Corporate Payout Policies during Crisis: The Evolving Role of Dividends and Share Repurchases in the U.S.

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Abstract

Title: Corporate Payout Policies during Crisis: The Evolving Role of Dividends and Share Repurchases in the U.S.

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This study seeks to investigate the evolution of corporate payout policies, focusing on dividends and share repurchases, as well as their dynamic interplay during periods of economic stability and crisis. Using data from U.S. firms over the period from 2000 to 2023, the analysis examines how macroeconomic conditions and firm-specific characteristics influence corporate payout decisions. The study focuses on three key objectives: understanding the relative stability of dividends compared to share repurchases during recessions, analyzing the determinants of dividend forecast error, and exploring how share repurchases affect forecast variability. The results show that firms prioritize dividends over share repurchases during economic downturns, highlighting their signaling role. In contrast, share repurchases, though offering flexibility, contribute to greater forecasts. Larger firms and those with stable earnings are shown to exhibit lower forecast errors, whereas higher earnings volatility and free cash flow introduce greater variability. These findings build on the substitution hypothesis proposed by Michaely and Grullon (2002) and emphasize the complementary roles of dividends and buybacks in balancing stability and flexibility. The study provides valuable insights for managers seeking to optimize payout strategies, investors interpreting financial signals, and policymakers assessing the broader economic implications of corporate payout practices. By advancing the understanding of how firms respond to financial challenges, the analysis provides a modern perspective on corporate financial strategies in uncertain economic conditions.

Keywords: Dividends, Share Repurchases, Recessions

Resumo

Título: Corporate Payout Policies during Crisis: O Papel Evolutivo dos Dividendos e das Recompras de Acções nos EUA

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Este estudo busca investigar a evolução das políticas de distribuição corporativa, com foco em dividendos e recompra de ações, bem como sua interação dinâmica durante períodos de estabilidade econômica e crise. Utilizando dados de empresas dos Estados Unidos no período de 2000 a 2023, a análise examina como as condições macroeconômicas e as características específicas das empresas influenciam as decisões de distribuição. O estudo aborda três objetivos principais: compreender a estabilidade relativa dos dividendos em comparação com as recompras durante recessões, analisar os determinantes do erro de previsão de dividendos e explorar como as recompras de ações afetam a variabilidade das previsões. Os resultados mostram que as empresas priorizam dividendos sobre recompra de ações em momentos de crise econômica, destacando seu papel como sinalizador. Em contrapartida, as recompras, embora ofereçam flexibilidade, aumentam a variabilidade das previsões. Empresas maiores e com lucros estáveis apresentam menores erros de previsão, enquanto maior volatilidade nos lucros e fluxo de caixa livre introduzem maior variabilidade. Esses achados fortalecem a hipótese de substituição proposta por Michaely e Grullon (2002) e enfatizam os papéis complementares de dividendos e recompras na busca pelo equilíbrio entre estabilidade e flexibilidade. O estudo oferece insights valiosos para gestores que buscam otimizar estratégias de distribuição, investidores que interpretam sinais financeiros e formuladores de políticas que avaliam implicações econômicas. Ao aprofundar o entendimento sobre como as empresas respondem a desafios financeiros, a análise fornece uma perspectiva moderna sobre estratégias financeiras corporativas em condições econômicas incertas.

Palavras-chave: Dividendos, Recompras de acções, Recessões

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1. Introduction

Corporate payout policies, including dividends and share repurchases, have evolved significantly over time, reflecting broader changes in financial markets, the regulatory environment, and investor preferences. Historically, dividends were the primary means of returning cash to shareholders, dating back to the 17th century when joint-stock companies, such as the East India Company, began distributing profits to investors. At that time, regular dividend payments were essential to attract and retain investor trust in a period when financial markets were still developing. For centuries, dividends symbolized corporate stability and profitability, with firms using them as a key signal of financial health and a commitment to shareholder value. The importance of dividends was formalized in early financial theories, such as the theory of John Lintner in 1956, who demonstrated that firms prefer gradual and stable changes to dividend policies to avoid sending negative signals to the market. In this way, dividends became closely associated with mature, established companies seeking to maintain long-term investor confidence.

The emergence of share repurchases as a complementary payout method is a more recent phenomenon. Although share repurchases can be traced back to the early 20th century, their widespread use began in the 1980s following regulatory changes, particularly the introduction of SEC Rule 10b-18 in 1982. This rule provided regulatory clarity by establishing clear guidelines under which repurchases would not be considered market manipulation. Key provisions included limits on the timing, price and volume of repurchases and a requirement to use a single broker per day. By reducing legal uncertainty, Rule 10b-18 made buybacks a more attractive and flexible option for companies, allowing them to return capital to shareholders without committing to long-term dividend obligations. Unlike dividends, repurchases offer flexibility, allowing companies to adjust cash distributions in response to financial conditions without the same market penalties associated with dividend cuts. Buybacks gained further prominence in the 1990s and 2000s as firms sought to counter the dilutive effects of equity-based compensation and capitalize on the tax advantages associated with capital gains over dividend income. Today, buybacks frequently exceed dividends as the preferred payout mechanism for many firms, particularly in the U.S., reflecting their adaptability to changing corporate needs and market conditions.

The rise of repurchases relative to dividends marks a significant shift in corporate payout strategies. While dividends were historically seen as the dominant form of shareholder returns,

regulatory changes, tax advantages, and evolving investor preferences have contributed to the growing use of share buybacks. This transition is particularly evident in the United States, where repurchases now frequently outpace dividends as the preferred method of capital distribution. Despite these trends, the two mechanisms are not interchangeable, since each serves distinct purposes and appeals to different investor expectations. Periods of economic crisis, such as the global financial crisis of 2008–2009 and the COVID-19 pandemic, test the resilience and adaptability of corporate payout policies. During these times, firms face heightened financial uncertainty, reduced earnings, and increased pressure to preserve liquidity. These conditions force firms to reconsider their payout strategies, balancing the stability expected by dividend-receiving investors against the flexibility offered by share repurchases. Crises also highlight the broader economic implications of payout decisions, as they impact investor confidence, capital allocation, and market stability. However, empirical research on how firms navigate these challenges remains limited, particularly regarding the accuracy of dividend forecasting and the interplay between firm-specific factors and macroeconomic conditions during downturns.

This study seeks to address these gaps by examining the dynamics of firms' payout policies during periods of economic stability and crisis. The first objective is to examine how firms prioritize dividend stability over share repurchase flexibility during economic downturns, providing insights into the resilience of payout policies. Second, the study analyzes the determinants of dividend forecast error, focusing on how firm-specific characteristics such as size, profitability, and earnings volatility affect the accuracy of dividend forecasts. Finally, it examines the role of share repurchases in influencing the variability of dividend forecasts, with a special focus on their impact during recessionary periods.

The study provides important insights into corporate payout behavior. Firms prioritize maintaining dividend stability over share repurchases during economic downturns, underscoring the signaling value of dividends. At the same time, repurchases exhibit greater flexibility, with firms significantly reducing them during crises in order to preserve liquidity. The analysis also shows that firm-specific characteristics such as size and earnings stability play a crucial role in reducing forecasting errors, while higher earnings volatility and free cash flow increase variability. In addition, firms that rely more heavily on repurchases exhibit higher forecast errors during recessions, reflecting the discretionary nature of this payout mechanism. These findings make important contributions to both theoretical understanding and practical applications. From a theoretical perspective, the results refine the substitution hypothesis,

proposed by Grullon and Michaely (2002), by indicating that dividends and share repurchases are not substitutes but complementary instruments in firms' payout strategies. Dividends provide stability and build long-term investor confidence through consistent payouts, while share repurchases provide firms with the flexibility to adjust capital distributions to fluctuating earnings and market conditions. This duality highlights the sophisticated role each mechanism plays in managing both shareholder expectations and corporate financial constraints, particularly during periods of economic volatility.

In practical terms, these findings provide valuable guidance for corporate managers, investors, and policymakers trying to navigate financial uncertainty. Among corporate managers, the study underscores the importance of aligning payout strategies with both internal capabilities and external expectations. By understanding the stabilizing role of dividends and the adaptive potential of buybacks, managers can develop more resilient strategies that meet liquidity needs without damaging investor confidence. Meanwhile, these findings provide investors with tools to interpret firms' payout decisions as signals of financial health and management intentions. Dividends signal reliability and sustained profitability, while fluctuations in buyback activity may reflect a firm's response to changing market conditions. Policymakers can use these insights to evaluate the broader economic implications of payout regulations, particularly in crisis scenarios where corporate liquidity management and investor confidence are critical to market stability.

