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The effect of modern information technology on corporate payout policy. Evidence from EDGAR implementation

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Abstract

Purpose – This study uses the Electronic Data Gathering Analysis and Retrieval (EDGAR) implementation as an information shock to examine its effect on corporate payout policy.

Design/methodology/approach – This study uses a generalized difference-in-differences approach to assess the causal impact of EDGAR implementation on the US publicly traded firms' payout policy for a period from 1990 to 1999. The approach captures the difference between changes in the dividend policy of firms subjected to EDGAR implementation (treated firms) and those not subjected to the implementation (control firms).

Findings – Firms increase payout ratios and the likelihood of paying dividends after the implementation of EDGAR. Notably, these effects are more pronounced in firms characterized by high agency problems ex-ante.

Practical implications – Policies designed to improve a firm's information environment may yield divergent effects on corporate payout policy. Consequently, in countries aiming to promote cash dividends, policymakers seeking to enhance the firm information environment should carefully consider initiatives that will improve minority investors' access to corporate information.

Originality/value – The findings contribute to the real effects of EDGAR implementation on firm policies, addressing the ambiguity surrounding the economic consequences of EDGAR adoption. This paper also contributes to the existing literature on the impact of information shock on corporate payouts. The findings emphasize the multifaceted influence of information shock on corporate payouts.

Keywords Payout policy, EDGAR, Corporate governance

Paper type Research paper

1. Introduction

Modern information technology has changed the way investors process information. Among these advancements, the implementation of the Electronic Data Gathering Analysis and Retrieval (EDGAR) represents a noteworthy technological improvement. Implemented in 1993, EDGAR has made firms' reports accessible on the Internet. Prior to the implementation of EDGAR (henceforth referred to as just EDGAR), the SEC required all SEC-registered firms to submit paper copies of corporate filings. The copies were stored in the SEC's public reference rooms in Washington D.C., New York, and Chicago. Since investors must either subscribe to a commercial data vendor or visit a public reference room in person, access to firm disclosures presents significant challenges. By facilitating access to corporate filings through the Internet, EDGAR substantially mitigates the cost of obtaining firm information, resulting in increased external monitoring.

The augmentation of corporate monitoring resulting from EDGAR may yield divergent effects on corporate payout policy. La Porta *et al.* (2000) proposed the outcome and the substitution model. The outcome hypothesis asserts that dividend distribution is primarily driven by the demands and pressures exerted by minority shareholders. These pressures compel firms to release surplus cash reserves through dividend payments. According to this

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hypothesis, firms with better governance structures tend to distribute more dividends (Jensen, 1986; La Porta *et al.*, 2000; Adjaoud and Ben-Amar, 2010; Chintrakarn *et al.*, 2022). In this context, EDGAR is anticipated to lead to increased dividend payments. Conversely, the substitution model posits that governance quality should be a substitute for dividend payments. Under this framework, firms engage in dividend payments to cultivate a favorable reputation, thereby enhancing their ability to raise capital. Accordingly, firms characterized by strong corporate governance, such as those facilitated by EDGAR, may opt to decrease dividends.

Employing a difference-in-difference research design, we find that EDGAR leads firms to increase payout ratios and the propensity to pay dividends. Importantly, we do not observe a significant change in dividend policy before EDGAR, thereby validating our parallel trend assumption underlying the difference-in-difference analysis.

In order to mitigate the potential influence of unobserved firm characteristics, we implement match-sample analyses. Specifically, we pair firms that adopted EDGAR implementation (treated firms) with those that have yet to experience the implementation (control firms). By creating this matched sample, this study aims to create a more balanced comparison between the treated and control groups. Subsequently, we rerun the estimations using the matched sample to reevaluate the results. Importantly, our findings continue to demonstrate robustness even after incorporating match-sample analyses.

Finally, we delve into cross-sectional analyses to investigate the channel. We argue that if EDGAR's positive effect on corporate payout is due to mitigating agency problems, this effect should be particularly pronounced in firms with high agency problems prior to EDGAR. We find evidence that supports this conjecture. The effect of EDGAR on firm payout policies is particularly pronounced in firms with high bid-ask spreads and low institutional ownership, ex-ante. Overall, these findings demonstrate that EDGAR leads to enhanced corporate monitoring, resulting in higher dividend payouts.

