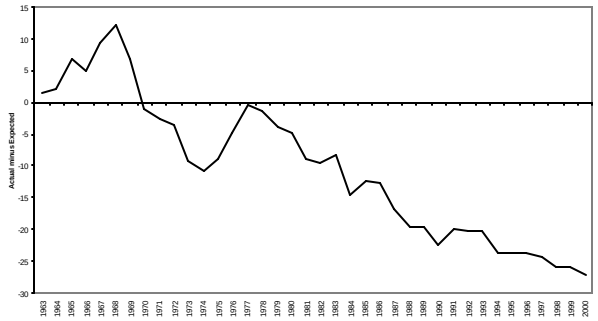
Panel A. Actual and expected percent payers



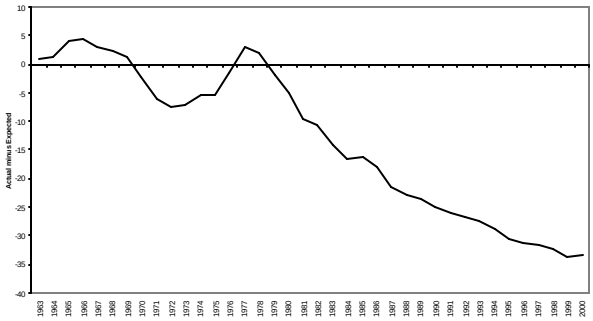
Panel B. Actual and expected percent payers (no *M/B*)



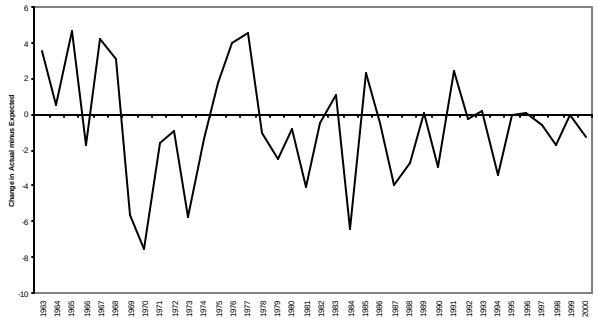
Panel C. The propensity to pay dividends