In today's increasingly uncertain global economic environment, these findings are particularly relevant. Rising inflation, geopolitical tensions, and volatile financial markets have created a landscape in which companies must manage complex trade-offs between ensuring stability and maintaining flexibility. Dividends, as a stabilizing force, help to strengthen investor confidence, but they require firms to demonstrate consistent profitability and financial discipline. On the other hand, buybacks provide firms with a mechanism to adapt quickly to unpredictable conditions, preserve liquidity and allow for discretionary capital allocation. The ability to effectively balance these competing priorities is critical to maintain financial resilience, meet shareholder expectations, and secure long-term growth potential.

Ultimately, the findings underscore that payout policies are not static decisions, but dynamic tools that reflect a firm's strategy for overcoming financial challenges and opportunities. Thus, they have important implications not only for firms themselves, but also for the broader market ecosystem, influencing investor behavior, regulatory frameworks and economic stability in times of both growth and crisis.

The study is structured as follows. Section 2 reviews the relevant literature, outlining the theoretical foundations and empirical studies related to dividends, share repurchases, and firms' payout strategies during economic crises. Section 3 describes the analytical framework and hypotheses that guide this research, including a detailed description of the data used in the analysis. Section 4 presents the main results, providing insights into how firms adjust their payout strategies in response to firm-specific characteristics and macroeconomic conditions. Finally, Section 5 discusses the implications of the findings, highlighting their contributions to theory and practice and providing recommendations for future research.

2. Literature Review

2.1 The Intuition behind Dividends and Share Repurchases

The fundamental basis for understanding the impact of dividends on companies and investors begins with the Lintner model, introduced by John Lintner in 1956. This model is considered the cornerstone of modern dividend theory, providing a systematic explanation of how companies determine their dividend policy. Lintner finds that companies take a conservative and stable approach to dividends, adjusting them gradually to avoid volatility. Firms seek to avoid dividend cuts because they are often interpreted negatively by the market as a sign of potential financial distress. These findings highlight the important role of dividends in signaling a firm's financial health and consistent profitability (Lintner, 1956).

This signaling effect is further strengthened by research showing that dividends often act as a message to investors, reinforcing perceptions of stability and long-term financial strength (Bhattacharya, 1979; Miller & Rock, 1985). Denis and Osobov (2008) extend this framework by showing that larger, more profitable firms with strong retained earnings are more likely to pay dividends. Their findings emphasize that dividends are more common among mature firms with fewer investment opportunities, which is consistent with the lifecycle theory of dividends. This theory suggests that as firms grow and their investment needs decline, they allocate surplus earnings to dividends as a means of returning value to shareholders. In addition to their signaling role, dividends serve to reduce agency costs. By distributing excess cash flow to shareholders, firms limit the resources available to management for potentially inefficient or value-destroying investments (Jensen, 1986).

Compared to dividends, share repurchases have become a more adaptable and strategically appealing way to distribute capital to shareholders. By reducing the total number of shares in circulation, buybacks enhance earnings per share and can lead to higher stock valuations (Jensen, 1986). Vermaelen (1981) highlights that buybacks are often used as a signaling

mechanism, with management buying back shares when they believe the company's stock is undervalued. This action sends a message of confidence to the market, often resulting in a positive short-term stock price reaction (Grullon & Michaely, 2001; Wang et al., 2021).

The discretionary nature of buybacks distinguishes them from dividends. Unlike dividends, which are expected to remain stable or grow over time, buybacks can be adjusted or suspended based on a company's financial performance or market conditions. Dittmar (2000) finds that this flexibility makes buybacks particularly valuable during periods of economic uncertainty or volatile earnings. In addition, buybacks offer tax advantages over dividends, as shareholders can defer capital gains taxes and in many cases, pay lower rates on these gains (Dittmar, 2000).

While buybacks offer several advantages, they are not free from criticism. Sometimes, the goal of increasing short-term earnings per share drives these decisions, but this can come at the expense of reduced investment in long-term initiatives, such as research and development or capital expenditures, potentially constraining the company's future growth prospects. (Almeida et al., 2015). Excessive reliance on buybacks has also been associated with a reduction in insider ownership and lower long-term firm performance (Wang et al., 2021).

The motivations behind dividends and buybacks reveal distinct impacts on corporate strategy. Dividends are traditionally associated with mature firms seeking to reinforce financial stability and align managerial incentives with shareholder interests. In contrast, buybacks are often employed by firms in transitional phases, leveraging their flexibility for financial engineering or to counter stock option dilution (Dittmar, 2000). Grullon and Michaely (2002) introduce the substitution hypothesis, arguing that buybacks increasingly replace dividends as the preferred payout method. However, this trend is influenced by factors such as taxation, regulation and evolving investor preferences.

2.2 The Transition to Share Repurchases as the main Corporate Payout Policy

The transition from dividends to share repurchases as the dominant payout method among U.S. companies reflects evolving corporate strategies influenced by regulatory, economic, and market dynamics. Historically, dividends symbolized corporate stability, providing investors with a consistent signal of long-term profitability. However, the percentage of firms paying dividends declined significantly between 1978 and 1998, a trend that has largely been attributed to the emergence of smaller, high-growth firms with characteristics less suited to dividend payments (Fama & French, 2001). This decline was also accompanied by a general reduction

in the propensity of even large, profitable firms to pay dividends, marking a turning point in corporate payout practices.

The increasing prevalence of share repurchases was facilitated by regulatory changes, such as the introduction of SEC Rule 10b-18 in 1982. This rule provided legal clarity and protection against accusations of market manipulation, making repurchases a more attractive option for companies (Cook et al., 2001). Unlike dividends, share repurchases provide companies with the flexibility to adjust their payout strategies in response to changing earnings and market conditions. Companies with unstable cash flows often prefer repurchases to dividends because the discretionary nature of repurchase programs provides greater financial flexibility during periods of uncertainty (Jagannathan et al., 2000). This flexibility became particularly evident during the 2008 financial crisis, when companies were more likely to suspend repurchases than to cut dividends, minimizing negative market reactions (Iyer & Rao, 2014).

Tax advantages further accelerated the shift towards repurchases. Although the 1986 Tax Reform Act narrowed the gap between dividend and capital gains tax rates, capital gains retained their relative tax advantage, as they allow investors to defer tax liabilities until shares are sold (Michaely, 1991). Institutional investors, who favor tax-efficient strategies, have increasingly supported repurchases, thereby influencing corporate payout policies. The growing use of equity-based compensation plans has also contributed to the popularity of repurchases, as firms use them to counteract the dilutive effects of stock option programs and boost earnings per share (Almeida et al., 2016; Iyer & Rao, 2014).

Empirical evidence supports the idea that share repurchases have become a substitute for dividends. The substitution hypothesis suggests that, while older firms tend to maintain established dividend policies, they increasingly use repurchases to distribute incremental earnings (Grullon & Michaely, 2001). Younger firms initiating payouts often favor repurchases entirely, aligning with investor preferences for flexible and tax-efficient capital distribution. The behavior of firms engaging in repurchases also reflects a responsiveness to temporary earnings changes, as repurchases are closely tied to cyclical profitability, while dividends remain connected to stable, long-term earnings (Lee & Rui, 2004; Brav et al., 2005).

Although repurchases offer notable advantages, they have faced criticism for their potential drawbacks. Firms may utilize these strategies to manage earnings per share, often prioritizing short-term financial gains at the expense of long-term investments, such as research and development or capital expenditures, thereby raising concerns about their long-term sustainability (Almeida et al., 2016). Additionally, the discretionary nature of share repurchases

has also led to concerns about potential misuse, especially due to the absence of mandatory disclosure requirements under SEC Rule 10b-18 (Cook et al., 2001). Nevertheless, repurchases have emerged as the dominant payout strategy for U.S. firms, reflecting a broader evolution in corporate finance.

2.3 Corporate Payout Policies during Crisis Times

Corporate payout policies, including dividends and share repurchases, undergo significant adjustments during economic crises as firms adapt to heightened financial uncertainty and liquidity constraints. During the 2008–2009 financial crisis, corporate payouts were notably reduced, with repurchases experiencing a sharper decline than dividends. Among the firms studied by Bliss et al. (2015), repurchase activity fell by 89%, while dividend reductions were less severe, reflecting the perception of dividends as a stronger commitment to shareholders and a tool for signaling stability. The savings generated from reduced payouts allowed firms to bolster cash reserves and sustain critical investments, illustrating how payout adjustments function as a financial buffer during credit supply shocks.

