

Article

On Walter's Model and Cash-Flow-Based Payout Ratio

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Abstract

We examine whether Walter's model holds in that firms with greater growth opportunities would pay out less, using operating cash-flow-based payout measures that include only dividends, only repurchases or both. Two groups of explanatory variables are considered. The first group consists of firm characteristics (including contemporaneous and lagged P/E ratios to control for dividend growth model prediction), and the second group comprises macroeconomic indicators reflecting economic conditions. Across Fixed effects (within) estimator with clustered standard errors, Random Forest, Lasso and Ridge methodologies, the cash-flow-based payout ratios consistently and significantly show contemporaneous association with growth opportunities, providing some support for Walter's model.

Keywords: dividends; payout; corporate payout policy; share repurchases; Walter's model; macro variables; firm variables; panel data; Fixed effects (within) estimator with clustered standard errors; Random Forest; Ridge regression; Lasso model

JEL Classification: G35; C23; C52; G32

1. Introduction

Corporate dividend payout policy can be viewed through several theoretical lenses, but the central framework guiding this study is Walter's model that tests the relationship between payouts and growth opportunities. Walter's Dividend Relevance Theory, proposed by [Walter \(1956\)](#) in a seminal paper is one of the earliest formal models asserting that dividend policy is relevant to firm value, directly contradicting the later [Miller and Modigliani \(1961\)](#) irrelevance propositions. That is Walter's model prediction is that dividend payouts and a firm's growth and investment opportunities are significantly and negatively correlated. We use cash-flow-based dividend payouts and repurchases to avoid accruals-based measures that may be subject to managerial manipulation. To do so, we control for alternative explanations, including managers adjusting dividends and repurchases to "cater" to prevailing investor demand for payout and signal confidence ([Baker & Wurgler, 2004](#); [Li & Lie, 2006](#); [Loughlin, 1997](#); [Aqel, 2016](#); [Penman, 2008](#)). Empirical evidence shows that dividend sentiment indices predict payout changes ([Kumar et al., 2022](#)). We control for a simple dividend-discount model explanation that directly links valuation ratios to payout policy. We also control for macro uncertainty, rates, and policy shocks that can also influence dividend payouts ([Attig et al., 2021](#); [Chay & Suh, 2009](#)).

Other firm characteristics can influence a firm's payout ratio. Profitability strengthens internal funding capacity, allowing firms to increase payout when investor demand is high. Liquidity can further shape payout flexibility: firms with greater cash reserves can more readily engage in repurchases, the most flexible form of payout. Conversely, high



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current ratios may reflect conservative liquidity management that could be the result of lower payouts even amid strong investor demand. Asset tangibility, financed through debt, can affect payout by constraining financial flexibility under debt covenants. Asset tangibility can also result from capex investments made via a conservative dividend policy. Macroeconomic conditions, including GDP growth, inflation, credit spreads, and stock-market performance, shape a firm's financial condition, a firm's obligation to payout, as well as investor sentiment, potentially amplifying or dampening payout behavior.

Building on these theoretical predictions, this study examines whether payout behavior among S&P 500 firms over the recent 25-year period from 2000 to 2024 is consistent with a value-creation explanation via growth opportunities. We analyze three measures of payout intensity: dividend-to-EBITDA ratio, shares repurchased-to-EBITDA ratio, and the dividend plus repurchases-to-EBITDA ratio to capture both stable and flexible forms of shareholder distribution, using Fixed effects (within) estimator with clustered standard errors, Random Forest, Lasso, and Ridge models.

While prior studies have examined the effects of profitability, investment opportunities, leverage, liquidity, and macroeconomic conditions on payout policy, less attention has been paid to how valuation measures interact with these traditional determinants. Moreover, existing studies often rely on a single empirical methodology, making it difficult to assess whether identified relationships remain robust across different modeling frameworks. This study therefore evaluates payout determinants using both traditional econometric techniques and modern machine-learning approaches, allowing for a broader assessment of the relative importance of firm-specific and macroeconomic factors.

This study contributes to the literature in three ways. First, it adopts EBITDA-scaled payout measures, removing the use of accruals-based measures such as NI that may be manipulated by managers. This also removes the mechanical correlation that may arise when both valuation-based explanatory variables and payout ratios share a common denominator. Second, it incorporates both firm-level and macroeconomic explanatory variables within a unified framework, allowing the relative importance of investment opportunities, liquidity, valuation concerns, and economic conditions to be evaluated simultaneously. Third, it compares findings across Fixed effects (within) estimator with clustered standard errors, Random Forest, Lasso, and Ridge models, across both traditional econometric and machine-learning methodologies.

The empirical analysis investigates whether payouts (at least from operating cash flows) are primarily associated with investment opportunities or with other valuation concerns, or with macroeconomic conditions. By comparing results across multiple methodologies, the study aims to identify the explanatory variables that remain consistently important across alternative model specifications.

While we do not claim causality, overall, our results provide some empirical support for Walter's model in that cash-flow-based payouts are significantly and negatively associated with a firm's growth opportunities, indicating that managers conserve cash with lower payouts for funding capex investments.

2. Data and Variables

The dataset comprises firms from the S&P 500 index over the 25-year period from 2000 to 2024. Firm-level data are obtained from the Annual Compustat database, while macroeconomic variables are taken from the Federal Reserve (FRED) database, Yahoo Finance, and University of Michigan. After data cleaning to remove duplicates and ensure consistency, the panel contains a total of 11,243 firm-year observations.

To construct the sample, we need to worry about survivorship bias (Bhattacharya et al., 2021; Cremers & Pareek, 2015). We use the historical S&P 500 membership indicator

(Compustat annual item SP500) which identifies firms included in the index in each fiscal year. A firm enters our sample in any year where SP500 membership indicator equals 1. For example, a firm that was in the S&P 500 from 2005 to 2010 but then was acquired or delisted contributes observations for those six years but drops out thereafter. This method follows standard practice in studies of S&P 500 payout policy (Floyd et al., 2015; Skinner, 2008; Fama & French, 2001).

We handle corporate events as follows. When a firm changes its ticker or CIK without a fundamental change in corporate identity, Compustat maintains a consistent GVKEY identifier, which we use throughout. For mergers and acquisitions, we follow the approach of Grullon et al. (2002) and treat the surviving entity as a continuation of the pre-merger firm; the acquired firm is considered to have exited the sample as of the merger date. For firms that are delisted due to bankruptcy or liquidation (CRSP delisting codes 500–599), we retain observations up to the year of delisting. For firms that are acquired in a stock-for-stock merger, the acquiring firm often retains the S&P 500 membership while the target exits; we do not artificially link the two firms' histories. Following standard panel data practices in corporate finance (Petersen, 2009), we do not require balanced panels; firms may enter and exit the sample multiple times if they move into or out of the S&P 500 index over the 25-year window.

