Do Managers Cater To the Investors' Demand for Income?

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Abstract

Investors have a higher demand for and place a higher valuation on income-generating assets such as high-dividend stocks when interest rates are low (Daniel et al., 2021). We examine whether managers cater to such investor demand for income by paying dividends when interest rates are low, and by not paying when interest rates are high to boost their firms' share prices. There is evidence of this when the controls for the known determinants of dividend policy are omitted. However, once the controls (most notably, for risk) are incorporated, the relationship disappears. Share repurchases exhibit patterns inconsistent with the catering hypothesis.

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Keywords: monetary policy, corporate payout policy, catering theory

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1 Introduction

A large fraction of investors follow a "rule of thumb" of living off the income stream from their investment portfolios while keeping the principal untapped (Daniel et al., 2021). These investors structure their investment portfolios to provide a level of current income which matches their desired consumption. When the income from certain assets (such as bank deposits and short-term bonds) falls, for example because of declines in interest rates, investors who live off of income move into higher income assets such as high-dividend stocks. [1] Because the supply of high-income assets is slow to adjust (Lintner, 1956; Baker and Wurgler, 2004b), the increased demand from income-seeking investors drives up prices of these assets. [2] In this paper, we examine whether firms cater to such demand for income by paying dividends when interest rates are low, and by not paying when interest rates are high to boost their share prices. Such behavior could be an explanation for the disappearing (1980s-2000) and reappearing (2000-current) dividend trends (Julio and Ikenberry, 2004; Michaely and Moin, 2020) given that interest rates have generally gone up and down during these respective time frames.

Daniel et al. (2021) find suggestive evidence of firms initiating dividends when interest rates are low. They graphically document a negative relationship between the level of interest rates and the fraction of firms that initiate cash dividends in the following year. Additionally, they document no such relationship between the initiations of share repurchases and interest rates - a result consistent with the catering hypothesis given that investors have a preference for income rather than capital gains when interest rates are low. Our paper takes the analysis of Daniel et al. (2021) a step further. Prior literature has documented several significant determinants of the decisions to pay, increase, and initiate cash dividends and share repurchases such as firm size, market-to-book ratio, asset growth, profitability

[1] Daniel et al. (2021) label this behavior *reaching for income*. Among other things, they document that a decline in interest rates leads to (i) strong and persistent inflows to high-income equity and bond funds, and (ii) to retail investors purchasing more high- rather than low-dividend stocks.

[2] Jiang and Sun (2020) propose essentially the same mechanisms and document the same results.

(Fama and French, 2001) as well as risk (Hoberg and Prabhala, 2009). We extend the findings of Daniel et al. (2021) by examining the relationship between interest rates and an expanded set of payout decisions in a multivariate setting. As the rest of this paper shows, this is an important contribution given that once the known determinants of the payout policy are controlled for, the conclusions regarding the reaching for income channel of the catering hypothesis change.

Our empirical approach is the following. We first estimate propensities to pay dividends, to repurchase shares, and to increase and initiate dividends and share repurchases. Generally, these propensities are defined as the difference between the actual percentage of firms pursuing each of these payout policies in a given year and the expected percentage. The expected percentages are estimated using logit models that incorporate the known determinants of the payout policy mentioned above. Then, we examine whether these propensities are related to interest rates.

We begin by examining whether interest rates explain changes in the propensity to pay dividends. We estimate a logit model explaining the probability that a firm is a dividend payer in the Compustat-CRSP sample from 1962 to 2018 (Fama and French, 2001; Hoberg and Prabhala, 2009). The baseline set of explanatory variables includes the market-to-book ratio, asset growth, profitability, and NYSE size percentile, which is complemented by the systematic and idiosyncratic risk variables in some specifications. Consistent with prior literature, we find that all of these variables are significant determinants of the firms' decision to pay dividends. Profitable and large firms are more likely to pay dividends, whereas high asset growth, high market-to-book ratio, and high risk firms are less likely to pay dividends. We then regress the change in the propensity to pay dividends on the T-Bill rate where the propensity to pay is defined as the difference between the actual percentage of firms paying dividends in a given year and the expected percentage, which is the average predicted probability from the above logit model.

We find that the T-Bill rate is negatively related to the changes in the non-risk-adjusted propensity to pay dividends with the relationship being significant at the 1% level. The non-risk-adjusted propensity is estimated using the logit model that omits controls for idiosyncratic and systematic risk. This result would suggest that firms cater to investors' demand for income by paying dividends when interest rates are low and not paying dividends when interest rates are high. However, when we regress the change in the (systematic and idiosyncratic) risk-adjusted propensity to pay dividends on the T-Bill rate, the coefficient on the T-Bill rate loses statistical significance. The adjusted R-squared in the regression drops from 0.081 to -0.016. Given that risk is a core determinant of the firms' decision to pay dividends (Hoberg and Prabhala, 2009), we conclude that our estimates are inconsistent with the reaching for income channel of the catering hypothesis. [3]

The aggregate dividend supply can come from two sources: companies that already pay dividends and companies that newly initiate dividends in a given year. As pointed by Hoberg and Prabhala (2009), virtually the entire supply of dividends in any one year comes from companies that already pay dividends, however, their dividend choice are not reflected in the pay/no-pay logit estimates. Additionally, the results of Daniel et al. (2021) referenced earlier concern dividend initiations. We therefore extend our propensity to pay results by the examining the two sources of dividend supply separately.