Dividends demonstrated resilience during the financial crisis, particularly among industrial firms that sharply reduced repurchases while maintaining relatively stable dividend levels. This stability is attributed to the role of dividends in reinforcing investor confidence and addressing agency conflicts. Banks, in particular, resisted cutting dividends for as long as possible, even as financial pressures mounted, highlighting their importance in maintaining trust among stakeholders (Floyd et al., 2015). This behavior aligns with findings showing that firms often prioritize dividends over repurchases during crises due to the former's stronger signaling value (Chay & Suh, 2009).

The Covid-19 pandemic provides a more recent example of how crises reshape corporate payout policies. Dividend omissions and cuts reached unprecedented levels in 2020, as firms prioritized liquidity and financial flexibility over maintaining historical payout levels. These adjustments were widespread, affecting a broad range of industries beyond the financial sector and underscoring the vulnerability of traditional payout strategies during severe economic disruptions (Krieger et al., 2021). However, during periods of heightened economic policy uncertainty, some firms increase dividends to mitigate agency problems and reassure investors, demonstrating the context-dependent nature of payout adjustments (Attig et al., 2016).

Firms facing high cash flow uncertainty during crises often reduce payouts to preserve internal capital. This behavior was particularly evident among U.S. banks during the financial crisis, where regulatory requirements further constrained their ability to distribute earnings. Despite

this, dividends continued to serve as a tool for signaling solvency and stability to the market, even as their levels were adjusted downward (Abreu & Gulamhussen, 2013). By contrast, repurchases, which are more closely tied to temporary earnings fluctuations, were curtailed more aggressively, reflecting their discretionary nature and reduced signaling importance (Dittmar & Dittmar, 2002; Lee & Rui, 2004).

While repurchases offer firms flexibility, their sensitivity to macroeconomic volatility makes them a less reliable payout mechanism during crises. The procyclical nature of repurchases, which rise and fall with economic conditions, contrasts with the stability sought by firms maintaining dividend payouts. The adaptability of repurchases is evident during the 2008 financial crisis and the COVID-19 pandemic, as firms quickly adjusted or suspended repurchase programs without significant market backlash. This flexibility allows companies to conserve cash while avoiding the negative signals typically associated with dividend cuts (Floyd et al., 2015). The dynamics of corporate payout policies during crises underscore the trade-offs firms face between maintaining shareholder trust and preserving liquidity. While dividends are often sustained as a signal of financial strength, repurchases provide firms with greater adaptability to navigate the economic uncertainty inherent in crises.

3. Framework

In this chapter, I establish the foundation for the analytical framework by presenting an overview of the fundamental assumptions guiding this research and providing a detailed explanation of their significance to the study. This is followed by an introduction and description of the dataset used for the analysis, including its origins, structure and the pre-processing undertaken to ensure reliability and validity. Next, I define the key variables used in the study, explaining their relevance and how they relate to the research objectives. Finally, I provide a thorough outline of the statistical models used to test the hypotheses, detailing the rationale for their selection and the specific methods used to draw meaningful conclusions from the data.

3.1 Hypotheses

This paper is predicated on the fact that the payout policy of American companies with respect to stocks and dividends has undergone a transformation over the past two decades, particularly during periods of economic crisis. To gain a more detailed understanding of the changes in payout policy, I will investigate the following three hypotheses:

(1) $\boldsymbol{H_1}$**:** Firms are less likely to reduce dividends than share repurchases during recession periods, indicating a higher commitment to dividend stability.

(2) $\boldsymbol{H_2}$**:** The Dividend forecast error is systematically influenced by firm-specific characteristics, with periods of recession increasing the impact of these characteristics on forecast accuracy.

(3) $\boldsymbol{H_3}$**:** Firms with higher reliance on buybacks relative to dividends experience larger dividend forecast errors, especially during recessionary periods.

3.2 Data

The data I use in this study covers the period from 2000 to 2023 and is largely derived from the Compustat North America database, which contains financial information on publicly traded companies in the United States. I have constructed the dataset with the objective of analyzing the payout policies of firms, with a particular focus on dividends and share repurchases as mechanisms for returning capital to shareholders. To ensure the representativeness and integrity of the data set, I have excluded firms in regulated industries, namely financial institutions, utilities, and insurance companies. The selection process excludes firms with Standard Industrial Classification (SIC) codes within the ranges 6000-6099 (banks), 4900-4999 (utilities), and 6300-6399 (insurance companies) due to the fact that these industries often follow unique regulatory and financial practices that may distort comparative payout analysis. The sample is limited to firms with complete data on key variables, including dividends, share repurchases, earnings before interest and taxes, and market value, to ensure consistency across observations. In the case that a company has missing values for these variables, it is omitted from the analysis. The observations are aggregated at the annual level, thereby enabling an analysis of shifts in payout policy and an examination of trends under varying economic conditions, including both recessionary and non-recessionary periods. Following the removal of companies with incomplete data from the data set, the remaining observations were from 15.270 companies, totaling 258.285. The considerable number of observations allows me the generation of representative results.

3.3 Key Variables and Definitions

The dataset I use in this analysis incorporates several Compustat variables critical to understanding and modeling payout policies. Each of the following variables reflects current Compustat definitions to ensure clarity and consistency with present-day reporting standards. Below are the definitions of the primary variables employed in the analysis:

Variable	Notation	Description
Assets	*AT*	Total assets controlled by the firm at the end of the fiscal year, indicated in Compustat by AT.
Cash and short-term investments	*CASH*	Cash and short-term investments held by the firm, reported by Compustat as *CHE*.
Dividend Forecast Error	*DFE*	Measures the deviation between actual and predicted dividend payouts, adjusted by the firm's market value. Defined by Grullon & Michaely (2001).
Dividends	*DIV*	Represents the total amount of the preferred dividend requirement on cumulative preferred stock and dividends paid on noncumulative preferred stock of the company during the year.
Earnings Before Interest and Taxes	*EBIT*	The measure of a firm's operating income before interest and taxes, defined by Compustat under *EBIT*` .
Free Cash Flow	*FCF*	Calculated as operating cash flow *OANCF* minus capital expenditures *CAPX*, representing the cash available after operational and capital expenses.
Leverage	*LEV*	The ratio of total debt (*DLTT* for Long-term Debt and *DLC* for Current Debt) to total assets *AT*.
Market-to-Book Ratio	*MB*	The ratio of market value to book equity, reflecting the firm's market valuation relative to its book value. Calculated using *MKVALT* and *CEQ* (Common Equity).
Market Value	*MV*	Represents the total market capitalization of a firm, calculated using the year-end stock price (PRCC_F) and the number of shares outstanding (CSHO) from the Compustat database.
Non-operating Income	*NOPI*	Income not generated from core operations, defined by Compustat under *NOPI.*
Non-Operating Profit	*NOP*	Non-operating income before depreciation, scaled by the book value of total assets.
Repurchase Yield	*RYIELD*	Indicates the proportion of the firm's market value returned to shareholders through share repurchases.
Return on Assets	*ROA*	Profitability relative to total assets, defined as net income *NI* divided by total assets *AT*.
Standard Deviation of ROA	$\sigma(ROA)$	The rolling standard deviation of *ROA*, representing the volatility of a firm's earnings over period of three years.
Share Repurchases	*SR*	Represents the total dollar amount spent on share repurchases by the firm within a fiscal year, derived from the Purchase of Stock *(PRSTKC*) in Compustat and adjusted for stock issuances.

3.4 Time Periods and Economic Cycle Distinctions

I include a distinction between recessionary and non-recessionary years in the dataset, allowing a targeted analysis across different economic conditions in the U.S. Recession years within the study are defined as the years 2001, 2008-2009, and 2020, based on officially recognized periods of economic contraction according to the National Bureau of Economic Research (NBER). The original NBER recession definitions are not limited to full calendar years; however, I round these periods to full years to match the annual data format available from Compustat. This approach ensures consistency between the data set and the analysis and allows for a clear and systematic examination of trends over time. By simplifying the adjustment of recessionary periods to annual financial data, this methodology facilitates a robust analysis of how companies adjust their payout policies in response to macroeconomic pressures, examining whether they alter dividend payments and share repurchases as a flexible response to external financial shocks.