This construction yields an unbalanced panel of 1247 unique firms with an average of 9 years of observations per firm.

2.1. Dependent Variables

Dividend payout is measured using three alternative measures.

Div/EBITDA (DVC, EBITDA for Compustat annual database): Dividends divided by EBITDA. Firms exhibiting high dividend ratios often operate in mature industries with stable cash flows but volatile accounting earnings. For instance, Targa Resources (TRGP) has periodically distributed dividends far exceeding reported net income due to strong operating cash flows. In 2024, Targa announced a 50% dividend increase supported by record cash generation and disciplined capital spending, reflecting management's strategy to return excess cash to shareholders while maintaining investment-grade leverage (SEC, 2024). Such cases illustrate that a high Div/EBITDA ratio may not necessarily indicate unsustainable payouts but rather differences between cash flow capacity and accounting earnings in capital-intensive sectors. In contrast, firms with low Div/EBITDA ratios often experience financial restructuring, earnings volatility, or balance-sheet repair. American International Group (AIG) provides a representative example, as it maintained modest dividends despite reporting negative net income during restructuring periods. AIG's dividend policy remained conservative while the firm prioritized deleveraging and operational restructuring following years of losses. This demonstrates that a low or negative Div/EBITDA ratio can reflect managerial prudence under financial distress, where capital preservation takes precedence over shareholder distributions.

Rep/EBITDA (PRSTKC, EBITDA from Compustat annual database): Share repurchases divided by EBITDA. A firm with an elevated repurchase ratio is Cisco Systems (ticker CSCO). In November 2007 the firm's board approved an additional US\$10 billion share-buyback authorization, bringing the total buyback capacity to about US\$62 billion (Reuters, 2007). At that time Cisco was generating strong operating cash flow, facing limited high-return internal investment opportunities in its mature networking business, and hence chose to channel excess cash into share repurchases rather than to redevelopment. In contrast, Allstate Corp. provides an example of very low or near-zero repurchase activity when earnings and capital demands shift. In October 2008 the company formally suspended its

share-repurchase program, citing the need to conserve cash amid mounting fixed-income investment losses and marketplace uncertainty.

(Div+Rep)/EBITDA (DVC, PRSTKC, EBITDA from Compustat annual database): The total payout ratio, computed as common dividends plus share repurchases divided by EBITDA. Firms with high combined payout ratio typically generate strong cash flows and operate in mature business segments, which encourages management to return a large share of earnings to shareholders. Cisco Systems (CSCO) is a representative example from the sample. In February 2019, Cisco simultaneously increased its quarterly dividend and expanded its share-repurchase authorization by an additional \$15 billion, explicitly signaling its intention to deploy substantial surplus cash through both dividends and buybacks rather than through large new investment projects ([Wall Street Journal, 2019](#)). A subsequent Wall Street Journal analysis noted that Cisco had spent roughly \$22.6 billion on buybacks over the prior four quarters—about one and a half times its free cash flow—which underscores how aggressively the firm has used repurchases alongside dividends to return capital to shareholders. By contrast, firms with low or near-zero combined payout ratios often face binding financial constraints or regulatory limits that restrict distributions to shareholders. Southwest Airlines (LUV) illustrates this pattern. During the COVID-19 pandemic, Southwest suspended its dividend and halted share repurchases as a condition of receiving federal aid, prioritizing liquidity and balance-sheet resilience over payouts. In December 2022, the company announced that it would resume a modest quarterly dividend after more than two years without payments, emphasizing that the restart reflected improved demand and cash-flow conditions following a period of severe stress ([Sider, 2022](#)).

In our sample, 1847 firm-year observations have negative net income. For these observations, the NI-scaled payout ratios would be negative or undefined, whereas EBITDA-scaled ratios remain interpretable. We retain these observations in all regressions, as excluding them would introduce survivorship bias. We winsorize all continuous variables at the 1st and 99th percentiles to mitigate the influence of outliers, following standard practice in the payout literature ([Fama & French, 2001](#); [Skinner, 2008](#)).

2.2. Explanatory Variables

2.2.1. Firm-Level Variables

Growth opportunities (CAPEX/AT): Growth opportunities are proxied using capital expenditures scaled by total assets (CAPEX/AT). This measure captures firms' actual investment intensity and future expansion activities. This measure is widely used in corporate finance as an indicator of investment opportunities, following the classic growth-opportunity framework in [Myers \(1977\)](#) and its application to payout behavior in [Fama and French \(2001\)](#). Growth opportunities also reflect a firm's stage in the life cycle and its relative need for retained earnings. Firms with limited growth prospects may have greater incentive to cater to investor demand for payout, particularly when market sentiment favors dividend-paying or repurchasing firms, while high-growth firms may prioritize internal reinvestment over responding to short-term shifts in investor preferences.

Liquidity (Compustat: CHE/AT): Liquidity is defined as the ratio of cash and cash equivalents to total assets, reflecting internal cash availability and short-term financial flexibility. Liquidity measures are standard in payout and financing research—[Opler et al. \(1999\)](#) and [Bates et al. \(2009\)](#) highlight their role in firms' cash policies and repurchase behavior. Within the catering and valuation frameworks, liquidity enhances managers' ability to adjust payout in response to shifts in investor demand, particularly through repurchases, the most flexible form of distribution. Firms with larger liquidity buffers can more readily increase payout when market sentiment favors cash distributions, while

limited liquidity may constrain their capacity to cater even when valuation pressures are high.

Price-to-earnings ratio (P/E): The P/E ratio is computed as fiscal-year-end stock price divided by earnings per share, providing a market-based valuation metric. P/E can play a central role in valuation and sentiment-based explanations of payout behavior. In the simple dividend-discount framework, higher P/E ratios reflect higher expected payout relative to required returns.

Last year P/E ratio: The last-year P/E ratio represents the firm's P/E in the previous fiscal year and is included to capture valuation persistence and the dynamic adjustment of payout behavior. Prior work such as [Li and Lie \(2006\)](#) uses lagged P/E to examine how changes in investor demand influence payout adjustments. In the “catering” framework, the lagged P/E ratio reflects past investor sentiment that shapes managerial expectations, following which managers may adjust dividends or repurchases upward in the current year to maintain alignment with persistent investor preferences.