We estimate non-risk-adjusted and risk-adjusted propensities to increase and initiate dividends. The second-stage empirical models with increases and initiations are different in light of the following issue. The payer/nonpayer logit models described above are used to derive a stock variable, propensity to pay dividends. The first difference in propensity to pay is a flow variable. The decision to increase is already a flow variable, so innovations in this series could reflect over differencing when the true autocorrelation is less than 1.0 (Hoberg and Prabhala, 2009). Hence, following Baker and Wurgler (2004b) and Hoberg and Prabhala (2009), we

[3] The motivation for presenting two sets of results (one with non-risk-adjusted and the other with risk-adjusted propensity) is to underscore the importance of incorporating certain control variables when testing the catering theory. Such presentation follows Hoberg and Prabhala (2009) who show that once controls for risk are incorporated, the relationship between dividend fads and the propensity to pay dividends documented by Baker and Wurgler (2004b) disappears.

estimate AR(1) models to address the potential over differencing. The dependent variables in these specifications are the levels of the propensities to increase and initiate dividends. In both models, AR(1) terms are significant, indicating a heavy autocorrelation. And in both models, the coefficient on the T-Bill rate is statistically insignificant in specifications that omit and include controls for risk in the first-stage logit model. These results are inconsistent with the catering theory.

The catering hypothesis predicts that the likelihood of repurchasing shares does not exhibit a negative correlation with interest rates because low interest rates increase the demand for current income rather than capital gains - the relationship should be either positive or absent. Note, however, that the absence of a relationship between interest rates and share repurchases would also be consistent with the case when firms do not cater to investor demand for current income. Share repurchases would simply be independent from the interest rate environment.

We examine whether interest rates explain changes in the propensity to repurchase shares. We estimate a logit model explaining the probability that a firm repurchases shares using the same set of explanatory variables as before: the market-to-book ratio, asset growth, profitability, and NYSE size percentile complemented by systematic and idiosyncratic risk variables in some specifications. We then regress the change in the propensity to repurchase shares on the T-Bill rate. Propensity to repurchase is the difference between the actual percentage of firms repurchasing shares in a given year and the expected percentage, which is the average predicted probability from the aforementioned logit model. We find that the coefficient on the T-Bill rate is statistically insignificant regardless of whether we include or omit controls for risk in the logit model. Following the discussion above, we conclude that this finding is neither consistent nor inconsistent with the catering hypothesis.

In the next set of analyses, we study the two sources of aggregate share repurchases' supply separately: companies that already repurchase shares and companies that newly initiate share repurchases in a given year. With respect to increases in share repurchases, we find that the T-Bill rate is negatively and significantly related to the level of the propensity to increase share repurchases in AR(1) models that omit and include controls for risk. This means that firms increase repurchases when interest rates are low, and decrease repurchases when interest rates are high, which is the opposite of what the catering hypothesis predicts. With respect to the initiations of share repurchases, we find that in an AR(1) model where the dependent variable is the level of the propensity to initiate, the coefficient on the T-Bill rate is statistically insignificant. As in the case of the propensity to repurchase shares, this finding is neither consistent nor inconsistent with the catering hypothesis.

One of the key findings of Daniel et al. (2021) is that a low interest rate monetary policy leads to a higher valuation of dividend paying stocks. The estimates in our paper point to firms not catering to the investors' demand for income in the low interest rate environment. These patterns suggest that firms are unable or unwilling to increase the supply of dividends to match the investors' demand, which results in a positive effect on firms' asset prices. If firms were able to increase the supply of dividends to match the demand, we would not have seen a significant effect on firms' asset prices. While our conclusion is similar to the one reached by Daniel et al. (2021) who say that firms meet some but not all demand for dividends through initiations in the low interest rate environment, it is different in that we show firms meet *none* of such demand.

More broadly, our findings contribute to the literature studying the catering theory of corporate payouts. [4] Baker and Wurgler (2004b) show that when investors exhibit a stronger preference for dividend-paying firms, managers initiate or increase dividends to capture the dividend premium. Hoberg and Prabhala (2009) show that this relation can be explained by differences in firm risk. Our paper shows the importance of controlling for the known determinants of the payout policy when testing the catering theory of payouts.

[4] See, for example, Baker and Wurgler (2004a,b), Li and Lie (2006), Hoberg and Prabhala (2009), Jiang et al. (2013), Kulchania (2013), and Kumar et al. (2020).