3.5 Methodology

In this study, I employ a combination of regression modeling, transition probability analysis, and fixed-effect regression techniques to examine the influence of firm-specific characteristics and economic cycles on dividend forecast errors and payout policy stability. These methods permit a comprehensive investigation into the impact of firm characteristics on *DFE*, the correlation between reliance on share repurchases and forecasting accuracy, and the manner how firms adjust their payout policies, particularly dividends, during economic downturns.

3.5.1 Descriptive Statistics

In Tables 1 and 2, I present a comprehensive overview of the payout policy and financial ratios of the companies in my analysis, to offer a detailed representation of the database. Table 1 presents the aggregate annual amounts of dividends and share repurchases returned to shareholders by the companies in the sample. These totals allow me to provide an overview of the annual distributions and enable an assessment of their development over the period under review. In order to facilitate comparison and achieve broader meaningfulness, I set the distributions in relation to key corporate figures.

One primary focus is the analysis of distributions relative to the earnings power of the companies in question. I present this by using the ratio of dividends and buybacks to *EBIT*. By using this approach, I demonstrate the extent to which companies utilize their operating results for capital distributions, thereby facilitating an assessment of their distribution intensity. Furthermore, I conduct an analysis of payout behavior in the context of market capitalization,

whereby I express both dividends and buybacks as a percentage of market value. This calculation demonstrates the proportion of the total company value that is returned to shareholders on an annual basis. Another important aspect of Table 1 is the ratio of buybacks to dividend payments, which facilitates a direct comparison between these two methods of capital distribution. This enables me to analyse whether companies tend to rely more on buybacks than on dividends and how these preferences evolve over time.

Table 2 shifts the focus from an aggregate analysis of payout amounts to an analysis of the financial and operational characteristics of companies that pursue different payout strategies. In order to achieve this objective, I classify the companies four distinct groups: those that neither pay dividends nor repurchase shares, companies that exclusively pay dividends, those that solely repurchase shares, and finally, companies that utilize both forms of capital payout policies. Within these four categories, I calculate various financial ratios in order to illustrate the typical attributes of each group and to enhance comprehension of potential discrepancies in the distribution strategy. For each group, I additionally calculate financial ratios such as market capitalization, total assets, and market-to-book ratio with the objective of elucidating the size and market valuation of the companies in question. Subsequently, I employ the cash ratio to ascertain the extent of available liquidity, whereas I utilize the return on assets to evaluate the efficiency with which companies utilize their assets to generate profits. Furthermore, I determine the volatility of the return on assets to quantify the stability of profitability in the various groups. Additionally, I generate non-operating income outside the core business to offer insights into potential alternative sources of income that could inform the distribution strategy. These descriptive statistics facilitate the identification of initial correlations between company characteristics and the preference for specific types of distributions, thereby providing a robust foundation for subsequent analysis.

3.5.2 Transition Probabilities of Shifts in Payout Policy

Table 3 illustrates the methodology employed for calculating transition probabilities, which is utilized to analyze the probability of companies transitioning from one dividend policy to another. In each year under consideration, I conduct an analysis to ascertain whether and, if so, how frequently companies alter their dividend and share repurchase policies. The calculation of these probabilities offer insights into the stability and flexibility of dividend policy over time and serves as the foundation for identifying specific patterns of change under varying economic conditions.

I start by categorizing the companies' payout policies. Each company is assigned to one of four possible categories each year:

1. *DIV=0, SR=0:* Companies that neither pay dividends nor buy back shares.
2. *DIV>0, SR=0:* Companies that pay dividends but do not buy back shares.
3. *DIV=0, SR>0:* Companies that do not pay dividends but buy back shares.
4. *DIV>0, SR>0:* Companies that both pay dividends and buy back shares.

Thus, this classification system enables me to determine the dividend strategy followed by each company on an annual basis, as well as the calculation of the number of transitions from one category to another.

The actual calculation of the transition probability is accomplished by recording the frequency of transitions between two specific categories. For example, the probability of a transition from DIV>0, SR=0 to DIV=0, SR>0 is calculated by dividing the number of transitions from one category to a different category by the total number of companies in the initial category. The formula I use to calculate the probability of a transition is as follows:

$$Transition\ Probabilities = \frac{Number\ of\ Transitions\ from\ A\ to\ B}{Number\ of\ all\ companies\ in\ Cate9ory\ A} \quad (1)$$

The transition probabilities indicate the probability of a company transitioning from one category, designated as category *A*, to another category, designated as category *B*. The numerator records the frequency of this specific change, while the denominator indicates the number of companies that were originally in the initial category, designated as category A.

In order to ascertain whether economic conditions impact payout policy, I apply this method separately for recession periods, non-recession periods, and for the total data set. As I have defined in section 3.2 , recession periods are defined on the basis of recognized economic criteria so that a distinction can be made between periods of economic stability and instability. For each of the periods - recession, non-recession and total data - I calculate the transition probabilities within the four categories independently, thus allowing a comprehensive comparison between the two economic states and the entire observation period. This enables an investigation of whether companies alter their dividend policy with greater frequency during periods of economic instability or whether they adhere to a consistent strategy.

3.5.3 Dividend Forecast Error and Cross-Sectional Regressions

The Dividend Forecast Error is a metric that quantifies the discrepancy between the anticipated and actual dividends distributed by a company, evaluating the precision of dividend projections.

This calculation is based on the model proposed by John Lintner (1956), which provides a significant theoretical foundation for understanding the dividend policies of companies. Lintner posited that corporations establish their dividend policy based on a "target dividend level" that is shaped by both present earnings capacity and historical dividend distributions. However, companies typically only make incremental adjustments to this target level, aiming to achieve a stable dividend policy and avoid significant fluctuations.

In the analysis, I employ the Lintner model to ascertain the anticipated dividend value, which I use afterwards to calculate the anticipated dividend forecast error. The model considers two principal factors: the company's current profitability and the dividend paid in the preceding year. The anticipated dividend level can be expressed as follows:

$$Dividends_{Pred} = \beta_1 + \beta_2 Earnings_{t,i} + \beta_3 Dividends_{t-1,i} \quad (2)$$

$\beta_{1,i}$ represents a constant, $\beta_{2,i}$ the influence of the profits on the dividend amount, and $\beta_{3,i}$ the degree of dividend stability, which indicates how strongly the dividends of the previous year influence the current dividend policy. In this equation, $Earnings_{t,i}$ represents the company's earnings in the current year and $Dividends_{t-1,i}$ represents the dividends paid out in the previous year.

I derive the *DFE* from the discrepancy between the actual dividend change in a given year and the projected value based on the Lintner model. In order to ensure comparability regardless of the size of the company, the error is based on the market capitalization of the previous year. The formula for calculating the dividend forecast error is as follows:

$$DFE_{t,i} = \frac{Dividends_{Actual} - Dividens_{Pred}}{Market\ Value_{t-1}} \quad (3)$$

$Dividends_{Actual}$ is defined as the dividend actually distributed, while $Dividens_{Pred}$ represents the dividend value calculated according to the Lintner model. $Market\ Value_{t-1}$ refers to the market capitalization of the company in the previous year.

A positive *DFE* indicates that the actual dividends exceed the expected level, whereas a negative value indicates that the distributions are below the forecast level. The *DFE* thus allows to evaluate of the precision of dividend forecasts and provides the foundation for an investigation into the impact of external factors, such as economic fluctuations or specific company characteristics, such as size and financial stability, on this forecast error.

The model I use in the analysis employs the *DFE* as the dependent variable to investigate the influence of firm-specific characteristics on the accuracy of dividend forecasts. Therefore, I use a fixed-effects panel data model to filter out time-invariant, firm-specific characteristics, enabling a precise analysis of the effects that variables such as company size (*log(MV)),* profitability (*ROA*), earnings stability (*σ(ROA)*), non-operating income (*NOP*), leverage (*LEV*), and free cash flow (*FCF*) have on the forecast error. Additionally, the model incorporates the repurchase yield (*RYIELD)*, which measures the proportion of market capitalization returned to shareholders through share buybacks, as an independent variable to analyze its potential impact on the *DFE*. This method permits the examination of the relationship between these variables and the *DFE* over time, while accounting for potential intragroup variations.