Current ratio (Compustat: ACT/LCT): The current ratio is defined as current assets divided by current liabilities, measuring short-term solvency and working-capital flexibility. This variable is commonly used in studies of liquidity constraints and financial flexibility ([Kim et al., 1998](#)). It captures firms' capacity or reluctance to adjust payout in response to investor demand. Lower current ratios indicate tighter liquidity positions, which may prompt managers to rely more heavily on flexible payout tools such as repurchases when market sentiment favors distributions. Conversely, a high current ratio may signal conservative liquidity management, an unwillingness to increase payout even when valuation conditions or investor preferences suggest stronger catering incentives.

Tangibility (Compustat: PPENT/AT): Tangibility is measured as the ratio of net property, plant, and equipment to total assets, capturing asset intensity and collateral value. Tangibility is a standard proxy for collateral constraints and borrowing capacity, as emphasized in [Almeida and Campello \(2007\)](#).

2.2.2. Macroeconomic Variables

Macroeconomic variables are drawn from the Federal Reserve Economic Data (FRED) database, Yahoo Finance, and the Michigan investor sentiment index. These indicators capture broader economic and market conditions that influence firms' payout behavior through valuation channels and shifts in investor sentiment. Macroeconomic fluctuations can shape investors' demand for distributions, while valuation models imply that discount rates, growth expectations, and market conditions directly affect payout incentives.

Change in GDP (FRED: GDPC1): Change in GDP is measured as the year-over-year growth in real gross domestic product, capturing business-cycle expansions and contractions. Prior work shows that macroeconomic conditions shape payout decisions, particularly repurchases through their effects on earnings, investment opportunities, and market sentiment ([Floyd et al., 2015](#)). Stronger GDP growth is associated with improved investor optimism and higher equity valuations, increasing managers' incentives to cater by raising payout, especially through flexible distribution channels such as repurchases.

Change in CPI (FRED: CPIAUCSL): Change in CPI represents annual inflation pressure, which affect real earnings, discount rates, and financing costs. Inflation has been linked to dividend behavior in studies such as [Basse and Reddemann \(2011\)](#). Higher inflation can raise required returns and dampen valuation multiples.

Change in federal funds rate (FRED: FEDFUNDS): The change in the federal funds rate denotes annual shifts in short-term interest rates, reflecting monetary policy actions. Interest rates influence firms' financing conditions and borrowing costs, a mechanism highlighted by [Bernanke and Gertler \(1995\)](#). Rising rates may tighten financial constraints

and weaken firms' ability to increase payout. On the other hand, higher fixed-income rates may put pressure on firms to raise dividend payout rates.

Change in Moody's BAA rate (FRED: BAA): This variable captures movements in corporate bond yields and credit spreads. Credit-market tightness is central in capital-structure and payout research, including [Faulkender and Petersen \(2006\)](#). Wider spreads may signal heightened risk aversion. Thus, higher corporate bond rates can raise dividend rates.

Change in crude oil price (FRED: DCOILWTICO): Change in crude oil prices serves as a proxy for commodity inflation and production-cost shocks. [Kilian \(2008\)](#) shows that oil-price shocks have systematic effects on corporate activity. Rising commodity prices may constrain firms' cash availability and reduce their ability to increase payout.

Change in DJIA index (Yahoo Finance): Change in the Dow Jones Industrial Average is measured as the annual percentage change in the index, capturing broad stock-market performance. Market-wide conditions influence repurchase timing, as shown in [Dittmar \(2000\)](#) and [Chan et al. \(2004\)](#). Rising market conditions reflect stronger investor optimism and higher valuation multiples.

Change in sentiment index (University of Michigan): The sentiment index change reflects shifts in investor optimism or pessimism and can influence how firms cater to investor demand for payout.

Table 1 shows the descriptive statistics.

Table 1. Data description. This table reports the descriptive statistics for all variables used in the analysis, including payout measures, firm-level explanatory variables, and macroeconomic indicators. For each variable, the table shows the mean, median, standard deviation, minimum, and maximum.

Variables	Mean	Median	Standard Deviation	Minimum	Maximum
Div/EBITDA (dependent)	0.126	0.104	0.977	−85.853	14.737
Rep/EBITDA (dependent)	0.298	0.095	6.382	−33.982	670.500
(Div+Rep)/EBITDA (dependent)	0.424	0.276	6.480	−85.913	670.500
Growth opportunities (firm explanatory)	0.039	0.027	0.043	0.000	0.606
Liquidity (firm explanatory)	0.132	0.075	0.151	0.000	0.930
Price-to-earnings (P/E) ratio (firm explanatory)	25.879	19.561	208.126	−4084.333	7697.000
Current ratio (firm explanatory)	1.828	1.421	1.497	0.000	27.392
Tangibility (firm explanatory)	0.237	0.146	0.240	0.000	0.958
Change in GDP (macro variable)	0.020	0.023	0.019	−0.039	0.060
Change in CPI (macro variable)	0.025	0.021	0.016	0.000	0.072
Change in federal funds rate (macro variable)	1.127	0.106	4.284	−0.917	20.391
Change in Moody's BAA rate (macro variable)	0.005	−0.049	0.138	−0.176	0.495
Change in crude oil price (macro variable)	−0.305	0.550	2.526	−8.150	2.911
Change in DJIA index (macro variable)	0.963	0.739	2.065	−3.740	4.777
Change in sentiment index (macro variable)	−0.003	0.010	0.112	−0.204	0.206

The descriptive statistics reveal substantial variation across both payout measures and explanatory variables. Repurchases, on average, account for a larger share of net income than dividends, consistent with the broader shift toward flexible payout channels. The combined payout ratio shows a lower median than mean, indicating a right-skewed distribution driven by high-payout firms.

Among firm-level characteristics, growth opportunities (CAPEX/AT) remain relatively modest. Liquidity and current ratios indicate generally strong financial flexibility among

S&P 500 firms. Valuation measures, including the current and lagged P/E ratios, exhibit substantially higher means than medians, reflecting the presence of extreme valuation observations and right-skewed distributions. Tangibility varies considerably across firms, highlighting differences in asset structure and investment requirements.

GDP and CPI growth rates cluster around low positive values, federal funds rate average changes are also positive. Oil-price and DJIA changes show higher variability, consistent with their cyclical nature.

Figure 1 shows the pairwise correlations between the explanatory variables.