2 Data

The Compustat-CRSP sample for calendar year t, 1962–2018, includes those firms with fiscal year-ends in t that have the following data (Compustat 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), dividends per share by ex-date (26), preferred dividends (19), and (i) preferred stock liquidating value (10), (ii) preferred stock redemption value (56), or (iii) preferred stock carrying value (130). Firms must also have (i) stockholder's equity (216), (ii) liabilities (181), or (iii) common equity (60) and preferred stock par value (130). We exclude firms with book equity below $250,000 or assets below $500,000, and utilities (SIC Codes 4900-4949) and financial firms (SIC Codes 6000-6999). The variable definitions are provided below, and the summary statistics are provided in Table 1.

- Book equity (be): Stockholder's Equity (216) minus Preferred Stock plus Balance Sheet Deferred Taxes and Investment Tax Credit (35) minus Post Retirement Asset (330). If data item 216 is not available, it is replaced by either Common Equity (60) plus Preferred Stock Par Value (130), or Assets (6) - Liabilities (181). Preferred Stock is Preferred Stock Liquidating Value (10) [or Preferred Stock Redemption Value (56), or Preferred Stock Par Value (130)].

- Market equity (me): Fiscal year closing price times shares outstanding.

- NYSE percentile (nyp): NYSE market capitalization percentile, i.e., the fraction of NYSE firms having equal or smaller capitalization than firm i in year t.

- Market-to-book ratio (mb): Book assets (6) minus *Book equity* plus *Market equity* all divided by book assets (6).

- Asset growth (at_g): Percent growth in assets (6) from year t-1 to year t.

- Earnings/Assets (e_at): Earnings before extraordinary items (18) plus interest expense (15) plus income statement deferred taxes (50) divided by assets (6).

- Dividend payer (payer): A firm is a dividend payer in year t if it has positive dividends per share by the ex-date (26) in the fiscal year that ends in year t.

- Nixon dummy (nixon): A dummy variable equal to one for years 1972–1974, and zero otherwise. This variable controls for the Nixon era dividend-freeze policy noted in Baker and Wurgler (2004a).

- Idiosyncratic risk (idio): A firm's idiosyncratic risk is the standard deviation of residuals from a regression of its daily excess stock returns (raw returns less the riskless rate) on the market factor (i.e., the value-weighted market return less the riskless rate). One firm-year observation of idiosyncratic risk is computed using firm-specific daily stock returns from one calendar year.

- Systematic risk (sys): A firm's systematic risk is the standard deviation of the predicted value from the above regression used to define idiosyncratic risk.

3 Do Managers Cater To the Investors' Demand for Income?

3.1 Dividends

3.1.1 Logit Estimates: Which Firms Pay Dividends?

Following Fama and French (2001) and Hoberg and Prabhala (2009), we first estimate the following logit model explaining the probability that a firm is a dividend payer:

$$Pr(payer_{it} = 1) = logit(\alpha_0 + \alpha_1 mb_{it} + \alpha_2 at\_g_{it} + \alpha_3 e\_at_{it} + \alpha_4 nyp_{it}) + \mu_{it} \quad (1)$$

The dependent variable is one if firm i pays a dividend in year t, and zero otherwise. In row (1) of Table 2 the explanatory variables are the market-to-book ratio, asset growth, profitability, and NYSE size percentile. This set of variables is complemented by systematic and idiosyncratic risk in row (2) of Table 2. The reported coefficients and t-statistics are Fama and MacBeth (1973) time-series averages of the annual cross-sectional logit coefficients.

The estimates in row (1) of Table 2 are consistent with those in Fama and French (2001): profitable and large firms are more likely to pay whereas firms with greater asset growth and higher market-to-book ratios are less likely to pay. All explanatory variables are statistically significant at the 1% level. The estimates in row (2) of Table 2 are consistent with those in Hoberg and Prabhala (2009): both idiosyncratic and systematic risk are just as significant determinants of the firms' decision to pay as are the determinants proposed by Fama and French (2001). Hence, the subsequent analyses will utilize both the nonrisk-adjusted and risk-adjusted logit estimates.

Figure 1 plots the nonrisk-adjusted propensity to pay dividends from 1962 to 2018 against the 3-month T-Bill rate. The propensity to pay (PTP) for year t is constructed based on the logit estimates in row (1) of Table 2. PTP is the difference between the actual percentage of firms paying dividends in a given year and the expected percentage, which is the average predicted probability from a given logit model. The figure shows that there was a strong downward trend in the propensity to pay dividends starting in the 1960s, which has bottomed out in the late 90s and early 2000s and was followed by a reversal. There is also evidence of a negative relationship between the T-Bill rate and the nonrisk-adjusted propensity to pay: the two series have trended in opposite directions in all decades except in the 1980s.

Figure 2 plots the risk-adjusted propensity to pay dividends from 1962 to 2018 against the 3-month T-Bill rate. The propensity to pay (PTP) for year t is constructed based on the logit estimates in row (2) of Table 2. The figure reveals that the risk-adjusted propensity to pay dividends has stayed relatively constant during the 1960s and the 1970s, and then dropped quickly and dramatically around year 1980. After the drop, the risk-adjusted propensity to pay dividends has once again stayed relatively constant. The negative relationship between the T-Bill rate and the risk-adjusted PTP is not apparent.