In the first regression model, I do not take economic conditions into account and the *DFE* and firm-specific characteristics are modelled directly. This allows for a differentiated analysis of each company's payout-specific characteristics in comparison to actual dividend predictions. This will allow me to examine the extent to which internal factors, such as financial resources and buyback strategies, influence the *DFE* and whether larger or more profitable companies are more successful than others in meeting their dividend forecasts.

$$DFE_{t,i} = \beta_0 + \beta_1 RYIELD_{t,i} + \beta_2 \log(MV)_{t,i} + \beta_3 ROA_{t,i} + \beta_4 \sigma(ROA)_{t,i} + \beta_5 NOP_{t,i} + \beta_5 LEV_{t,i} + \beta_6 FCF_{t,i} + u_{t,i} \quad (4)$$

In the extension of the model, I introduce a recession dummy to characterize recession years, and I add the dummy as an interaction term to each firm-specific characteristic. The recession variable is set to a value of 1 in years in which an economic downturn is identified, as previously defined, and remains at a value of 0 in other years. This dummy helps to extend the model so that differences in the accuracy of the forecast between recessionary and non-recessionary years can be examined. The interaction terms that I insert between the recession variable and selected company characteristics, enable an analysis of whether and how the effect of these characteristics on the *DFE* varies in periods of economic downturn.

$$DFE_{t,i} = \beta_0 + \beta_1 Recession + Recession * (\beta_2 RYIELD_{t,i} + \beta_3 \log(MV)_{t,i} + \beta_4 ROA_{t,i} + \beta_5 \sigma(ROA)_{t,i} + \beta_6 NOP_{t,i} + \beta_7 LEV_{t,i} + \beta_8 FCF_{t,i}) + u_{t,i} \quad (5)$$

This extended form of the model permits a comprehensive examination of the influence of both company-specific characteristics and economic conditions on the forecast error associated with

dividend predictions. The fixed-effects model guarantees that company-specific, time-constant factors are controlled, thus enabling the influences of the modelled variables and their specific effect in recession years to be visualized in isolation. This methodology can be employed to ascertain whether specific characteristics, such as size, buyback activity and financial flexibility, exert a greater influence on the precision of dividend payout forecasts, particularly during periods of economic downturn. This provides an in-depth examination of the resilience of firms' dividend policies and the adaptability of their payout strategies across diverse economic phases.

4. Results

4.1 Descriptive Statistics and Firm Characteristics

Table 1 offers a comprehensive overview of aggregate cash distributions to equity holders, capturing both dividends and share repurchases from 2000 to 2023. Dividends have demonstrated remarkable stability as a central component of cash distributions, maintaining consistent levels throughout the observed period, including during economic downturns such as the 2008-2009 financial crisis and the 2020 COVID-19 pandemic. This is consistent with the findings of Floyd et al. (2015), who observed the resilience of dividends even during financial crises, highlighting their role as a signaling mechanism for financial stability. In the context of declining earnings, firms continue to prioritize the sustainability of dividend payments, as dividends serve as a reliable indicator of financial health and stability. This stability is reflected in the Dividend-Earnings-Ratio, which demonstrates a consistent range of 30% to 40%, and the Dividend-to-Market-Value-Ratio, which exhibits a relatively stable ratio of approximately 2 - 3%. These patterns serve to underscore the role of dividends as a predictable and stable element of corporate payout policies and align with the findings of Lintner (1956) and Denis & Osobov (2008).

In contrast, share repurchases exhibit considerable variability, reflecting their flexible and discretionary nature. The repurchase of shares is a strategy that is employed more frequently during periods of economic growth. This is evidenced by the fact that the repurchase earnings ratio peaks at nearly 50% in 2007. However, during periods of economic downturn, such as the 2008-2009 recession and the 2020 pandemic, the repurchase of shares is scaled back significantly, with the Repurchase-Earnings-Ratio dropping to under 20%. This variability is consistent with Grullon and Michaely's (2002) substitution hypothesis, which argues that buybacks serve as a complement to dividends, allowing firms to flexibly adjust payout strategies in response to changing economic conditions. Firms employ repurchases as a flexible

instrument for managing cash flow, reducing or even suspending them during periods of financial uncertainty without triggering the same adverse market reactions associated with dividend reductions.

The Repurchase-to-Dividend-Ratio serves to further highlight this contrast. In periods of economic expansion, such as 2007, repurchases exceed dividend payments significantly, reflecting firms' willingness to utilize excess cash in a flexible manner. During periods of economic contraction, however, the ratio declines markedly, indicating a shift in priority from repurchases to dividends. This trend echoes findings by Floyd et al. (2015), who document how firms, even under economic strain, are reluctant to cut dividends due to their signaling implications but reduce repurchases extensively.

In addition to the results from Table 1, Figure 1 provides further insight into the these trends by presenting the median payout ratios for dividends, repurchases, and total payouts as a proportion of earnings. It demonstrates the consistent stability of dividend payout ratios, which remain relatively steady over time, reinforcing the notion of dividends as a cornerstone of payout policies. In contrast, repurchase payout ratios exhibit notable fluctuations, which correlate with periods of economic growth and contraction. These findings are consistent with Wang et al. (2021), who highlight the cyclical nature of repurchases and their use as a resilient tool during economic expansions. It is worth noting that total payout ratios reflect the combined trends of dividends and repurchases. This demonstrates how firms adjust their overall payout strategies in order to achieve a balance between stability and flexibility. This figure highlights the complementary roles of dividends and repurchases in corporate financial strategies. Dividends provide predictability, while repurchases offer adaptability to changing economic conditions.

Table 2 provides a comprehensive view of the differences in firm characteristics across the four payout policy groups, illustrating how financial scale, profitability, and stability influence payout behaviors. Firms that neither pay dividends nor repurchase shares are the smallest and least stable in the sample. These firms exhibit low market values, with a mean of $1,132.00 million (median $103.00 million), and low asset levels, with a mean of $39.80 million (median $2.35 million), which indicates a limited operational scale. Despite maintaining substantial cash reserves as a percentage of their assets, with a mean of 29.80% (median 6.95%), which is likely to mitigate financial uncertainty, they exhibit negative profitability, with a mean ROA of -15.80% (median 0.05%), and high earnings volatility, with a $\sigma(ROA)$ of 21.10% (median 3.10%), which reflects operational instability. These firms appear to prioritize the preservation

of liquidity over the return of cash to shareholders, which suggests that they may be in an early growth stage or recovering from financial distress.

I find that firms which focus only on share repurchases demonstrate greater financial scale and stability than those which do not pay out dividends. The higher market values, with a mean of $2,776.00 million (median $331.00 million), larger asset bases, with a mean of $74.70 million (median $9.93 million), and improved profitability metrics, with a mean *ROA* of -2.51% (median 1.79%), suggest that these firms have greater resources available for allocation to shareholder payouts. These results align with Almeida et al. (2015), who highlight that firms with moderate profitability and cash flow flexibility prefer repurchases over dividends. These companies maintain moderate cash reserves, with a mean of 22.50% (median 5.29%), and have lower earnings volatility, with a *σ(ROA)* of 6.99% (median 1.59%), indicating more predictable financial outcomes. This group appears to utilize the flexibility of share repurchases to adapt their payout strategies in response to market conditions, thereby avoiding the fixed commitments associated with dividends.

Firms that only pay dividends stand out as some of the most financially robust entities in the sample. With a mean market value of $8,415.00 million (median $1,052.00 million) and substantial asset bases, with a mean of $338.00 million (median $28.40 million), these firms demonstrate notable market presence. These firms achieve the highest profitability metrics, with a mean return on assets (*ROA*) of 30.60% (median 3.60%), and maintain substantial cash reserves, with a mean of 26.90% (median 3.61%). Although they experience slightly higher earnings volatility (*σ(ROA)* of 18.50%, median 1.57%) than repurchasing firms, these characteristics align with the lifecycle theory of dividends (Denis & Osobov, 2008).

Firms that combine dividends and share repurchases are the largest, most profitable, and financially stable in the sample. The superior market values, with a mean of $16,710.00 million (median $3,132.00 million), and asset bases, with a mean of $549.00 million (median $77.10 million), are indicative of their dominant operational scale. These firms allocate resources efficiently, maintaining lower cash reserves relative to total assets (mean 13.40%, median 2.93%) while achieving the lowest earnings volatility among all groups ($\sigma(ROA)$ 4.51%, median 1.08%). This group benefits from a balanced approach to payouts, whereby dividends are leveraged for stability and repurchases are employed for flexibility. This strategy appeals to a broad investor base and reflects strong financial planning and adaptability.