Panel D. The propensity to pay dividends (no *M/B*)



Panel E. Changes in the propensity to pay



Panel F. Changes in the propensity to pay (no *M/B*)

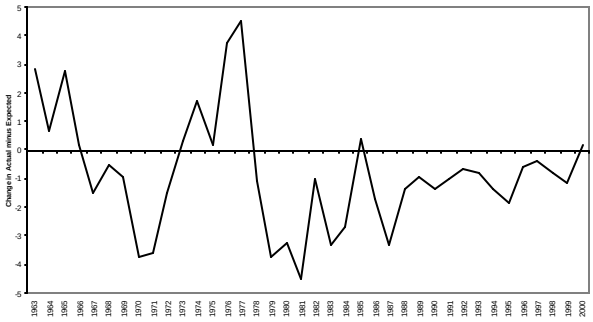
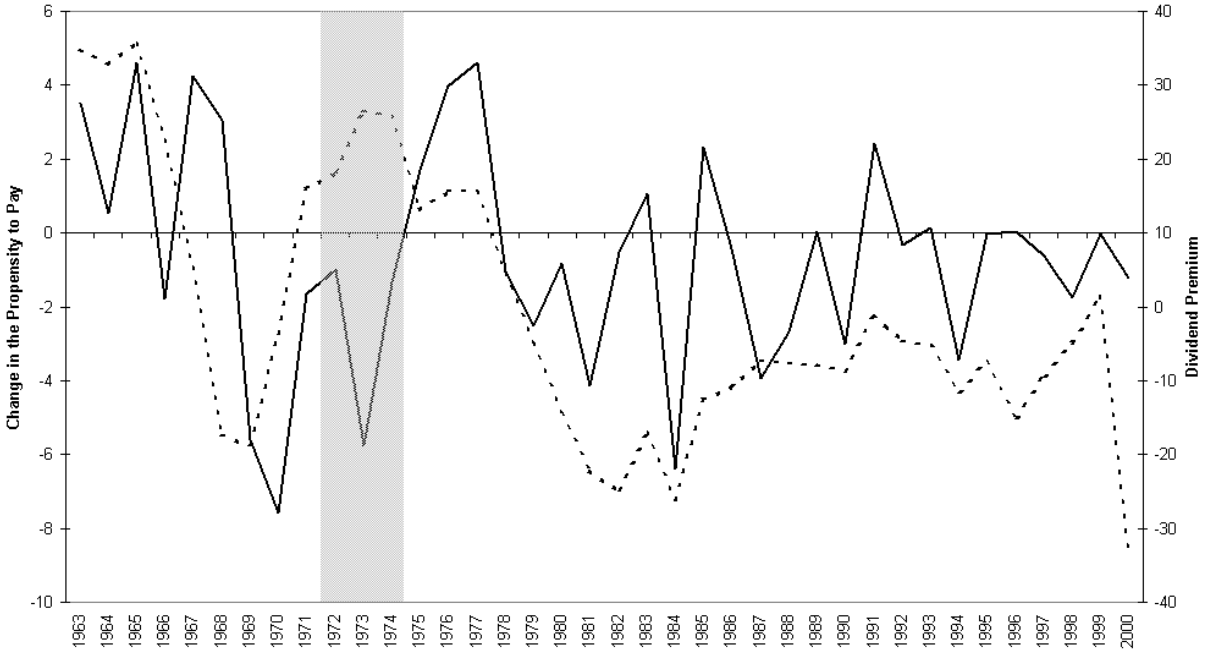