3.1.2 T-Bill Rate and Changes in the Propensity to Pay Dividends

In this sub-section, we regress the change in the propensity to pay dividends on the previous year's average 3-Month T-Bill rate to examine whether firms cater to investor demand for income by paying dividends when interest rates are low, and by not paying when interest rates are high to boost their share prices. Each column of Table 3 reports the results of one time-series regression. The dependent variable in the first column is the change in the propensity to pay without controls for risk and in the second - the change in the PTP with controls for risk. We include a Nixon Dummy in both specifications to control for the Nixon era dividend-freeze policy noted in Baker and Wurgler (2004a).

The estimates in Table 3 reveal the following. In column (1), where the propensity to pay dividends is calculated without controls for risk, the coefficient on the T-Bill rate is negative and statistically significant at the 1% level. The adjusted R-squared in this regression is equal to approximately 8%. These results suggest that firms cater to the investors' demand for income. In column (2), where the propensity to pay dividends is calculated with controls for risk, the estimates drastically change. The coefficient on the T-Bill rate becomes statistically insignificant, and the adjusted R-squared in the regression drops to -0.016. These findings are inconsistent with the catering hypothesis.

Overall, the results in this sub-section underscore the conclusions of Hoberg and Prabhala (2009) that once risk is incorporated as a determinant of the firms' decision to pay dividends, the catering theory does not hold. Whereas Hoberg and Prabhala (2009) show this using various proxies for dividend fads (most notably the dividend premium of Baker and Wurgler (2004b)), we arrive at the same conclusion when studying the T-Bill rate.

3.1.3 T-Bill Rate and the Propensity to Increase Dividends

In this sub-section, we study companies that already pay dividends. As pointed by Hoberg and Prabhala (2009), virtually the entire supply of dividends in any one year comes from companies that already pay dividends, however, their dividend choice are not reflected in the pay/no-pay logit estimates.

Table A1 reports estimates of logit models in which the dependent variable is one if a firm announces a dividend increase in a given year, and is zero otherwise. The parameter estimates are Fama and MacBeth (1973) time-series averages of the cross-sectional coefficients. The first row uses the same independent variables as Fama and French (2001): profitability, firms size, asset growth, and market-to-book. All these variables are significant determinants of the propensity to increase dividends. In Row (2), we complement the Fama and French (2001) variables with both the idiosyncratic and the systematic risk variables and find that the latter two variables are also significant determinants of the firms' propensity to increase dividends.

In Table 4, we examine whether there is a relationship between the T-Bill rate and the propensity to increase dividends. The payer/nonpayer logit models described in the previous section are used to derive a stock variable, propensity to pay. The first difference in propensity to pay is a flow variable. The decision to increase is already a flow variable, so innovations in this series could reflect over differencing when the true autocorrelation is less than 1.0 (Hoberg and Prabhala, 2009). Hence, following Baker and Wurgler (2004b) and Hoberg and Prabhala (2009), we estimate AR(1) models to address the potential over differencing. The dependent variable in this specification is the *level* of the propensity to increase dividends - nonrisk-adjusted in column (1) of Table 4 and risk-adjusted in column (2).

The AR(1) term is significant in both columns of Table 4, indicating autocorrelation of close to 0.75. The coefficient on the T-Bill rate is statistically insignificant both in specifications that omit and include controls for risk in the first-stage logit model. This evidence is not consistent with the catering hypothesis.

3.1.4 T-Bill Rate and the Propensity to Initiate Dividends

Table 5 examines the relation between the T-Bill rate and the propensity to initiate dividends. Dividend initiations represent the second component of dividend supply. They are economically small accounting for less than 1% of the annual dividend flow and around 10% of the change in annual flow ((Hoberg and Prabhala, 2009)). We start with all firms that do not pay a dividend in year $t-1$ and identify initiators as firms paying dividends in year t. Table A2 reports the Fama-MacBeth logit estimates for the probability of initiating a dividend. Profitability, firms size, asset growth, market-to-book ratio, and risk are all significant determinants of the decision to initiate dividends.

In Table 5, we estimate AR(1) models. The dependent variables in columns (1) and (2) are the nonrisk-adjusted and the risk-adjusted propensity to initiate dividends. The AR(1) term is significant in both columns, indicating autocorrelation of 0.80. The coefficient on the T-Bill rate is statistically insignificant both in specifications that omit and include controls for risk in the first-stage logit model. As with dividend increases, this evidence is not consistent with the catering hypothesis.

3.2 Repurchases

The catering hypothesis predicts that the likelihood of share repurchases does not exhibit a negative correlation with interest rates because low interest rates increase the demand for current income rather than capital gains. In other words, under the catering hypothesis, the relationship between interest rates and the likelihood of share repurchases is either positive or absent. Note that the absence of the relationship is observationally equivalent to the case when firms do not cater to investor demand for current income. Hence, we will be able to conclude that the estimates are inconsistent with the catering hypothesis only if we observe a negative relationship between interest rates and the likelihood of share repurchases. And we will be able to conclude that the estimates are consistent with the catering hypothesis only if we observe a positive relationship.