Our study helps to fill several gaps in the literature. First, the existing literature studies the real effect of EDGAR on various corporate policies, yet its economic impact remains ambiguous. On the one hand, EDGAR contributes to increased external monitoring, resulting in better investment efficiency and productivity (Goldstein *et al.*, 2023; Lai *et al.*, 2024; Liu and Zhang, 2023). On the other hand, EDGAR decreases stock price informativeness (Bird *et al.*, 2021), reducing firms' acquisition activities (Gu *et al.*, 2022). Our study contributes to this literature by examining the influence of EDGAR on corporate dividend policy. Through this research, we seek to provide a more nuanced understanding of how EDGAR shapes corporate financial strategies.

In addition, the influence of information shock on corporate payout policy is not conclusive in prior literature. For instance, Hail *et al.* (2014) investigate the impact of International Financial Reporting Standards (IRFS) adoption and find a negative effect on dividend payments. In contrast, Harakeh *et al.* (2019) find an increase in dividend payouts after IRFS adoption. Given these mixed findings, exploring additional information shock events, such as EDGAR, is crucial to better understand their impact on corporate payouts.

The rest of this paper is organized as follows. Section 2 presents a literature review and hypothesis development. Section 3 describes our empirical methodology and data. Section 4 reports the empirical results, and we conclude with Section 5.

2. Institutional background and literature review

2.1 The real effect of EDGAR implementation

Starting on February 23, 1993, the SEC released the phase-in schedule for the mandatory implementation of the EDGAR system (SEC Release No. 33–6,977). In this schedule, the SEC divided all SEC-registered firms into 10 groups and required each group to submit corporate filings electronically through the EDGAR system after the respective implementation date. The first group (CF-01) was mandated to file electronically in April 1993, while the final group (CF-10) began electronic filing in May 1996.

In recent years, extensive research has delved into the real effect of EDGAR on various corporate policies. The adoption of EDGAR presents both positive and negative consequences. On the positive side, EDGAR reduces the cost of acquiring firms' information, thereby fostering stock liquidity and diminishing monitoring costs for corporate outsiders. Consequently, EDGAR contributes to reducing the cost of equity capital (Lai *et al.*, 2024). Additionally, EDGAR can increase monitoring efficiency, leading to higher investment efficiency (Goldstein *et al.*, 2023; Lai *et al.*, 2024; Liu and Zhang, 2023). Conversely, the abundance of data from EDGAR may intensify competition among speculators (Dugast and Foucault, 2023). This increased competition has the potential to crowd out private information and diminish stock price informativeness (Bird *et al.*, 2021), negatively impacting the effectiveness of managerial decisions (Chen *et al.*, 2007). In line with the crowd-out hypotheses, Gu *et al.* (2022) find that firms reduce acquisition activities and experience more negative abnormal returns around the merger and acquisition announcement date following the adoption of EDGAR. Furthermore, to the extent that EDGAR increases market reactions to company disclosures, managers are more likely to hoard bad news, leading to a higher stock price crash risk (Ni *et al.*, 2021).

2.2 Corporate payout policy

The mystery surrounding the decisions to pay dividends traces back to the seminal work of Miller and Modigliani (1961). Financial economists have presented a variety of explanations for the existence and popularity of dividends, such as tax preference (Poterba and Summers, 1984) and signaling (Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985). Another prominent explanation is the agency costs (Easterbrook, 1984; Jensen, 1986). Agency costs represent a significant market inefficiency wherein managers may prioritize personal gains over shareholder interests (Jensen, 1986). Under this framework, managers are reluctant to pay dividends and invest the cash flow in value-destroying projects for private benefits. Thus, better corporate governance leads to higher dividend payments. Several empirical studies support the agency-based explanation. For instance, Bae *et al.* (2021) investigate the impact of board reforms on corporate dividend policy and find that firms pay higher dividends following the reforms. Chintrakarn *et al.* (2022) find that firms are more likely to pay dividends after the passage of Sarbanes-Oxley Act, which mandates firms to have a majority of independent directors.