Fig. 2. The dividend premium and changes in the propensity to pay. Panel A shows the value-weighted dividend premium from Baker and Wurgler (2003) in percentage terms (lagged once; dashed line; right axis), changes in the propensity to pay dividends (solid line; left axis), and shading to denote the 1972 through 1974 Nixon administration dividend controls era. Panel B shows changes in the propensity to pay estimated from a measure that excludes market-to-book ratio (*M/B*) as a firm characteristic.

Panel A. The dividend premium, Nixon controls, and changes in the propensity to pay



Panel B. The dividend premium, Nixon controls, and changes in the propensity to pay (no *M/B*)

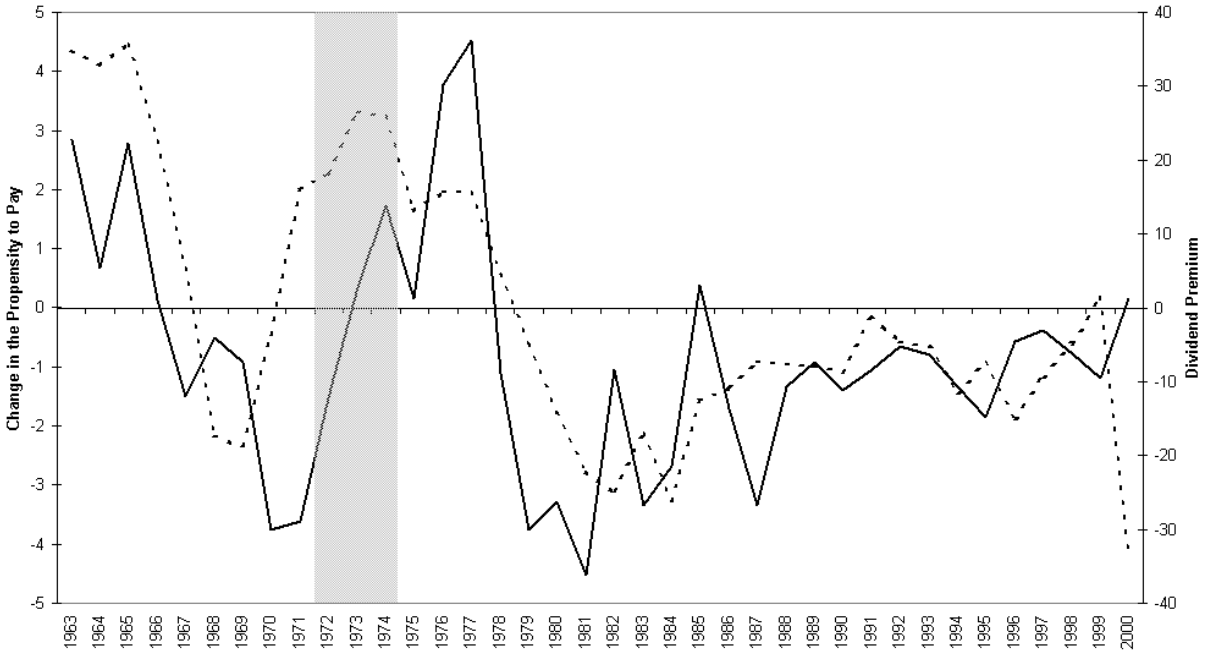


Table 1

Regressions to explain changes in the propensity to pay. Changes in the propensity to pay dividends *PTP* regressed on the lagged value-weighted dividend premium and a dummy for the 1972 through 1974 Nixon administration dividend controls period:

$$\Delta PTP_t = a + bP_{t-1}^{D-ND} + cNixon_t + v_t .$$

The dividend premium $P^{D\text{-}ND}$ is standardized to have unit variance. The M/B_t included columns report regressions in which *PTP* is estimated using a firm-level model of dividend payment that includes market-to-book as a relevant firm characteristic. The M/B_t excluded columns report regressions in which market-to-book is not included. T-statistics use standard errors that are robust to heteroskedasticity and serial correlation up to four lags.

	M/B_t included				M/B_t excluded			
Specification	b	[t-stat]	c	[t-stat]	b	[t-stat]	c	[t-stat]
				Panel A. 1963-2000				
Univariate	1.04	[2.4]			1.15	[3.2]		
Bivariate	1.53	[4.8]	-4.45	[-4.7]	1.22	[3.1]	-0.70	[-1.3]
				Panel B. 1963-1977				
Univariate	1.19	[1.7]			1.23	[5.7]		
Bivariate	1.70	[2.2]	-4.53	[-3.9]	1.34	[5.0]	-1.01	[-1.4]

Table 2

Out of sample forecast of the propensity to pay dividends. Actual percent is payers divided by firms. To determine the expected percent, we run Fama-MacBeth logit regressions of dividend policy on firm characteristics, using firm-year observations from 1963 to 1977. The firm characteristics are the NYSE percentile *NYP*, asset growth *dA/A*, and profitability *E/A*. The M/B_t included columns also include the market-to-book ratio *M/B*, while the M/B_t excluded columns do not. Expected percent of payers for a year *t* is estimated by applying the average logit regression coefficients for 1963-1977 to the values of the characteristics for each firm for year *t*, summing over firms, dividing by the number of firms, and then multiplying by 100. The propensity to pay *PTP* is the actual percent minus the expected percent. Expected PTP are the forecast values from the second-stage regression presented in Table 1.