3.2.1 T-Bill Rate and Changes in the Propensity to Repurchase

We estimate a logit model explaining the probability that a firm is a share repurchaser. The dependent variable y_{it} is one if firm i repurchases shares in year t and zero otherwise. In row (1) of Table 6, the explanatory variables are the market-to-book ratio, asset growth, profitability, and NYSE size percentile. This set of variables is complemented by systematic and idiosyncratic risk in row (2) of the same table. The reported coefficients and t-statistics are Fama and MacBeth (1973) time-series averages of the annual cross-sectional logit coefficients. The results show that all of the mentioned variables but the systematic risk are significant determinants of the firms' decision to repurchase shares. The coefficients are statistically significant at the 1% level.

Next, we define the propensity to repurchase in year t as the actual repurchasing status of each firm i in year t minus the predicted probability of repurchasing, averaged across all sample firms in year t. We then regress the change in the propensity to repurchase on the T-Bill rate. Each column in Table 7 reports the results of one time-series regression. The dependent variable in the first column is the change in the propensity to repurchase without controls for risk, and in the second column - the change in the propensity to repurchase with controls for risk. In both columns, the coefficient on the T-Bill rate is statistically insignificant. We conclude that the patterns documented in Table 7 are neither consistent nor inconsistent with the main hypothesis.

3.2.2 T-Bill Rate and the Propensity to Increase Share Repurchases

Table A3 reports estimates of logit models in which the dependent variable is one if a firm announces an increase in repurchases in a given year, and is zero otherwise. The parameter estimates are Fama and MacBeth (1973) time-series averages of the cross-sectional coefficients. The first row uses the same independent variables as Fama and French (2001): profitability, firms size, asset growth, and market-to-book. All of these variables but the market-to-book ratio are significant determinants of the propensity to increase repurchases. In row (2), we complement the Fama and French (2001) variables with both the idiosyncratic and the systematic risk variables and find that idiosyncratic risk is a significant determinant of the firms' propensity to increase repurchases. The coefficient on the systematic risk variable is statistically insignificant.

In Table 8, we examine whether there is a relationship between the T-Bill rate and the propensity to increase repurchases. The dependent variables in columns (1) and (2) are the nonrisk-adjusted and the risk-adjusted propensities to increase repurchases. The AR(1) term is insignificant in both columns. The coefficient on the T-Bill rate is negative and statistically significant in specifications that omit and include controls for risk. This means that firms increase repurchases when interest rates are low, and decrease repurchases when interest rates are high. This pattern is inconsistent with the catering hypothesis. Recall, the reaching for income channel predicts the opposite: the likelihood of increasing share repurchases does not exhibit a negative correlation with interest rates.

3.2.3 T-Bill Rate and the Propensity to Initiate Share Repurchases

Finally, in Table 9, we study the relation between the T-Bill rate and the propensity to initiate repurchases. We start with all firms that do not repurchase shares in year $t-1$ and identify initiators as firms repurchasing shares in year t. Table A4 reports the Fama-MacBeth logit estimates for the probability of initiating a dividend. In Table 9, we estimate AR(1) models. The dependent variables in columns (1) and (2) are the nonrisk-adjusted and the risk-adjusted propensity to initiate dividends. The AR(1) term is significant in both columns, indicating autocorrelation of around 0.50. The coefficient on the T-Bill rate is statistically insignificant both in specifications that omit and include controls for risk in the first-stage logit model. We conclude that these patterns are neither consistent nor inconsistent with the catering hypothesis.

4 Conclusion

In this paper, we examine whether firms cater to investors' demand for income by paying dividends when interest rates are low, and by not paying when interest rates are high to boost their share prices. There is evidence of this when the controls for the known determinants of dividend policy are omitted. For example, Daniel et al. (2021) graphically document a negative relationship between the level of interest rates and the fraction of firms that initiate cash dividends in the following year, and we show a significant negative relationship between the level of interest rates and the change in the non-risk-adjusted propensity to pay dividends in the following year. However, once the controls (most notably, for risk) are incorporated, the above relationships disappear. Moreover, share repurchases exhibit patterns inconsistent with the catering hypothesis.

In the beginning of the paper, we posited that catering behavior could be an explanation for the disappearing (1980s-2000) and reappearing (2000-current) dividend trends (Julio and Ikenberry, 2004; Michaely and Moin, 2020) given that interest rates have generally gone up and down during these respective time frames. We conclude that changes in monetary policy since the 1960s do not explain neither the disappearing nor the reappearing of dividends.