The conflict of interest between major and minority shareholders is also an important determinant of dividend payouts. La Porta *et al.* (2000) observed that minority shareholders are paid lower dividends in countries with poor investor protection. Gugler and Yurtoglu (2003) delved into the conflict of interest between the large, controlling owners and small, outside shareholders in the context of corporate payouts. Their findings suggest that dividends mitigate rent extraction from large shareholders. Consequently, enhancing minority investor monitoring could pressure managers to increase dividend payouts. Aligned with these insights, Lin *et al.* (2023) discover that firms are inclined to offer higher cash dividends when minority shareholders vote against dividend proposals.

Collectively, the literature underscores the importance of monitoring, especially by minority shareholders, in driving increased dividend payments.

2.3 Information shock and payout policy

Information shock can induce diverse effects on corporate payout policy. Information shock can enhance corporate monitoring by reducing the cost of accessing firm information.

According to La Porta *et al.*'s (2000) substitute model, heightened monitoring mitigates the necessity for dividend payouts. In line with this theoretical framework, Hail *et al.* (2014) use IRSF as an information shock and examine its influence on firm payout policy across 49 countries around the world. Their study reveals that firms decrease dividend payments after adopting IRSF. However, Harakeh *et al.* (2019) suggest that these outcomes may be subjected to confounding factors, particularly non-comparability issues between control and treatment groups. Focusing on a restricted sample comprising firms from the U.K. and France, Harakeh *et al.* (2019) find that IRSF adoption leads to an upswing in dividend payments, aligning with the outcome model (La Porta *et al.*, 2000). Consistent with Harakeh *et al.* (2019), Koo *et al.* (2017) investigate firm dividend policy associated with the SEC mandate to increase the frequency of financial reporting [1]. Their empirical findings highlight a positive association between an improved firm information environment and payout ratios.

Nonetheless, EDGAR diverges significantly from IRSF. While IFRS facilitates institutional investors' access to firm information, leading to an increase in institutional holdings (Florou and Pope, 2012), EDGAR is universally accessible, making firm information available to all investors, especially minority investors. Likewise, before EDGAR, minority investors encountered considerable obstacles in accessing firm financial statements. Consequently, the SEC mandate to increase the frequency of financial reports did not yield substantial benefits for minority shareholders. Given the advantages of EDGAR to minority shareholders and the crucial role of minority shareholders in driving dividend payouts, we formulate our first hypothesis as follows:

H1. Firms increase dividend payout ratios and the likelihood of paying dividends after the implementation of EDGAR.

Information asymmetry plays a crucial role in shaping corporate payout decisions, particularly through the lens of the free cash flow channel. According to Jensen (1986), managers may exploit information asymmetry to retain excessive cash within the firm rather than distributing it to shareholders as dividends, thereby maximizing their personal benefits. However, when shareholders possess enhanced monitoring capabilities, managers face heightened pressure to allocate profits as dividends, thus mitigating the risk of managerial wealth expropriation.

The implementation of EDGAR reduces monitoring costs and bolsters overall monitoring effectiveness. Consequently, we posit that the impact of EDGAR on corporate payout policies may be particularly pronounced in firms characterized by high levels of information asymmetry ex-ante. As a result, we formulate our second hypothesis as follows:

H2. The positive effect of EDGAR on dividend payout ratios and the likelihood of paying dividends is particularly pronounced in firms characterized by high levels of information asymmetry ex-ante.