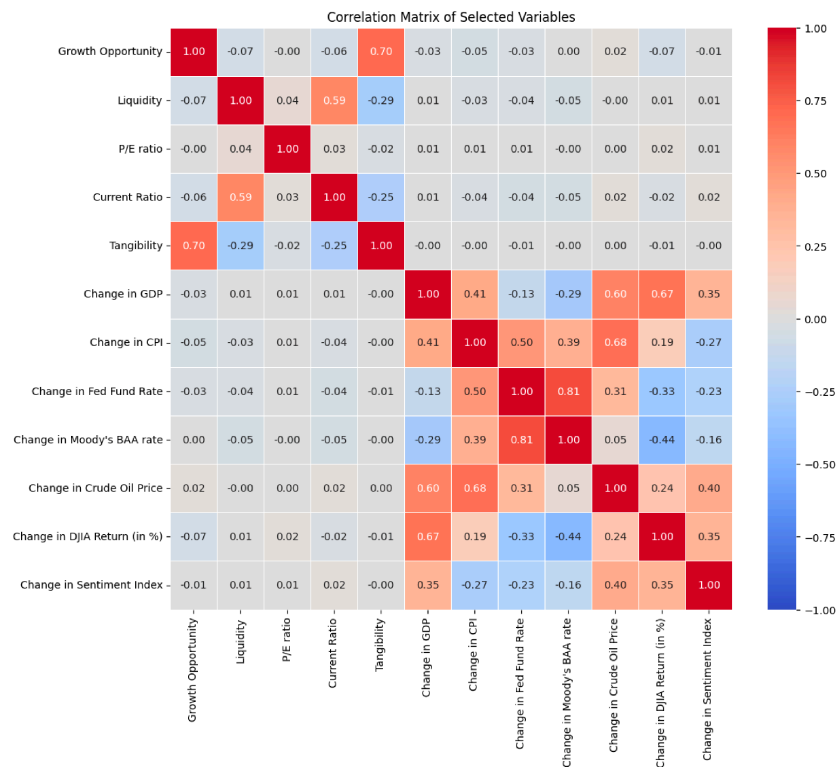


Figure 1. Pairwise correlation of explanatory variables. This table reports the pairwise Pearson correlation coefficients among the independent variables used in the analysis. The variables include: (1) growth opportunities, (2) liquidity, (3) price-to-earnings ratio, (4) current ratio, (5) tangibility, (6) change in GDP, (7) change in CPI, (8) change in the federal funds rate, (9) change in Moody's BAA rate, (10) change in crude oil price, (11) change in the DJIA index, and (12) change in the sentiment index. The correlations provide a preliminary assessment of the relationships between firm-level characteristics and macroeconomic conditions.

Overall, the pairwise correlations are generally moderate, suggesting that multicollinearity is unlikely to be a major concern. The strongest firm-level relationship is observed between tangibility and growth opportunities, reflecting the close connection between capital investment activity and asset tangibility. Liquidity and current ratio are also positively related, as both variables capture aspects of firms' short-term financial flexibility. The macroeconomic variables exhibit relatively low correlations with firm-level characteristics, indicating that they capture distinct economic channels affecting payout behavior.

Among macroeconomic variables, changes in crude oil prices (commodity prices) are positively correlated with CPI inflation, while changes in GDP growth show moderate positive correlations with equity market returns and oil price movements. Changes in interest-rate measures—the federal funds rate and Moody's BAA yield—are correlated with each other and display weaker or negative associations with equity returns.

Overall, the correlations may indicate that firm fundamentals and macroeconomic conditions capture distinct economic channels, supporting both of their inclusion in the regression framework.

2.3. Empirical Methodologies

We use Fixed effects (within) estimator with clustered standard errors (with firm and year fixed effects), Random Forest, Lasso and Ridge regression methodologies to examine the relationships between payout and the explanatory variables. We include year fixed effects in specifications in which macro variables are also not included. Fixed effects (within) estimator with clustered standard errors method is simple, interpretable, and can provide unbiased estimates under classical assumptions; however, it performs poorly with multicollinearity, nonlinearity, or high-dimensional data. Random Forest, a tree-based method, captures complex nonlinear relationships and interactions without strong parametric assumptions and is robust to overfitting, but it is less interpretable. Lasso regression introduces L1 regularization (a penalty based on the sum of the absolute values of the coefficients), enabling variable selection (shrink coefficients to zero) and reducing overfitting in high-dimensional settings, yet it can arbitrarily exclude predictors. Ridge regression uses L2 regularization (a penalty based on the sum of the squared values of the coefficients) to shrink coefficients and mitigate multicollinearity, providing stability when explanatory variables are highly correlated, but it does not perform variable selection and may retain irrelevant features.

3. Results

Clustered standard errors, which adjust for within-firm correlation of residuals in panel data, are not directly applicable to Random Forest, Lasso, or Ridge models. In tree-based methods like Random Forest, there is no parametric error structure from which to compute clustered standard errors. For Lasso and Ridge, while post-selection inference methods exist (e.g., Lee et al., 2016), they are computationally intensive and not standard in the machine-learning literature on payout associations. Moreover, the primary goal of these models is explanatory variable importance ranking rather than causal inference. Therefore, we follow the common practice in studies that combine traditional econometrics with machine learning (e.g., Mullainathan & Spiess, 2017). In the Fixed effects (within) estimator with clustered standard errors, we report firm-clustered standard errors.

3.1. Fixed Effects (Within) Estimator with Firm-Clustered Standard Errors Method

Table 2 Panel A reports Fixed effects (within) estimator with clustered standard errors regressions using firm-level determinants and the contemporaneous P/E ratio. Growth opportunities exhibit a significant negative association with dividend and total payout measures, suggesting that firms with greater investment activity retain more resources for future expansion.

Panel B reports the Fixed effects (within) estimator with clustered standard errors regression results when the current P/E ratio is replaced by its lagged value from the previous year, to capture pressure on management to cater. Growth opportunities exhibit a significant negative association with dividend and total payout measures.

Panel C presents the results using only macroeconomic variables. Federal funds rate and Moody's BAA yield are significant, suggesting that credit-market rates play an important role in payout decisions, perhaps to ensure stockholders also get comparable returns.