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Figures

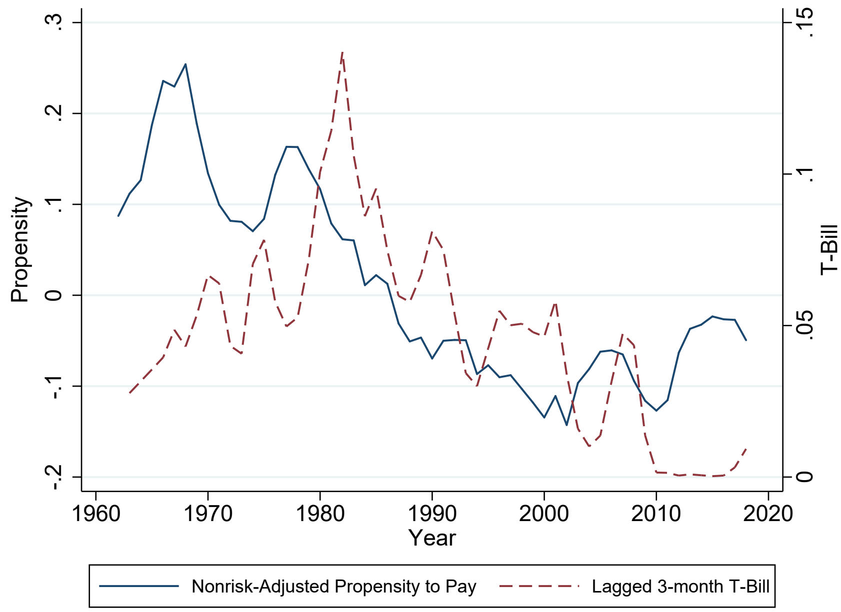

Figure 1: The propensity to pay dividends without controls for risk and the T-Bill rate. The propensity to pay is the difference between the actual fraction of firms paying dividends in a given year less the expected fraction of firms paying dividends. The expected fraction of firms paying dividends is equal to the average predicted value from the logistic regressions that include the market-to-book ratio, asset growth, earnings to assets, and NYSE percentile as control variables.

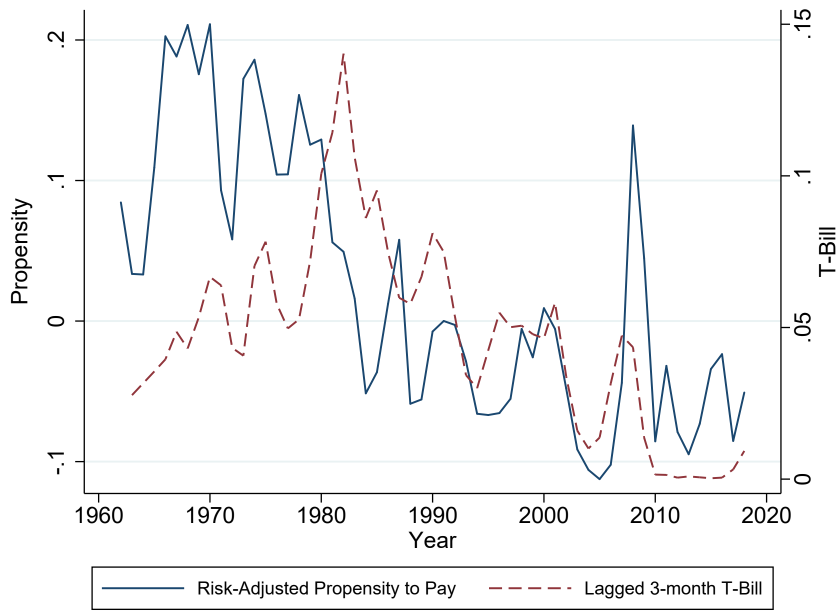

Figure 2: The propensity to pay dividends with controls for risk and the T-Bill rate. The propensity to pay is the difference between the actual fraction of firms paying dividends in a given year less the expected fraction of firms paying dividends. The expected fraction of firms paying dividends is equal to the average predicted value from the logistic regressions that include the market-to-book ratio, asset growth, earnings to assets, and NYSE percentile as control variables.

Tables

Table 1: Summary statistics

	Mean	Std. Dev.	P10	Median	P90
be	1,081.626	6,736.213	3.001	60.943	1,438.000
me	2,578.861	15263.823	6.583	108.242	3,326.043
mb	1.887	7.270	0.805	1.305	3.250
e_at	-0.018	0.568	-0.208	0.061	0.135
at_g	0.217	18.691	-0.169	0.066	0.469
payer	0.409	0.492	0.000	0.000	1.000
idio	0.035	0.027	0.014	0.028	0.064
sys	0.008	0.007	0.001	0.007	0.016

This table provides summary statistics for the sample, which includes Compustat-CRSP firms from 1962 to 2018. The detailed sample construction procedure and variable definitions are provided in Section 2.