		M/B_t included						M/B_t excluded					
		Base data		*Dividend premium*		*Dividend premium, Nixon*		Base data		*Dividend premium*		*Dividend premium, Nixon*	
Year	Actual percent	Expected percent	PTP	Expected PTP	PTP – Expected PTP	Expected PTP	PTP – Expected PTP	Expected percent	PTP	Expected PTP	PTP – Expected PTP	Expected PTP	PTP – Expected PTP
1978	69.54	70.97	-1.43	-0.57	-0.86	0.04	-1.47	67.62	1.92	-0.36	2.28	-0.22	2.14
1979	64.75	68.68	-3.93	-1.78	-2.16	-0.83	-3.10	66.59	-1.85	-1.37	-0.47	-1.16	-0.69
1980	61.97	66.74	-4.76	-3.59	-1.17	-2.58	-2.18	67.10	-5.13	-3.02	-2.10	-2.80	-2.33
1981	55.07	63.96	-8.88	-5.93	-2.96	-5.07	-3.81	64.72	-9.64	-5.21	-4.44	-5.02	-4.62
1982	50.15	59.56	-9.41	-8.44	-0.97	-7.83	-1.58	60.85	-10.69	-7.58	-3.11	-7.45	-3.24
1983	44.11	52.45	-8.35	-10.43	2.09	-9.82	1.47	58.13	-14.03	-9.41	-4.62	-9.28	-4.75
1984	40.71	55.45	-14.74	-13.03	-1.71	-12.70	-2.04	57.42	-16.72	-11.87	-4.84	-11.80	-4.92
1985	39.24	51.66	-12.42	-14.73	2.31	-14.28	1.86	55.57	-16.33	-13.40	-2.93	-13.30	-3.03
1986	34.85	47.71	-12.86	-16.34	3.48	-15.72	2.86	52.88	-18.03	-14.83	-3.20	-14.70	-3.33
1987	31.38	48.18	-16.81	-17.70	0.89	-16.81	0.00	52.75	-21.37	-16.00	-5.37	-15.81	-5.56
1988	31.59	51.08	-19.49	-19.08	-0.41	-17.95	-1.54	54.30	-22.71	-17.21	-5.50	-16.96	-5.75
1989	32.31	51.78	-19.46	-20.47	1.01	-19.08	-0.38	55.95	-23.64	-18.41	-5.22	-18.11	-5.53
1990	32.31	54.77	-22.46	-21.92	-0.54	-20.30	-2.16	57.33	-25.02	-19.68	-5.34	-19.32	-5.70
1991	31.10	51.13	-20.04	-22.86	2.83	-20.79	0.75	57.16	-26.06	-20.42	-5.64	-19.97	-6.09
1992	29.87	50.22	-20.35	-24.04	3.69	-21.63	1.28	56.58	-26.71	-21.41	-5.30	-20.88	-5.83
1993	27.32	47.52	-20.20	-25.27	5.07	-22.53	2.33	54.84	-27.51	-22.45	-5.07	-21.84	-5.67
1994	26.15	49.80	-23.65	-26.90	3.25	-24.01	0.36	55.01	-28.86	-23.90	-4.96	-23.27	-5.59
1995	25.41	49.10	-23.69	-28.27	4.58	-25.11	1.42	56.12	-30.71	-25.09	-5.62	-24.39	-6.32
1996	23.38	47.02	-23.65	-30.14	6.49	-26.94	3.29	54.66	-31.28	-26.79	-4.49	-26.08	-5.20
1997	22.49	46.75	-24.26	-31.63	7.37	-28.23	3.97	54.16	-31.67	-28.11	-3.57	-27.36	-4.31
1998	22.88	48.90	-26.01	-32.83	6.81	-29.08	3.07	55.33	-32.44	-29.11	-3.33	-28.28	-4.16
1999	22.64	48.66	-26.03	-33.61	7.58	-29.34	3.31	56.27	-33.63	-29.69	-3.94	-28.74	-4.89
2000	22.19	49.45	-27.26	-36.67	9.41	-32.88	5.62	55.67	-33.47	-32.62	-0.85	-31.79	-1.68

Table 3

Changes in the propensity to pay dividends: predicting returns, 1962–2000. Univariate regressions of future excess returns of dividend payers and nonpayers on the changes in the propensity to pay dividends. The dependent variable is the difference in future returns between dividend payers and nonpayers. r_{t+k} denotes returns in year $t+k$, and R_{t+k} denotes cumulative returns from $t+1$ through $t+k$. In Panel A, the independent variable is the value-weighted dividend premium from Baker and Wurgler (2003) in percentage terms. In Panels B through E, the independent variable is the change in the propensity to pay dividends. In Panels B and D, the propensity to pay is estimated including the market-to-book ratio (*M/B*) as a firm characteristic. In Panels C and E, the propensity to pay is estimated without the market-to-book ratio. Panels D and E adjust the propensity to pay for the influence of the Nixon administration controls, using the coefficients in the last row of Table 1. All independent variables are standardized to have zero mean and unit variance. We report OLS coefficients and bias-adjusted (BA) coefficients. Bootstrap p-values represent a two-tailed test of the null of no predictability.