4.2 Payout Policies and Transition Probabilities

Figure 2 illustrates the distribution of firms based on their chosen payout method, illustrating key differences in firm behavior during periods of economic downturn and expansion. In periods of economic downturn, firms show a preference for liquidity preservation, with the proportion of firms paying only dividends or engaging in both dividends and repurchases remaining relatively stable. Conversely, there is a notable decrease in the prevalence of firms relying solely on repurchases, which reflects the discretionary nature of this payout method. In periods of greater stability, firms are more flexible and are more likely to transition to dual payout strategies, which signal greater financial strength and a willingness to enhance shareholder returns. Looking at Table 3 it can be seen that the DIV=0, SR=0 category, which comprises firms that neither pay dividends nor repurchase shares, exhibits the highest persistence at 83.70%. This indicates that a significant number of firms prioritize the retention of liquidity and the avoidance of shareholder payouts during periods of economic decline. Similarly, firms in the DIV=0, SR>0 group, which engage solely in share repurchases, also demonstrate notable persistence at 61.34%. This underscores the flexibility of share repurchases as a payout mechanism in uncertain times. In contrast, firms that pay dividends (DIV>0, SR=0) demonstrate a robust commitment to this policy, with 70.63% of firms remaining in this category. This highlights the stability and signaling value of dividends, even during periods of economic downturn. The DIV>0, SR>0 group, which combines dividends and share repurchases, exhibits a persistence of 62.61%, underscoring the financial resilience required to sustain dual payouts during economic downturns.

During periods of economic stability, firms demonstrate greater flexibility in transitioning between payout categories, as the improved economic environment provides greater financial flexibility. While the DIV=0, SR=0 group still exhibits high persistence (84.03%), firms are more likely to transition into share repurchases (12.31%) compared to recession periods, reflecting an increased willingness to return capital to shareholders. Furthermore, firms paying dividends (DIV>0, SR=0) also exhibit slightly reduced persistence at 70.04%, with a higher probability (23.69%) of transitioning into the DIV>0, SR>0 group. This suggests that during periods of economic stability, firms are more inclined to enhance shareholder returns by adopting dual payout strategies. The DIV>0, SR>0 group demonstrates the highest persistence (76.45%) in non-recession periods, further emphasizing the financial strength of these firms and their capacity to consistently maintain both dividends and share repurchases.

Overall, the analysis highlights distinct firm behaviors during periods of economic downturn and stability. During downturns, firms prioritize liquidity preservation, reflected in the stability of dividend payouts and a reduction in share repurchases, while dual payout strategies persist only among financially resilient firms. Conversely, in stable periods, firms exhibit greater flexibility, with increased transitions into dual payout strategies, signaling enhanced financial strength and a focus on shareholder returns.

4.3 Dividend Forecast Error Regression

The objective of the fixed effects regression is to ascertain how firm-specific characteristics impact *DFE* across the entire dataset. This provides an initial understanding of how these variables impact forecast accuracy in a general context, with more detailed analyses by economic conditions to follow.

Table 3 shows that firm size, measured by the logarithm of market value, has a statistically significant negative impact on *DFE*, with a coefficient of -0.0315. This indicates that an increase in firm size by one unit on the logarithmic scale reduces forecast error by approximately 0.0315. Larger firms therefore tend to exhibit smaller forecasting errors due to their operational stability, predictable financial practices, and stronger ability to manage market uncertainties, which contribute to consistent dividend policies. The coefficient of free cash flow is significant and positive at 0.00001, indicating that for every $1 million increase in free cash flow, the forecast error increases by 0.00001. This suggests that higher free cash flow introduces additional variability into dividend forecasting, as firms with surplus cash flows may allocate resources flexibly to share repurchases, debt repayment, or reinvestment. This aligns with findings of Jensen (1986), who argues that firms with high free cash flow face agency costs, as managers can pursue variable payout strategies rather than adhering to predictable payouts. Repurchase yield has a marginally negative coefficient of -0.0700, indicating that greater emphasis on share repurchases may potentially reduce *DFE* slightly, although this result is not statistically significant. This supports the argument by Grullon and Michaely (2002) that share repurchases provide financial flexibility by allowing firms to adjust cash distributions without modifying dividends, which are typically regarded as long-term commitments. Earnings volatility, measured by the standard deviation of return on assets, also shows a marginally negative coefficient of -0.0001, indicating that greater earnings instability is correlated with higher forecast errors. This reflects the challenges firms face in maintaining predictable payout strategies under volatile profitability.

The second regression model focuses on examining the impact of firm-specific characteristics on *DFE* during periods of economic downturn. The results, displayed in Table 5, show that *DFEs* are, on average, higher during recessions. This is shown by the positive and significant coefficient on the recession dummy of 0.0272. This suggests that the greater uncertainty and financial pressures associated with economic downturns lead to larger differences between projected and actual dividends. Wang et al. (2021) similarly find that economic uncertainty introduces significant variability into firms' payout behavior, highlighting the destabilizing effect of recessions on dividend predictability. The logarithm of market value is negatively related to firm size, with a coefficient of -0.0037, indicating that larger firms experience smaller *DFEs* during recessions. This underscores the stabilizing role of greater resources and financial planning, consistent with the findings of Denis and Osobov (2008) that larger firms are better equipped to maintain a consistent payout policy. Leverage also has a significant negative impact, with a coefficient of -0.00008. This implies that firms with higher debt levels tend to adopt a more disciplined approach to their dividend policies during recessions, prioritizing liquidity and meeting financial obligations. In contrast, earnings volatility displays a positive coefficient of 0.0006, suggesting that firms with more volatile earnings face greater challenges in accurately predicting dividends during recessions. This finding is consistent with Almeida et al. (2015), who emphasize that earnings volatility undermines the long-term predictability of dividends, especially during adverse economic conditions. These findings reinforce the destabilizing role of financial uncertainty in dividend planning during downturns.

In summary, the analysis highlights how firm-specific characteristics and economic conditions influence the accuracy of dividend forecasts. Larger firms with greater financial stability consistently exhibit lower forecast errors, while earnings volatility and economic downturns introduce significant variability. These findings underscore the interaction between firm-specific factors and macroeconomic conditions in shaping the predictability of corporate payouts and provide valuable insights into the dynamics of dividend planning in different contexts.

5. Conclusion

The study provides a comprehensive analysis of the evolving corporate payout policies of U.S. firms, focusing on dividends and share repurchases, particularly during periods of economic uncertainty. The analysis addresses the three proposed hypotheses, offering valuable insights into the dynamics of payout decisions and their implications.

First, I find that firms are less likely to cut dividends than to repurchase shares during recessions, reflecting a greater commitment to dividend stability. Consistent with prior research, my analysis shows that dividends serve as a reliable signal of financial health and stability, with firms prioritizing their maintenance even during economic downturns (Lintner, 1956; Floyd et al., 2015). However, repurchases have been shown to be more discretionary, with firms significantly reducing them during financial crises such as the 2008-2009 recession and the COVID-19 pandemic. This flexibility highlights the adaptive role of repurchases in managing liquidity and responding to economic shocks.

Second, I show that the *DFE* is systematically influenced by firm-specific characteristics, including size, profitability, leverage, and earnings volatility. Larger firms, with greater financial stability and operational predictability, consistently exhibit lower forecast errors. This is consistent with Denis and Osobov (2008), who emphasize the stabilizing role of firm size in maintaining a consistent payout policy. However, my analysis shows that higher earnings volatility and free cash flow introduce greater variability into dividend forecasts, reflecting the challenges of maintaining payout predictability under uncertain financial conditions. These effects are amplified during recessions, further demonstrating the destabilizing influence of economic downturns on corporate payout policies.

Finally, my results show that firms with a greater reliance on repurchases relative to dividends tend to exhibit greater *DFE*, especially during economic downturns. This reflects the inherent flexibility of repurchases, which, while beneficial in terms of financial flexibility, introduces additional variability into dividend planning. Therefore, my findings highlight the trade-offs firms face between maintaining the stability associated with dividends and using the adaptability of buybacks to manage financial uncertainty.