Table 2: Logit models explaining which firms pay dividends

	idio	sys	mb	at_g	e_at	nyp	Constant
(1)			-0.64	-0.78	9.36	4.35	-0.87
			(-15.73)	(-11.32)	(10.54)	(30.73)	(-9.88)
(2)	-82.13	-79.93	-0.44	-0.6	6.59	3.09	2.1
	(-18.41)	(-9.23)	(-14.79)	(-6.67)	(8.84)	(18.15)	(11.05)

This table reports Fama-MacBeth (1973) style estimates of a logit model with t-statistics in parentheses. One cross-sectional model is estimated per year. The dependent variable is equal to one for dividend-paying firms and is zero otherwise. Independent variables are idiosyncratic risk, systematic risk, market-to-book ratio, asset growth, earnings to assets, and NYSE percentile to which a firms' market capitalization belongs. These variables are defined in Section 2.

Table 3: Interest rates and the change in the propensity to pay dividends

	(1) dptp	(2) dptp_risk
lag_tbill	-0.285***	-0.025
	(-3.19)	(-0.13)
nixon	-0.006	0.035*
	(-1.37)	(1.76)
Constant	0.011*	-0.003
	(1.75)	(-0.27)
Adj. R-squared	0.081	-0.016
Obs.	56	56

This table reports time-series regression coefficients with Newey-West t-statistics (two lags) in parentheses. The dependent variables in columns (1) and (2) are changes in the propensity to pay dividends and in the risk-adjusted propenisty to pay dividends, respectively. The key independent variable is the previous year average 3-month T-Bill rate. The Nixon dummy is equal to one for years 1972 to 1974 and is zero otherwise. * p<0.10, ** p<0.05, *** p<0.01.

Table 4: Interest rates and the propensity to increase dividends

	(1) ptincrease	(2) ptincrease_risk
lag_tbill	-0.250	0.182
	(-0.38)	(0.25)
nixon	0.078	0.093
	(0.94)	(1.24)
Constant	0.019	-0.007
	(0.50)	(-0.17)
ARMA		
L.ar	0.745***	0.742***
	(7.38)	(8.70)
Obs.	56	56

This table reports estimates of AR(1) models with z-statistics in parentheses. The dependent variables in columns (1) and (2) are the propensity to increase dividends and the risk-adjusted propensity to increase dividends, respectively. The key independent variable is the previous year average 3-month T-Bill rate. The Nixon dummy is equal to one for years 1972 to 1974 and is zero otherwise. * p<0.10, ** p<0.05, *** p<0.01.

Table 5: Interest rates and the propensity to initiate dividends

	(1) ptinitiate	(2) ptinitiate_risk
lag_tbill	-0.364	-0.238
	(-1.11)	(-0.75)
nixon	0.013	0.018
	(0.50)	(0.71)
Constant	0.032	0.028
	(1.36)	(1.11)
ARMA		
L.ar	0.808***	0.773***
	(11.42)	(8.72)
Obs.	56	56

This table reports estimates of AR(1) models with z-statistics in parentheses. The dependent variables in columns (1) and (2) are the propensity to initiate dividends and the risk-adjusted propenisty to initiate dividends, respectively. The key independent variable is the previous year average 3-month T-Bill rate. The Nixon dummy is equal to one for years 1972 to 1974 and is zero otherwise. * p<0.10, ** p<0.05, *** p<0.01.

Table 6: Logit models explaining which firms repurchase

	idio	sys	mb	at_g	e_at	nyp	Constant
(1)			-0.16	-0.38	1.95	1.16	-0.73
			(-6.2)	(-10.99)	(11.93)	(10.82)	(-16.7)
(2)	-19.26	-4.66	-0.14	-0.36	1.35	0.69	0.02
	(-11.69)	(-1.49)	(-5.67)	(-10.1)	(8.3)	(9.16)	(0.26)

This table reports Fama-MacBeth (1973) style estimates of a logit model with t-statistics in parentheses. One cross-sectional model is estimated per year. The dependent variable is equal to one for firms that repurchase and is zero otherwise. Independent variables are idiosyncratic risk, systematic risk, market-to-book ratio, asset growth, earnings to assets, and NYSE percentile to which a firms' market capitalization belongs. These variables are defined in Section 2.

Table 7: Interest rates and the change in the propensity to repurchase stocks

	(1) dptrepo	(2) dptrepo_risk
lag_tbill	-0.116	-0.016
	(-0.86)	(-0.10)
nixon	0.025	0.038*
	(1.28)	(1.76)
Constant	0.013	0.007
	(1.56)	(0.69)
Adj. R-squared	-0.006	-0.006
Obs.	47	47

This table reports time-series regression coefficients with Newey-West t-statistics (two lags) in parentheses. The dependent variables in columns (1) and (2) are changes in the propensity to repurchase and in the risk-adjusted propenisty to repurchase, respectively. The key independent variable is the previous year average 3-month T-Bill rate. The Nixon dummy is equal to one for years 1972 to 1974 and is zero otherwise. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 8: Interest rates and the propensity to increase repurchases

	(1) ptincrepo	(2) ptincrepo_risk
lag_tbill	-1.296***	-1.189***
	(-3.76)	(-3.61)
nixon	-0.010	-0.003
	(-0.19)	(-0.06)
Constant	0.077***	0.076***
	(4.18)	(4.50)
ARMA		
L.ar	0.088	0.029
	(0.63)	(0.19)
Obs.	47	47

This table reports estimates of AR(1) models with z-statistics in parentheses. The dependent variables in columns (1) and (2) are the propensity to increase repurchases and the risk-adjusted propensity to increase repurchases, respectively. The key independent variable is the previous year average 3-month T-Bill rate. The Nixon dummy is equal to one for years 1972 to 1974 and is zero otherwise. * p<0.10, ** p<0.05, *** p<0.01.