	N	OLS	BA	[p-value]	R^2
Panel A. Dividend premium					
$r_{Dt+1} - r_{NDt+1}$	37	-6.24	-3.63	[0.25]	0.07
$r_{Dt+2} - r_{NDt+2}$	36	-10.12	-8.94	[0.03]	0.17
$r_{Dt+3} - r_{NDt+3}$	35	-11.26	-10.87	[0.02]	0.22
$R_{Dt+3} - R_{NDt+3}$	35	-26.21	-21.50	[0.07]	0.33
Panel B. Changes in PTP (*M/B* included)					
$r_{Dt+1} - r_{NDt+1}$	37	-0.50	-0.94	[0.90]	0.00
$r_{Dt+2} - r_{NDt+2}$	36	-7.11	-7.57	[0.08]	0.08
$r_{Dt+3} - r_{NDt+3}$	35	-6.21	-6.48	[0.15]	0.06
$R_{Dt+3} - R_{NDt+3}$	35	-14.37	-15.29	[0.32]	0.10
Panel C. Changes in PTP (*M/B* excluded)					
$r_{Dt+1} - r_{NDt+1}$	37	-6.03	-5.71	[0.19]	0.05
$r_{Dt+2} - r_{NDt+2}$	36	-15.05	-15.25	[0.00]	0.34
$r_{Dt+3} - r_{NDt+3}$	35	-11.80	-11.65	[0.02]	0.22
$R_{Dt+3} - R_{NDt+3}$	35	-32.68	-33.43	[0.02]	0.47
Panel D. Changes in PTP (*M/B* included), Nixon adjustment					
$r_{Dt+1} - r_{NDt+1}$	37	-0.19	-0.63	[0.96]	0.00
$r_{Dt+2} - r_{NDt+2}$	36	-8.02	-8.39	[0.05]	0.10
$r_{Dt+3} - r_{NDt+3}$	35	-8.46	-8.83	[0.05]	0.12
$R_{Dt+3} - R_{NDt+3}$	35	-17.24	-16.90	[0.23]	0.14
Panel E. Changes in PTP (*M/B* excluded), Nixon adjustment					
$r_{Dt+1} - r_{NDt+1}$	37	-5.72	-5.45	[0.22]	0.05
$r_{Dt+2} - r_{NDt+2}$	36	-14.83	-14.91	[0.00]	0.33
$r_{Dt+3} - r_{NDt+3}$	35	-12.14	-12.33	[0.01]	0.23
$R_{Dt+3} - R_{NDt+3}$	35	-32.50	-32.00	[0.04]	0.47

Table 4

Selected articles from a Factiva search of *New York Times* articles from 1969 through 2001.

Article date	Demand for dividends	Quotation
November 7, 1976	Yes	"Thanks to … [characteristics and] the rising yield-consciousness of stockholders, corporations are fattening their dividend payouts. … As investors became chary of the stock market, they were less apt to count on future earnings growth … and more likely to return to the bird-in-the-hand rationale of cash dividends."
May 18, 1977	Yes	"After years of disappointment—particularly with low-yielding glamour stocks—investors are emphasizing dividends in their stock selections."
February 15, 1981	No	"… nondividend payers have become the Big Board's star performers in recent years … 'My sophisticated investors never ask me if a stock pays a cash dividend,' says Mr. Schaeffer of Bache. 'They'd much rather have stock dividends than cash dividends.'"
May 7, 1995	No	"These days, dividends are rising rapidly, but not as fast as stock prices … perhaps we are witnessing a sea change in investor attitudes. … Most investors don't seem to be very interested in dividends just now. … Maybe dividends simply don't matter anymore."
January 3, 1997	No	"In this buoyant stock market, companies have seen relatively little demand for higher payouts from shareholders who, after all, have been seeking and getting capital gains."
October 7, 1999	No No (late 1960s) Yes (after 1968)	"What is unusual is that the economy is doing so well even while companies are growing more reluctant to raise their dividends … the [last] time companies cut back on dividend increases even as the economy continued to grow is … the late-1960's market … [which] bears more than a passing resemblance to this one. The stock market had been going up steadily for the better part of two decades … Dividends can go so low because investors do not care much about them. It is capital gains that have made them rich, and it is the pursuit of capital gains that drives stock investments now. … After 1968, as it became clear that capital losses were possible, investors came to value dividends, and the pressure grew on companies to pay them."
January 4, 2000	No No (late 1960s)	"A growing portion of corporate America appears to be concluding that dividends are no longer needed to attract investors … decline [in percent of payers in S&P Index] also reflects an investor attitude that puts little pressure on companies to make payouts. … The only similar trend occurred in the late 1960's, another time that small technology companies were all the rage and the market for new issues was red hot. A variety of reasons are given for the trend away from dividends, including the tax disadvantages … but that has always been true, and the effect presumably should have been greater two decades ago, when tax rates were much higher … The most likely explanation … would seem to be the most obvious. Investors, after seeing year after year of huge capital gains, no longer see much of a need for dividends as an assured return if the market declines … "