The findings offer valuable theoretical and practical insights. Through my findings, I contribute to enhance the understanding of how corporate payout policies are shaped by macroeconomic conditions and firm-specific characteristics, illustrating the interplay between dividends and repurchases as complementary tools during periods of stability and economic crises. My results build on and refine the substitution hypothesis (Grullon & Michaely, 2002) by highlighting the dual roles of stability provided by dividends and flexibility offered by repurchases. From a practical perspective, my study provides investors with a clearer understanding of firm behavior during economic downturns and offers guidance for corporate decision-makers in managing liquidity and optimizing shareholder returns under varying financial conditions.

Future research could further explore the long-term implications of the shift in payout preferences, in particular whether the increased reliance on buybacks affects firm value, investment, and innovation over time. In addition, examining the impact of regulatory changes and evolving investor preferences on payout strategies would provide a more nuanced understanding of the factors driving this transition. Expanding the analysis to include international data would further highlight how global economic conditions affect payout policies across markets and industries. By addressing these questions, future studies can build on the findings of this research and provide a richer perspective on the dynamics of corporate payout decisions in an ever-changing economic landscape.

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Appendix

Table 1

Aggregate Earnings, Dividends and Share Repurchases

Table 1 presents aggregate values of earnings (∑EARN), dividends (∑DIV), and share repurchases (∑SR) for U.S. firms between 2000 and 2023. It also includes the proportions of dividends and share repurchases relative to earnings (∑DIV/∑EARN and ∑SR/∑EARN), market value (∑DIV/∑MV and ∑SR/∑MV), and the dividend-to-share-repurchase ratio (∑DIV/∑SR). The sample consists of 15,280 companies and 258,258 firm-year observations. All monetary values are expressed in millions, and ratios are presented as percentages.

The negative value for ∑SR in 2023 reflects aggregate net share issuance by firms, where share issuances exceeded repurchases during this period. Additionally, it should be noted that some data for 2023 may still be incomplete on Compustat, as not all firms report their financials simultaneously, and data processing or validation delays could result in missing or preliminary values. This may have contributed to the observed negative value for ∑SR.

Year	$\sum_i EARN$	$\sum_i$DIV	$\sum_i SR$	$\frac{\sum_i DIV}{\sum_i EARN}$	$\frac{\sum_i SR}{\sum_i EARN}$	$\frac{\sum_i DIV}{\sum_i MV}$	$\frac{\sum_i SR}{\sum_i MV}$	$\frac{\sum_i SR}{\sum_i DIV}$
2000	850.237	229.281	185.128	26,97%	21,77%	1,40%	1,13%	80,74%
2001	621.263	222.537	171.813	35,82%	27,66%	1,57%	1,21%	77,21%
2002	713.998	233.475	238.143	32,70%	33,35%	2,23%	2,27%	102,00%
2003	959.514	292.922	200.792	30,53%	20,93%	1,98%	1,35%	68,55%
2004	1.126.107	365.405	316.797	32,45%	28,13%	2,17%	1,88%	86,70%
2005	1.316.622	465.352	479.692	35,34%	36,43%	2,53%	2,61%	103,08%
2006	1.580.474	516.245	650.657	32,66%	41,17%	2,42%	3,04%	126,04%
2007	1.604.595	582.096	789.436	36,28%	49,20%	2,50%	3,39%	135,62%
2008	1.305.868	485.046	465.747	37,14%	35,67%	3,55%	3,41%	96,02%
2009	1.296.842	468.810	230.499	36,15%	17,77%	2,75%	1,35%	49,17%
2010	1.607.558	505.701	387.272	31,46%	24,09%	2,46%	1,89%	76,58%
2011	1.783.070	593.197	554.411	33,27%	31,09%	2,95%	2,76%	93,46%
2012	1.729.586	652.359	469.842	37,72%	27,17%	2,97%	2,14%	72,02%
2013	2.080.609	759.721	577.261	36,51%	27,74%	2,83%	2,15%	75,98%
2014	1.727.606	717.977	624.171	41,56%	36,13%	2,58%	2,24%	86,93%
2015	1.595.221	721.140	651.741	45,21%	40,86%	2,80%	2,53%	90,38%
2016	1.591.961	712.131	579.163	44,73%	36,38%	2,63%	2,14%	81,33%
2017	1.923.390	788.977	561.227	41,02%	29,18%	2,39%	1,70%	71,13%
2018	2.058.707	823.524	856.698	40%	41,61%	2,67%	2,78%	104,03%
2019	2.106.852	862.218	772.239	40,92%	36,65%	2,39%	2,14%	89,56%
2020	1.764.086	692.618	583.211	39,26%	33,06%	1,71%	1,44%	84,20%
2021	3.087.520	935.439	1.029.199	30,30%	33,33%	1,78%	1,96%	110,02%
2022	2.627.456	946.562	1.036.295	36,03%	39,44%	2,59%	2,84%	109,48%
2023	262.802	87.719	-353.208	33,38%	-134,40%	3,46%	-13,91%	-402,66%

Table 2

Key Firm Characteristics by Payout Policy

Table 2 presents the mean, median, and number of observations (N) for key firm characteristics, categorized by four payout policy groups: firms that neither pay dividends nor repurchase shares (DIV=0, SR=0), firms that only engage in share repurchases (DIV=0, SR>0), firms that only pay dividends (DIV>0, SR=0), and firms that combine both dividends and share repurchases (DIV>0, SR>0). The variables include market value (MV, in millions), total assets (Assets, in millions), market-to-book ratio (MB), cash holdings as a percentage of total assets (Cash), return on assets (ROA), earnings volatility (σROA), and non-operating profit (NOP).

	DIV=0, SR=0			DIV=0, SR>0			DIV>0, SR=0			DIV>0, SR>0		
	Mean	Median	N	Mean	Median	N	Mean	Median	N	Mean	Median	N
MV	1.132,00	103	23.640	2.776,00	331	12.945	8.415,00	1052	7.985	16.710,00	3.132,00	11.326
Assets	39,8	2,35	23.640	74,7	9,93	12.945	338	28,4	7.985	549	77,1	11.326
MB	3,21	1,66	23.640	1,33	1,29	12.945	1,23	1,08	7.985	1,69	1,57	11.326
Cash	29,80%	6,95%	23.640	22,50%	5,29%	12.945	26,90%	3,61%	7.985	13,40%	2,93%	11.326
ROA	-15,80%	0,05%	23.640	-2,51%	1,79%	12.945	30,60%	3,60%	7.985	9,37%	3,76%	11.326
σROA	21,10%	3,10%	23.640	6,99%	1,59%	12.945	18,50%	1,57%	7.985	4,51%	1,08%	11.326
NOP	-20,70%	-0,80%	23.640	-5,22%	0,85%	12.945	27,20%	2,01%	7.985	6,60%	2,23%	11.326

Table 3

Transition Probabilities

Table 3 shows the transition probabilities of firms across four payout policy groups between two consecutive periods (T-1 to T): firms that neither pay dividends nor repurchase shares (DIV=0, SR=0), firms that only pay dividends (DIV>0, SR=0), firms that only engage in share repurchases (DIV=0, SR>0), and firms that combine both dividends and share repurchases (DIV>0, SR>0). Probabilities are expressed as percentages, representing the likelihood of firms either remaining in their current payout category or transitioning to a different one.

Recession periods in the analysis include the years 2001, 2008–2009, and 2020, based on officially recognized periods of economic contraction as defined by the National Bureau of Economic Research (NBER).

Panel A: Full Sample

		T			
		DIV=0, SR=0	DIV=0, SR>0	DIV>0, SR=0	DIV>0, SR>0
T-1	DIV=0, SR=0	83,89%	12,46%	2,55%	1,01%
	DIV>0, SR=0	30,22%	63,89%	1,31%	4,59%
	DIV=0, SR>0	5,40%	1,31%	70,14%	23,15%
	DIV>0, SR>0	1,35%	2,48%	21,94%	74,24%

Panel B: Recession Periods

		T			
		DIV=0, SR=0	DIV=0, SR>0	DIV>0, SR=0	DIV>0, SR>0
T-1	DIV=0, SR=0	83,70%	13,26%	2,40%	0,64%
	DIV>0, SR=0	34,64%	61,34%	1,15%	2,87%
	DIV=0, SR>0	7,55%	1,40%	70,63%	20,42%
	DIV>0, SR>0	2,41%	3,44%	31,54%	62,61%

Panel C: Non-Recession Periods

		T			
		DIV=0, SR=0	DIV=0, SR>0	DIV>0, SR=0	DIV>0, SR>0
T-1	DIV=0, SR=0	84,03%	12,31%	2,58%	1,08%
	DIV>0, SR=0	29,19%	64,48%	1,34%	4,99%
	DIV=0, SR>0	4,97%	1,30%	70,04%	23,69%
	DIV>0, SR>0	11,60%	2,29%	31,54%	74,24%

Table 4

Regression Results for Determinants of Dividend Forecast Error

Table 4 presents the results of a fixed-effects regression analyzing the determinants of Dividend Forecast Error (*DFE*) for the years 2010–2023. The coefficients used in the regression are derived from Lintner's (1956) model, calculated over the pre-forecast period (2000–2009). Only firms that continuously paid dividends during the pre-forecast period are included in the sample. Observations with extreme values of *DFE* (greater than 5% in absolute terms) are excluded to reduce the influence of outliers.