Table 9: Interest rates and the propensity to initiate repurchases

	(1) ptinitirepo	(2) ptinitirepo_risk
lag_tbill	-0.502	-0.405
	(-1.62)	(-1.15)
nixon	-0.000	0.004
	(-0.00)	(0.18)
Constant	0.037**	0.034
	(2.07)	(1.64)
ARMA		
L.ar	0.457***	0.529***
	(3.29)	(4.05)
Obs.	47	47

This table reports estimates of AR(1) models with z-statistics in parentheses. The dependent variables in columns (1) and (2) are the propensity to initiate repurchases and the risk-adjusted propensity to initiate repurchases, respectively. The key independent variable is the previous year average 3-month T-Bill rate. The Nixon dummy is equal to one for years 1972 to 1974 and is zero otherwise. * p<0.10, ** p<0.05, *** p<0.01.

Appendix A

Table A1: Logit models explaining which firms increase dividends

	idio	sys	mb	at_g	e_at	nyp	Constant
(1)			-0.11	0.34	8.95	1.25	-1.24
			(-3.41)	(5.71)	(14.83)	(22.46)	(-16.44)
(2)	-31.8	-13.01	-0.08	0.37	8.14	0.89	-0.28
	(-11.61)	(-2.04)	(-2.77)	(6.83)	(13.18)	(15.48)	(-2.24)

This table reports Fama-MacBeth (1973) style estimates of a logit model with t-statistics in parentheses. One cross-sectional model is estimated per year. The dependent variable is equal to one for dividend-increasing firms and is zero otherwise. Independent variables are idiosyncratic risk, systematic risk, market-to-book ratio, asset growth, earnings to assets, and NYSE percentile to which a firms' market capitalization belongs. These variables are defined in Section 2.

Table A2: Logit models explaining which firms initiate dividends

	idio	sys	mb	at_g	e_at	nyp	Constant
(1)			-0.55	-0.56	9.08	1.82	-3.2
			(-7.43)	(-5.1)	(8.43)	(12.62)	(-32.17)
(2)	-37.3	-52.84	-0.5	-0.64	8.76	1.31	-1.64
	(-7.34)	(-5.27)	(-6.28)	(-5.01)	(7.36)	(6.67)	(-8.88)

This table reports Fama-MacBeth (1973) style estimates of a logit model with t-statistics in parentheses. One cross-sectional model is estimated per year. The dependent variable is equal to one for dividend-initiating firms and is zero otherwise. Independent variables are idiosyncratic risk, systematic risk, market-to-book ratio, asset growth, earnings to assets, and NYSE percentile to which a firms' market capitalization belongs. These variables are defined in Section 2.

Table A3: Logit models explaining which firms increase repurchases

	idio	sys	mb	at_g	e_at	nyp	Constant
(1)			-0.03	-0.41	2.27	0.52	-0.79
			(-0.96)	(-6.47)	(10.28)	(6.8)	(-15.47)
(2)	-11.28	2.24	-0	-0.42	1.85	0.29	-0.45
	(-8.44)	(0.5)	(-0.02)	(-6.42)	(8.93)	(4.07)	(-7.18)

This table reports Fama-MacBeth (1973) style estimates of a logit model with t-statistics in parentheses. One cross-sectional model is estimated per year. The dependent variable is equal to one for firms increasing repurhcases and is zero otherwise. Independent variables are idiosyncratic risk, systematic risk, market-to-book ratio, asset growth, earnings to assets, and NYSE percentile to which a firms' market capitalization belongs. These variables are defined in Section 2.

Table A4: Logit models explaining which firms initiate repurchases

	idio	sys	mb	at_g	e_at	nyp	Constant
(1)			-0.15	-0.22	1.76	0.45	-1.58
			(-6.49)	(-4.94)	(5.73)	(4.62)	(-36.53)
(2)	-13.32	7.79	-0.14	-0.22	1.43	0.06	-1.11
	(-8.31)	(2.47)	(-6.37)	(-4.74)	(4.49)	(0.88)	(-15.08)

This table reports Fama-MacBeth (1973) style estimates of a logit model with t-statistics in parentheses. One cross-sectional model is estimated per year. The dependent variable is equal to one for firms initiating repurchases and is zero otherwise. Independent variables are idiosyncratic risk, systematic risk, market-to-book ratio, asset growth, earnings to assets, and NYSE percentile to which a firms' market capitalization belongs. These variables are defined in Section 2.