Table 2. Fixed effects (within) estimator with firm-clustered standard errors method. Panel A, B, C, D and E respectively report ordinary least squares (OLS) regression estimates examining the relationship between the 3 alternative measures of payout, Div/EBITDA, Rep/EBITDA, and (Div+Rep)/EBITDA, and (A) Firm-level determinants only, in which year fixed effects are included, (B) lagged P/E and other firm-level determinants only in which year fixed effects are included, (C) macro variables only, (D) both firm and macro variables, and (E) lagged P/E and other contemporaneous firm variables together with macroeconomic variables. Coefficients are reported. Statistical significance is indicated using standard significance levels. Clustered standard error is included in parentheses. Firm and year fixed effects (in specifications in which macro variables are not included) are included.

Panel A			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.5559 *** (0.1138)	−1.9297 (1.4654)	−2.4856 * (1.4850)
Liquidity	−0.0010 (0.0515)	−1.7606 (1.8379)	−1.7616 (1.8378)
P/E Ratio	−0.0000 (0.0000)	−0.0008 (0.0007)	−0.0008 (0.0007)
Current Ratio	−0.0039 (0.0042)	−0.0039 (0.0235)	−0.0078 (0.0244)
Tangibility	−0.0593 (0.0542)	0.0634 (0.1654)	0.0042 (0.1780)
Panel B			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.5449 *** (0.1253)	−2.0351 (1.6460)	−2.5800 (1.6681)
Liquidity	−0.0021 (0.0552)	−1.9441 (1.9667)	−1.9462 (1.9674)
Last year P/E Ratio	−0.0000 (0.0000)	−0.0008 (0.0009)	−0.0008 (0.0009)
Current Ratio	−0.0043 (0.0045)	0.0035 (0.0266)	−0.0008 (0.0274)
Tangibility	−0.0391 (0.0574)	0.1060 (0.1958)	0.0669 (0.2050)
Panel C			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div.+Rep)/EBITDA
Change in GDP	−1.0197 (0.8102)	1.0297 (1.2105)	0.0100 (1.7506)
Change in CPI	−0.7864 (1.0864)	0.7221 (2.2833)	−0.0643 (2.9736)
Change in Federal Funds Rate	0.0331 ** (0.0155)	0.0202 *** (0.0071)	0.0534 *** (0.0171)
Change in Moody's BAA Rate	0.0789 (0.0595)	0.5380 *** (0.1080)	0.6169 *** (0.1364)
Change in Crude Oil Price	−0.0040 (0.0051)	−0.0081 (0.0093)	−0.0120 (0.0119)
Change in DJIA Index (in %)	0.0200 ** (0.0095)	0.0098 ** (0.0039)	0.0298 *** (0.0105)
Change in Sentiment Index	0.0453 (0.0639)	−0.3638 *** (0.1084)	−0.3186 ** (0.1465)

Table 2. Cont.

Panel D			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.2563 ** (0.1274)	−0.6285 ** (0.2742)	−0.8848 *** (0.3306)
Liquidity	0.0186 (0.0574)	−0.1344 (0.1368)	−0.1158 (0.1514)
P/E Ratio	−0.0000 (0.0000)	−0.0001 (0.0001)	−0.0001 (0.0001)
Current Ratio	0.0004 (0.0046)	−0.0069 (0.0104)	−0.0065 (0.0125)
Tangibility	−0.0985 (0.0624)	0.0624 (0.1181)	−0.0361 (0.1309)
Change in GDP	−0.7017 * (0.3582)	2.2628 *** (0.6250)	1.5612 ** (0.7485)
Change in CPI	−0.9582 (0.6055)	2.1251 (1.6557)	1.1669 (1.7897)
Change in Federal Funds Rate	0.0203 *** (0.0041)	0.0188 ** (0.0084)	0.0391 *** (0.0090)
Change in Moody's BAA Rate	0.0728 (0.0490)	0.5840 *** (0.1083)	0.6568 *** (0.1229)
Change in Crude Oil Price	0.0001 (0.0031)	−0.0139 * (0.0083)	−0.0138 (0.0090)
Change in DJIA Index (in %)	0.0134 *** (0.0025)	0.0081 * (0.0042)	0.0215 *** (0.0049)
Change in Sentiment Index	0.0367 (0.0521)	−0.3833 *** (0.0680)	−0.3466 *** (0.0886)
Panel E			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.2472 * (0.1287)	−0.6338 ** (0.2755)	−0.8810 *** (0.3327)
Liquidity	0.0131 (0.0571)	−0.1454 (0.1418)	−0.1323 (0.1564)
Last year P/E Ratio	0.0000 (0.0000)	−0.0001 (0.0001)	−0.0001 (0.0001)
Current Ratio	0.0002 (0.0045)	−0.0064 (0.0104)	−0.0062 (0.0125)
Tangibility	−0.0860 (0.0618)	0.0610 (0.1177)	−0.0250 (0.1304)
Change in GDP	−0.6803 * (0.3567)	2.3190 *** (0.6131)	1.6387 ** (0.7347)
Change in CPI	−0.8843 (0.6107)	2.2131 (1.7007)	1.3288 (1.8381)
Change in Federal Funds Rate	0.0191 *** (0.0040)	0.0186 ** (0.0086)	0.0377 *** (0.0090)
Change in Moody's BAA Rate	0.0734 (0.0487)	0.6065 *** (0.1065)	0.6799 *** (0.1206)

Table 2. Cont.

Change in Crude Oil Price	−0.0003 (0.0031)	−0.0145 * (0.0087)	−0.0148 (0.0094)
Change in DJIA Index (in %)	0.0131 *** (0.0024)	0.0080 * (0.0042)	0.0211 *** (0.0049)
Change in Sentiment Index	0.0413 (0.0519)	−0.3828 *** (0.0681)	−0.3416 *** (0.0889)

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Panels D and E incorporate both firm-level and macroeconomic variables. Growth opportunities remain negatively associated with payout, consistent with firms retaining cash to finance investment opportunities. Changes in the federal funds rate and Moody's BAA yield are consistently significant. These findings suggest that investment opportunities and interest rates have more explanatory power over cash flow payouts than contemporaneous or lagged valuation measures.

3.2. Random Forest

Table 3 Panel A reports Random Forest variable importance rankings using firm-level determinants that includes the contemporaneous P/E ratio. Growth opportunities and liquidity show the highest Mean Decrease in Impurity (MDI) values across all payout measures, indicating that investment activity and cash reserves have the most significant associations with EBITDA-scaled payouts. The P/E ratio exhibits low importance.