The current body of literature suggests that institutional ownership is associated with enhanced monitoring and decreased agency costs (Chung and Zhang, 2011; Luong *et al.*, 2017). As a result, institutional shareholders exert pressure on firms to increase dividend payouts as a mechanism to reduce the potential for managerial expropriation of free cash flows (Crane *et al.*, 2016). Building on this body of literature, we propose that the impact of the EDGAR on firm dividend policy may vary depending on the level of institutional ownership. Specifically, we hypothesize that the effect of EDGAR on dividend policy is likely to be more pronounced in firms with low institutional ownership prior to its implementation. This is because firms with lower levels of institutional ownership initially undergo less rigorous monitoring, thus the improved monitoring brought about by EDGAR would have a greater relative impact on reducing agency costs. In light of these considerations, we formulate our third hypothesis as follows:

H3. The positive effect of EDGAR on dividend payout ratios and the likelihood of paying dividends is particularly pronounced in firms characterized by low levels of institutional ownership ex-ante.

3. Data and methodology

3.1 Data

We initially obtain a list of US publicly traded firms from one of the ten groups outlined in SEC Release No. 33–6,977. This list includes the firm name, the Central Index Key (CIK), and the phase-in group number (ranging from 1 to 10). Table 1 outlines the phase-in schedule for EDGAR. We match these firms to the Compustat data using the CIK. The sample is confined to the period between 1990 and 1999, spanning three years before the start of EDGAR and three years following its completion. Financial (SIC 6,000–6,999) and utility firms (SIC 4,900–4,999) are excluded from the sample. The final sample comprises 35,650 firm-year observations of 4,915 unique firms (see Table 2).

3.2 Dividend payouts and control variables

Following the prior literature (Bae *et al.*, 2021; Kim *et al.*, 2021; Do, 2022), we use two main measures of dividend payout. The first measure, the payout ratio (*DVC/AT*), is the cash dividend declared on common/ordinary shares divided by total assets, multiplied by 100. The second measure is the likelihood of payouts (*payer*). This binary variable takes a value of 1 when a firm declares cash dividends on common/ordinary shares and 0 otherwise.

We control for a set of firm characteristics affecting corporate payouts, including firm size, market-to-book ratio, leverage, profitability (ROA), cash ratio, R&D ratio, capital expenditure, property, plant, and equipment, firm age, and an indicator of whether firms paid dividends in the previous year. All continuous variables are winsorized at the 1st and 99th percentiles to limit the impact of outliers. Appendix provides a detailed definition of the variables used in this study.

3.3 Methodology

As the implementation of EDGAR was phased across ten groups from 1993 to 1996, we employ a generalized difference-in-differences approach to assess the causal impact of EDGAR implementation on the payout ratio (e.g. Goldstein *et al.*, 2023). Specifically, we estimate the following model:

Table 1.
The phase-in schedule of the EDGAR implementation

Group	Mandatory date
CF-01	04/26/93
CF-02	07/19/93
CF-03	10/04/93
CF-04	12/06/93
CF-05	08/01/94
CF-06	11/01/94
CF-07	05/01/95
CF-08	08/01/95
CF-09	11/01/95
CF-10	05/01/96

Note(s): The table reports The phase-in schedule of the EDGAR implementation
Source(s): SEC Release No. 33–6,977

Variable	N	Mean	St.d	P25	P50	P75
DVC/AT	35,650	0.829	3.311	0	0	0.579
DVC/S	35,006	0.964	2.467	0	0	0.828
DVC/ME	35,543	0.853	1.665	0	0	1.225
Payer	35,650	0.336	0.472	0	0	1
Post-Edgar	35,650	0.489	0.499	0	0	1
Size	35,650	4.519	2.265	2.907	4.459	6.088
MB	35,650	2.661	5.272	0.944	1.703	3.102
LEV	35,650	0.257	0.277	0.051	0.201	0.371
ROA	35,650	0.038	0.289	0.021	0.104	0.169
Cash	35,650	0.142	0.188	0.019	0.062	0.184
PPE	35,650	0.282	0.231	0.097	0.222	0.409
R&D	35,650	0.039	0.076	0	0	0.042
Capex	35,650	0.058	0.061	0.017	0.040	0.077
Age	35,650	2.603	0.729	2.079	2.565	3.219

Note(s): This table presents summary statistics of the variables in our study for the sample period 1990–1999. Variable definitions are in Appendix
Source(s): Authors own work