The independent variables include repurchase yield (RYIELD), firm size (Log(MV)), return on assets (ROA), earnings volatility (σROA), non-operating profit (NOP), free cash flow (FCF), and leverage (Lev). I apply a fixed-effects panel regression to account for time-invariant firm-specific characteristics. The focus is on the years 2010–2023, as the pre-forecast period (2000–2009) is used to estimate the parameters required for calculating the DFE. Significance levels are denoted by stars (* p<0.05, ** p<0.01, *** p<0.001), with standard errors reported in parentheses.

	Dependent Variable: *DFE*
Pre-Forecast Period	2000-2009
RYIELD	$-0{,}07001^{*}$ (0,041)
Log(MV)	$-0{,}03150^{***}$ (0,000)
ROA	$-0{,}00005$ (0,144)
σROA	$-0{,}00001$ (0,459)
NOP	$0{,}00006$ (0,065)
FCF	$-0{,}00001^{***}$ (0,000)
Lev	$0{,}00002$ (0,097)

Table 5

Regression Results for Determinants of Dividend Forecast Error During Recessions

Table 5 presents the results of a fixed-effects regression model analyzing the determinants of Dividend Forecast Error during recessionary periods. Since two of the three recessions (2008–2009 and 2020) fall within the forecast period, the regression focuses solely on the 2020 recession to ensure accurate analysis. A recession dummy variable is included in the model to isolate the effects of economic downturns on dividend forecast accuracy. Interaction terms between the recession dummy and firm-specific characteristicsare used to examine how these factors influence *DFE* specifically during periods of economic contraction.

The analysis leverages the same fixed-effects panel regression approach as in previous models, controlling for time-invariant firm-specific characteristics. Significant coefficients are denoted by asterisks (* p<0.05, ** p<0.01, *** p<0.001), and standard errors are reported in parentheses. The inclusion of interaction terms allows for a more nuanced understanding of the relationship between firm-specific factors and *DFE* under recessionary conditions.

	Dependent Variable: *DFE*
Pre-Forecast Period	2000-2009
Recession	0,02719*
	(0,027)
Recession*RYIELD	−0,11889
	(-0,119)
Recession*Log(MV)	−0,00374**
	(-0,004)
Recession*ROA	−0,00013
	(0.001)
Recession ∗ σROA	0,00062*
	(0,001)
Recession*NOP	0,00017
	(0,000)
Recession*FCF	0,00001
	(0,000)
Recession*Lev	−0,00008*
	(-0,001)

Figure 1
Time Trends in Corporate Payout Ratios relative to Earnings

Figure 1 shows the median Dividend-Earnings Ratio, Repurchase-Earnings Ratio, and Total-Payout Ratio for U.S. firms from 2000 to 2023, highlighting trends in corporate payout policies over time. The Dividend-Earnings Ratio was calculated as the ratio of dividends to earnings before extraordinary items, the Repurchase-Earnings Ratio as the ratio of share repurchases to earnings before extraordinary items, and the Total-Payout Ratio as the sum of dividends and share repurchases divided by earnings before extraordinary items. All values are based on firm-level medians to ensure robustness against outliers.

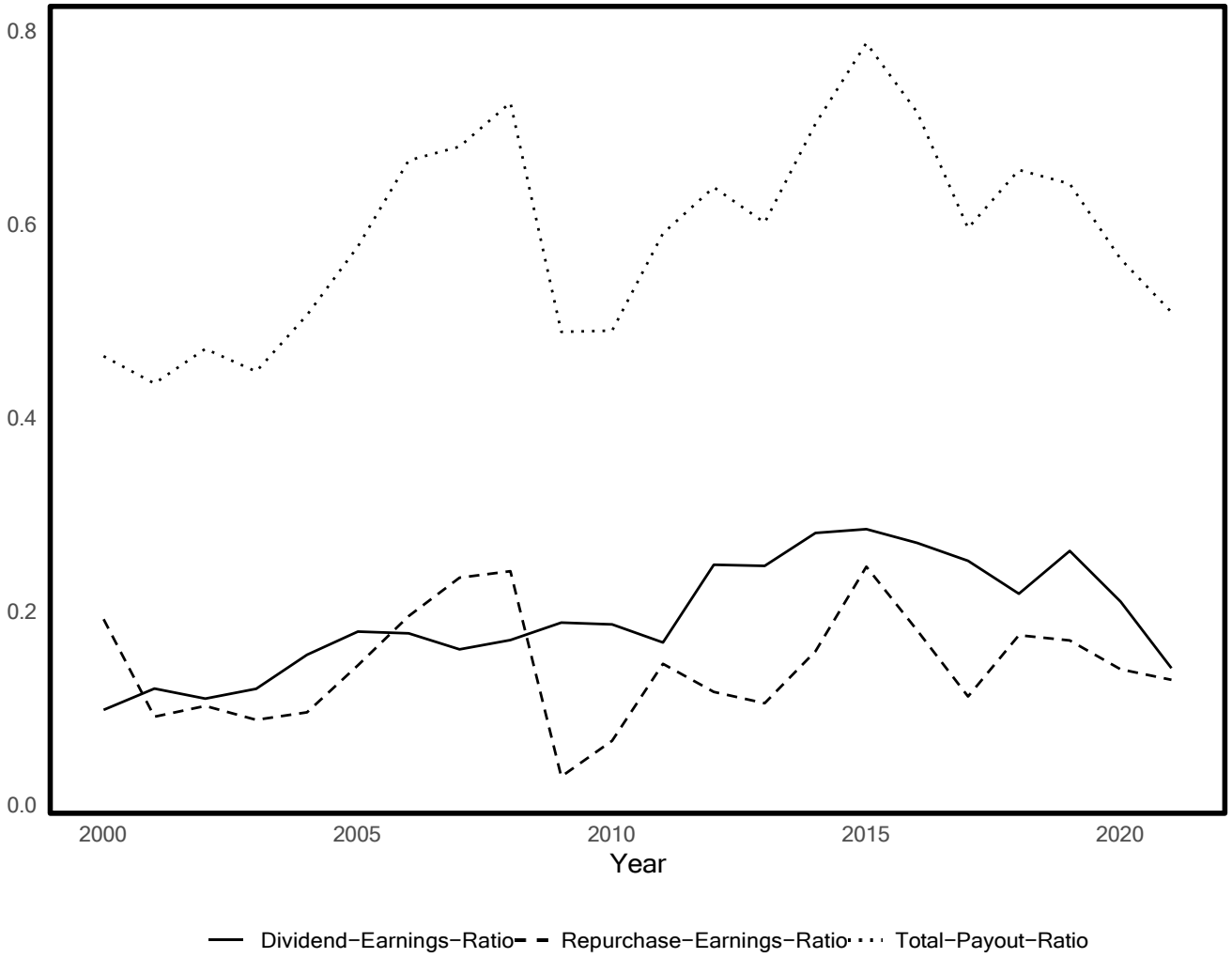

Figure 4
Proportion of Firms by Payout Method

Figure 2 illustrates the proportion of firms distributing cash to shareholders through three distinct payout methods: dividends only, share repurchases only, and a combination of dividends and share repurchases, from 2000 to 2023. The proportions are calculated based on the total number of firms that distributed cash in each year. Only firms with non-zero payouts (dividends or share repurchases) are included, and the percentages reflect the relative share of each payout method within this group. The data highlights trends in corporate payout strategies, showing the decline in firms using dividends exclusively, the growth in firms engaging in both dividends and share repurchases, and the relative stability of firms relying solely on share repurchases over time.