Table 3. Random Forest. Panels A, B, C, D and E respectively report regression estimates examining the relationship between the 3 alternative measures of payout, Div/EBITDA, Rep/EBITDA, and (Div+Rep)/EBITDA, and (A) firm-level determinants only, (B) lagged P/E and other firm-level determinants only, (C) macro variables only, (D) both firm and macro variables, and (E) lagged P/E and other contemporaneous firm variables together with macroeconomic variables. The regressions include two key metrics: Mean Decrease in Impurity (MDI), which captures how much each variable reduces prediction error within the trees, and Permutation Importance, which evaluates the drop in predictive accuracy when the values of a variable are randomly shuffled.

Panel A						
Variable	Dividend/EBITDA		Repurchase/EBITDA		(Div+Rep)/EBITDA	
	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance
Growth Opportunities	0.2646	0.0273	0.1529	0.0018	0.1852	0.0117
Liquidity	0.3008	0.0257	0.3220	0.3554	0.3115	0.2265
P/E Ratio	0.0571	0.0044	0.0637	−0.0151	0.0713	−0.0050
Current Ratio	0.1746	0.0169	0.1653	0.3993	0.1416	0.2499
Tangibility	0.2029	0.0259	0.2960	0.0372	0.2904	0.0253
Panel B						
Variable	Dividend/EBITDA		Repurchase/EBITDA		(Div+Rep)/EBITDA	
	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance
Growth Opportunities	0.2715	0.0337	0.1588	0.0198	0.1945	0.0250
Liquidity	0.2830	0.0348	0.3173	0.0280	0.2840	0.0279
Last year P/E Ratio	0.0744	0.0112	0.0642	0.0095	0.0801	0.0071
Current Ratio	0.1620	0.0180	0.1567	0.0273	0.1756	0.0297
Tangibility	0.2092	0.0265	0.3030	0.0281	0.2659	0.0303

Table 3. Cont.

Panel C						
Variable	Dividend/EBITDA		Repurchase/EBITDA		(Div+Rep)/EBITDA	
	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance
Change in GDP	0.1510	0.0007	0.1430	0.0001	0.1494	0.0009
Change in CPI	0.1233	0.0010	0.1481	0.0002	0.1382	0.0017
Change in Federal Funds Rate	0.1657	0.0017	0.1405	0.0011	0.1489	0.0026
Change in Moody's BAA Rate	0.1340	0.0008	0.1523	0.0006	0.1444	0.0017
Change in Crude Oil Price	0.1053	0.0012	0.1409	0.0002	0.1199	0.0017
Change in DJIA Index (in %)	0.2100	0.0013	0.1169	0.0006	0.1714	0.0020
Change in Sentiment Index	0.1106	0.0012	0.1583	0.0007	0.1278	0.0015
Panel D						
Variable	Dividend/EBITDA		Repurchase/EBITDA		(Div+Rep)/EBITDA	
	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance
Growth Opportunities	0.1456	0.0211	0.0830	0.0171	0.1037	0.0189
Liquidity	0.1667	0.0261	0.2139	0.0437	0.1820	0.0377
P/E Ratio	0.0410	0.0024	0.0582	0.0067	0.0511	0.0064
Current Ratio	0.0904	0.0095	0.0660	0.0084	0.0647	0.0073
Tangibility	0.1284	0.0165	0.1862	0.0374	0.1614	0.0330
Change in GDP	0.0538	0.0101	0.0492	0.0095	0.0620	0.0105
Change in CPI	0.0609	0.0099	0.0522	0.0079	0.0587	0.0090
Change in Federal Funds Rate	0.0719	0.0116	0.0674	0.0094	0.0751	0.0129
Change in Moody's BAA Rate	0.0476	0.0097	0.0620	0.0079	0.0640	0.0085
Change in Crude Oil Price	0.0535	0.0071	0.0560	0.0152	0.0654	0.0158
Change in DJIA Index (in %)	0.0827	0.0264	0.0422	0.0042	0.0534	0.0073
Change in Sentiment Index	0.0576	0.0086	0.0638	0.0103	0.0585	0.0097
Panel E						
Variable	Dividend/EBITDA		Repurchase/EBITDA		(Div+Rep)/EBITDA	
	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance	MDI Importance	Permutation Importance
Growth Opportunities	0.1269	0.0198	0.0845	0.0163	0.1054	0.0202
Liquidity	0.1655	0.0323	0.2035	0.0667	0.1779	0.0554
Last year P/E Ratio	0.0562	0.0043	0.0435	0.0018	0.0503	0.0032
Current Ratio	0.0958	0.0127	0.0654	0.0148	0.0658	0.0161
Tangibility	0.1395	0.0175	0.1954	0.0502	0.1641	0.0405
Change in GDP	0.0542	0.0095	0.0530	0.0103	0.0571	0.0112
Change in CPI	0.0577	0.0125	0.0570	0.0082	0.0615	0.0112
Change in Federal Funds Rate	0.0656	0.0119	0.0647	0.0218	0.0723	0.0284
Change in Moody's BAA Rate	0.0500	0.0083	0.0646	0.0265	0.0644	0.0254
Change in Crude Oil Price	0.0554	0.0100	0.0636	0.0126	0.0681	0.0159
Change in DJIA Index (in %)	0.0835	0.0118	0.0467	0.0113	0.0537	0.0148
Change in Sentiment Index	0.0497	0.0079	0.0581	0.0110	0.0594	0.0124

Panel B replaces the current P/E ratio with its lagged value. Growth opportunities and asset tangibility have the most significant associations with EBITDA-scaled payouts, while the lagged P/E ratio shows low importance, consistent with the Fixed effects (within) estimator with clustered standard errors method findings.

Panel C presents Random Forest results using only macroeconomic variables. Change in DJIA index and change in federal funds rate rank as the most important macroeconomic predictors, suggesting that stock-market performance and interest rates are the primary economic channels affecting payout behavior.

Panels D and E incorporate both firm-level and macroeconomic variables. Growth opportunities, liquidity, and tangibility remain among the top predictors. Among macroeconomic variables, change in federal funds rate and change in DJIA index show the highest importance, though their MDI values are lower than those of firm-level characteristics. This

suggests that payout policy is primarily driven by firm-specific factors, with macroeconomic conditions playing a secondary role.

3.3. Lasso Model

Table 4 presents the Lasso regression results. By shrinking less informative coefficients toward zero, Lasso identifies the variables that contribute most strongly to payout decisions.