Table 2.
Summarized statistics

$$DIV\Big/A_{i,t} = \beta_0 + \beta_1\, Post\_Edgar_{i,t} + Controls_{i,t} + Firm\,Fixed\,Effect + Year\,Fixed\,Effect + \varepsilon_{i,t} \quad (1)$$

where $DIV/A_{i,t}$ is the ratio of cash dividends declared on common/ordinary shares (DVC) to total assets (AT). We define the first partial year when a firm electronically filed to the SEC as the EDGAR-adoption year. Subsequently, we refer to the following year as the first year in the post-EDGAR period. As such, $Post\text{-}Edgar_{i,t}$, takes a value of one for firm-years in the post-EDGAR period and zero otherwise. Our main coefficient of interest is β1, which captures the difference between changes in the dividend ratio of firms subjected to EDGAR implementation (treated firms) and those not subjected to the implementation (control firms). Firm fixed effect and year fixed effect are included in our regression. Finally, the standard errors are clustered at the firm level.

To examine the influence of EDGAR on the likelihood of paying dividends, we estimate the following model:

$$Payer_{i,t} = \beta_0 + \beta_1\, Post\_Edgar_{i,t} + Controls_{i,t} + Firm\,Fixed\,Effect + Year\,Fixed\,Effect + \varepsilon_{i,t} \quad (2)$$

where *payer* is a dummy, taking a value of 1 if firm i pays dividends to its common/ordinary shareholders in year t, and 0 otherwise. Other variables are defined in the same way as above.

3.4 Summarized statistics

Table 1 reports the summarized statistics of the final sample. *Post-Edgar* has a mean value of 0.489, consistent with prior studies (Gu *et al.*, 2022; Liu and Zhang, 2023). The payout ratio (*DVC/AT*) has a mean of 0.83 and a standard deviation of 3.31. Approximately 33.6% of sample firms pay dividends. An average firm in our sample has a log of total assets of 4.52, a market-to-book ratio of 2.66, a leverage ratio of 0.26, a return on assets (ROA) of 0.04, a cash ratio of 0.14, a PPE ratio of 0.28, an R&D expenditure ratio of 0.04, a capital expenditure ratio of 0.06, and a log of firm age of 2.60.

4. Empirical results

4.1 The effect of EDGAR on payout ratio

The analyses begin by studying the effect of EDGAR adoption on the payout ratio. Table 3 presents the results from the estimating model (1). In Column 1, where no control variables are included, we observe a positive and statistically significant coefficient on *Post-Edgar* (p-value = 0.012). In Column 2, with the incorporation of control variables, the coefficient for *Post-Edgar* remains positive and significant (p-value = 0.031). These findings suggest that firms increase the payout ratio following the implementation of EDGAR. In economic terms, implementing EDGAR increases the payout ratio by 15% (0.121/0.829). This magnitude is of economic significance compared with other recent studies (e.g. Bae *et al.*, 2021).

To account for the possibility that omitted time-invariant firm characteristics may influence payout ratios, we include firm fixed effect in our analysis. This results in a high adjusted R-squared value. The adjusted R-squared value indicates that 40.37% of the total variability of the payout ratio is explained by the model, aligning with previous research (e.g. Bae *et al.*, 2021; Chintrakarn *et al.*, 2022). We conduct several analyses to ensure the robustness of our results. Firstly, we restrict our sample to firms with at least 10 million dollars in total assets to ensure small firms do not drive our results. Secondly, we use random-effect regression analyses. Lastly, we include additional control variables to address concerns about omitted variables. The results of these analyses are presented in Columns 3 to 5 of Table 3, respectively. Overall, these analyses indicate a positive correlation between EDGAR and the payout ratio, confirming the robustness of our findings.