Table 4. The Lasso model. Panels A, B, C, D and E respectively report regression estimates examining the relationship between the 3 alternative measures of payout, Div/EBITDA, Rep/EBITDA, and (Div+Rep)/EBITDA, and (A) firm-level determinants only, (B) lagged P/E and other firm-level determinants only, (C) macro variables only, (D) both firm and macro variables, and (E) lagged P/E and other contemporaneous firm variables together with macroeconomic variables. The regressions include the key explanatory variables shown in the table, and coefficients are reported.

Panel A			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.413	0.0000	0.0000
Liquidity	−0.0906	0.0000	0.0000
P/E Ratio	0.0000	0.0000	0.0000
Current Ratio	−0.0053	0.0000	0.0000
Tangibility	0.0325	0.0000	0.0000
Panel B			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.0915	0.0000	0.0000
Liquidity	−0.0827	0.0000	0.0000
Last year P/E Ratio	0.0000	0.0000	0.0000
Current Ratio	−0.0066	0.0000	0.0000
Tangibility	0.0000	0.0000	0.0000
Panel C			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Change in GDP	0.0000	0.0000	0.0000
Change in CPI	0.0000	0.0000	0.0000
Change in Federal Funds Rate	0.0263	0.0288	0.0556
Change in Moody's BAA Rate	0.0000	0.4218	0.5735
Change in Crude Oil Price	−0.0071	−0.0038	−0.0124
Change in DJIA Index (in %)	0.0139	0.0100	0.0276
Change in Sentiment Index	0.0000	−0.2950	−0.2719
Panel D			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.5021	0.0000	0.0000
Liquidity	−0.0711	0.3718	0.2531
P/E Ratio	0.0000	−0.0001	−0.0001
Current Ratio	−0.0033	−0.0301	−0.0320
Tangibility	0.0474	−0.2884	−0.3016
Change in GDP	0.0000	0.0000	0.0000
Change in CPI	0.0000	0.0000	0.0000
Change in Federal Funds Rate	0.0148	0.0378	0.0547
Change in Moody's BAA Rate	0.0744	0.0000	0.0000
Change in Crude Oil Price	−0.0026	−0.0041	−0.0072
Change in DJIA Index (in %)	0.0097	−0.0015	0.0054
Change in Sentiment Index	0.0003	−0.0382	0.0000

Table 4. *Cont.*

Panel E			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	0.0000	0.0000	0.0000
Liquidity	−0.0445	0.4633	0.3064
Last year P/E Ratio	0.0000	0.0000	0.0000
Current Ratio	−0.0061	−0.0370	−0.0365
Tangibility	0.0000	−0.3012	−0.3074
Change in GDP	0.0000	0.0000	0.0000
Change in CPI	0.0000	0.0000	0.0000
Change in Federal Funds Rate	0.0130	0.0346	0.0511
Change in Moody's BAA Rate	0.0000	0.3005	0.2002
Change in Crude Oil Price	−0.0023	−0.0026	−0.0070
Change in DJIA Index (in %)	0.0082	0.0085	0.0114
Change in Sentiment Index	0.0000	−0.2549	−0.0850

Panel A uses firm-level determinants with the contemporaneous P/E ratio. Growth opportunities and liquidity have significant and negative associations with dividend payouts. Panel B replaces the current P/E ratio with its lagged value. Growth opportunities and liquidity remain significant for payout, while the lagged P/E ratio shrank to zero, confirming that past valuation does not significantly correlate with current EBITDA-scaled payouts.

Panel C uses only macroeconomic variables. Change in federal funds rate and change in Moody's BAA yield are retained with positive coefficients, suggesting that higher interest rates are associated with increased payouts.

Panels D and E incorporate both firm-level and macroeconomic variables. Growth opportunities remain significantly negatively associated with dividend and total payouts. Liquidity shows a positive association with repurchases but a negative association with dividends, indicating substitution between payout forms. Changes in federal funds rate and Moody's BAA yield are consistently retained. The P/E ratio and lagged P/E ratio are shrunk to zero across all specifications.

An important advantage of the Lasso framework is its ability to perform variable selection while reducing overfitting. The variables retained by the model largely overlap with those identified in the Fixed effects (within) estimator with clustered standard errors and Random Forest analyses, providing additional evidence that growth opportunities, liquidity, and interest rates are robust determinants of corporate payout policy. The consistency across methodologies increases confidence in the robustness of these findings.

3.4. Ridge Regression

Table 5 reports the Ridge regression estimates. Unlike Lasso, Ridge retains all explanatory variables while shrinking coefficient magnitudes to mitigate multicollinearity.

Panel A uses firm-level determinants with the contemporaneous P/E ratio. Growth opportunities exhibit a significant negative association with dividend and total payout measures. Liquidity and tangibility are also significant. The P/E ratio is insignificant and close to zero. Panel B replaces the current P/E ratio with its lagged value. Growth opportunities remain negatively significant, while the lagged P/E ratio is insignificant, corroborating the Fixed effects (within) estimator with clustered standard errors method and Lasso method findings. Panel C uses only macroeconomic variables. Change in federal funds rate, change in Moody's BAA yield, and change in DJIA index are significantly positive.

Table 5. Ridge regression. Panels A, B, C, D and E respectively report regression estimates examining the relationship between the 3 alternative measures of payout, Div/EBITDA, Rep/EBITDA, and (Div+Rep)/EBITDA, and (A) firm-level determinants only, (B) lagged P/E and other firm-level determinants only, (C) macro variables only, (D) both firm and macro variables, and (E) lagged P/E and other contemporaneous firm variables together with macroeconomic variables. The regressions include the key explanatory variables shown in the table, and coefficients are reported.

Panel A			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.8507	−0.4684	−0.8887
Liquidity	−0.0998	1.2732	1.1673
P/E Ratio	0.0000	−0.0002	−0.0002
Current Ratio	−0.0033	−0.1297	−0.1341
Tangibility	0.0924	−0.4779	−0.4400
Panel B			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.8581	−0.4452	−0.8498
Liquidity	−0.1055	1.3040	1.1930
Last year P/E Ratio	0.0000	−0.0002	−0.0002
Current Ratio	−0.0029	−0.1356	−0.1397
Tangibility	0.0950	−0.4878	−0.4496
Panel C			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Change in GDP	−0.4864	0.4055	−0.0532
Change in CPI	−0.2345	0.1916	−0.0058
Change in Federal Funds Rate	0.0298	0.0258	0.0575
Change in Moody's BAA Rate	0.1210	0.4832	0.4973
Change in Crude Oil Price	−0.0066	−0.0054	−0.0122
Change in DJIA Index (in %)	0.0186	0.0105	0.0256
Change in Sentiment Index	0.0321	−0.3274	−0.2569
Panel D			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.7776	−0.0998	−0.8960
Liquidity	−0.0743	0.4650	0.4260
P/E Ratio	0.0000	−0.0001	−0.0001
Current Ratio	−0.0021	−0.0368	−0.0411
Tangibility	0.0869	−0.2929	−0.2050
Change in GDP	−0.5550	0.1052	0.6015
Change in CPI	−0.6797	0.0534	0.1686
Change in Federal Funds Rate	0.0181	0.0343	0.0440
Change in Moody's BAA Rate	0.0865	0.3090	0.5685
Change in Crude Oil Price	0.0003	−0.0030	−0.0076
Change in DJIA Index (in %)	0.0113	0.0086	0.0211
Change in Sentiment Index	0.0331	−0.2695	−0.3093
Panel E			
Variable	Dividend/EBITDA	Repurchase/EBITDA	(Div+Rep)/EBITDA
Growth Opportunities	−0.7693	−0.0994	−0.8875
Liquidity	−0.0750	0.4571	0.4169
Last year P/E Ratio	0.0000	0.0000	0.0000
Current Ratio	−0.0023	−0.0366	−0.0410
Tangibility	0.0873	−0.2916	−0.2034
Change in GDP	−0.5317	0.1063	0.6261
Change in CPI	−0.6447	0.0556	0.1981
Change in Federal Funds Rate	0.0165	0.0344	0.0423
Change in Moody's BAA Rate	0.0831	0.3216	0.5813
Change in Crude Oil Price	0.0002	−0.0030	−0.0077
Change in DJIA Index (in %)	0.0105	0.0088	0.0206
Change in Sentiment Index	0.0404	−0.2722	−0.3059

Panels D and E incorporate both firm-level and macroeconomic variables. Growth opportunities remain negatively associated with dividend and total payouts. Liquidity is positively associated with repurchases but negatively associated with dividends. Changes in federal funds rate and Moody's BAA yield are consistently positive and significant. The P/E ratio and lagged P/E ratio remain insignificant across all specifications.

The Ridge results confirm the patterns observed in the Fixed effects (within) estimator with clustered standard errors, Random Forest, and Lasso analyses. The results show that growth opportunities, and interest rates are the consistent determinants of EBITDA-scaled payout measures, while valuation ratios (P/E and lagged P/E) have no significant explanatory power.

The similarity of findings across traditional econometric and machine-learning approaches suggests that these determinants are not driven by model-specific assumptions and therefore represent robust drivers of corporate payout behavior.

4. Conclusions and Discussion

Overall, the univariate tests and the four multivariate approaches—Fixed effects (within) estimator with clustered standard errors, Random Forest, Lasso, and Ridge—indicate that corporate payout decisions are influenced by a combination of firm-specific characteristics and selected macroeconomic conditions. Across methodologies, we find that rather than being driven by contemporaneous valuation measures (captured in our model by the P/E ratio) or by the implications of the catering theory (captured in our model by lagged P/E ratio), corporate payout decisions appear to reflect the need to conserve cash to fund investment growth opportunities, as indicated by Walter's model.

This study examines the determinants of corporate payout policy using EBITDA-scaled payout measures (dividends, repurchases, and total payout) over the 25-year period from 2000 to 2024 for S&P 500 firms. Across four complementary methodologies—Fixed effects (within) estimator with clustered standard errors, Random Forest, Lasso, and Ridge—we find some support for Walter's (1956) model, without claiming causality. Firms with greater growth opportunities (proxied by CAPEX/AT) are associated with significantly lower payout ratios. This negative association holds across all three payout measures (particularly for dividends and dividends plus repurchases) and remains robust to the inclusion of macroeconomic controls, firm fixed effects, and year fixed effects.

Among other firm-level characteristics, liquidity (CHE/AT) and asset tangibility (PPENT/AT) also emerge as important determinants. The Lasso and Ridge results consistently show that liquidity is positively associated with repurchases but negatively associated with dividends indicating that firms with greater cash reserves substitute between payout forms—using more flexible buybacks rather than committing to higher dividends. Tangibility is also positively associated with dividends.

Macroeconomic conditions play a secondary but non-negligible role. Across all four methodologies, changes in the federal funds rate and Moody's BAA yield are consistently positively associated with payout intensity. One possible interpretation is that managers adjust payouts to provide shareholders with returns comparable to prevailing fixed-income yields, though this mechanism warrants further investigation. Change in DJIA index is also positively associated with payouts in most specifications.

Our findings contribute to the payout literature in three ways. First, by using EBITDA-scaled measures, we avoid the mechanical correlation that arises when both payout and valuation ratios share net income as a common denominator, and we also avoid the use of accruals-based measures that may be subject to managerial manipulation. Second, by employing multiple methodologies (Fixed effects (within) estimator with clustered standard errors, Random Forest, Lasso, and Ridge), we assess the robustness of our conclusions

across both linear and nonlinear frameworks, as well as across traditional econometric and machine-learning approaches. Third, we provide direct empirical evidence for Walter's (1956) model using a large sample of S&P 500 firms over a 25-year period that includes major economic episodes such as the global financial crisis, the COVID-19 pandemic, and the recent inflationary period.

This study's limitations should be acknowledged. First, our sample is restricted to S&P 500 firms, which tend to be larger and more mature than the average U.S. public firm. Second, while our use of EBITDA mitigates mechanical correlation concerns and EBITDA-scaled ratios remain interpretable for firms with negative net income (16.4% of our sample), we do not address causality. Future research could explore instrumental variable approaches or natural experiments to establish causality. Third, the positive association between interest rates and payouts, while robust across methodologies, requires further theoretical development to explain the underlying mechanism, for example, whether firms pass through higher required returns to shareholders or respond to changes in the opportunity cost of holding cash. Fourth, our growth opportunities proxy (CAPEX/AT) captures realized investment rather than expected future growth; alternative measures such as R&D intensity could provide additional insights.

Overall, our results indicate that corporate payout decisions are primarily associated with investment opportunities and financial flexibility, rather than with contemporaneous or lagged valuation measures. Rather than being driven by the implications of the catering theory (captured by the lagged P/E ratio) or the simple dividend-discount model (captured by the contemporaneous P/E ratio), corporate payout decisions appear to reflect the need to conserve cash to fund investment growth opportunities, as indicated by Walter's (1956) model.

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