	DVC/AT (1)	DVC/AT (2)	DVC/AT (3)	DVC/AT (4)	DVC/AT (5)
Post-Edgar	0.148** [0.012]	0.121** [0.031]	0.185*** [0.001]	0.211*** [0.000]	0.124** [0.028]
Size		−0.124 [0.161]	−0.149 [0.126]	0.024 [0.371]	−0.137 [0.152]
MB		0.004 [0.158]	0.011* [0.091]	0.009*** [0.002]	0.004 [0.172]
Lev		−0.215 [0.116]	−0.186 [0.538]	−0.276** [0.041]	−0.122 [0.457]
ROA		0.362* [0.063]	1.347*** [0.000]	0.369** [0.022]	0.282 [0.152]
Cash		0.605*** [0.004]	0.415* [0.082]	0.868*** [0.000]	0.599*** [0.004]
Capex		0.109 [0.459]	−0.055 [0.855]	−0.113 [0.457]	0.113 [0.459]
R&D		−0.275 [0.701]	1.536** [0.012]	−0.831* [0.072]	−0.332 [0.648]
PPE		−0.548 [0.169]	−0.124 [0.740]	0.458*** [0.006]	−0.571 [0.170]
Age		0.219 [0.221]	−0.019 [0.914]	0.355*** [0.000]	0.258 [0.201]
RE/A					0.031 [0.237]
TE/A					0.022 [0.775]
XAD/A					0.623 [0.324]
Repurchase/ AT					0.017 [0.727]
Firm FE	Yes	Yes	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
N	35,650	35,650	29,987	35,650	35,224
Adjusted R^2	39.73%	40.37%	42.76%	42.53%	40.38%

Note(s): This table reports the results for the effect of the EDGAR adoption on the payout ratio. Variable definitions are in Appendix. p-values are in parentheses and clustered at the firm level. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively
Source(s): Authors own work

Table 3. The effect of the EDGAR adoption on the payout ratio

Regarding the influence of control variables on dividend policy, we find that the payout ratio increases with firm profitability, and cash holdings. These findings are consistent with the prior literature (Bae *et al.*, 2021; Kim *et al.*, 2021; Do, 2022).

To enhance the robustness of our findings, we conduct sensitivity analyses by substituting our primary variable with alternative measures of dividend ratios. These alternative measures include *DIV/S*, representing the ratio of cash dividends to total sales (Sale), and *DIV/ME*, reflecting the ratio of cash dividends to the market value of equity (CSHO*PRCC_F). The results of these analyses are presented in Table 4. Across all alternative dividend payout measures, the coefficient of *Post-Edgar* is consistently positive and statistically significant. This consistency across various dividend payout metrics reinforces the robustness of the results, affirming the positive impact of EDGAR implementation on corporate dividend payments.

4.2 The effect of EDGAR on the likelihood of paying dividends

Next, we investigate the effect of EDGAR on the likelihood of paying dividends. The results from the estimating model (2) are presented in Table 5. The coefficient on *Post-Edgar* is positive and significant at the 5% level, indicating that firms subjected to EDGAR implementation exhibit an increased likelihood of paying dividends. This finding aligns with the positive correlation between EDGAR implementation and the payout ratios presented in Tables 3 and 4

In general, the results in Tables 3–5 are consistent with the outcome model (La Porta *et al.* (2000)). EDGAR enhances corporate governance, which results in higher dividend payouts and a higher propensity to pay dividends.

4.3 Dynamic timing test

The validity of the main results presented in Tables 3 and 5 depends on the parallel trend assumption, implying the absence of pretreatment trends in changes in dividend policy between the treatment and control groups. To perform the dynamic timing test, we substitute

	DVC/S (1)	DVC/ME (2)
Post-Edgar	0.057*** [0.004]	0.041** [0.033]
Size	0.016 [0.351]	0.075*** [0.000]
MB	0.002 [0.111]	−0.006*** [0.000]
Lev	−0.167*** [0.000]	−0.038 [0.267]
ROA	0.024 [0.550]	0.167*** [0.000]
Cash	0.359*** [0.000]	0.093* [0.071]
Capex	0.073 [0.340]	−0.007 [0.880]
R&D	0.102 [0.593]	0.0012 [0.930]
PPE	0.053 [0.561]	0.207*** [0.005]
Age	0.043 [0.493]	0.237*** [0.000]
Firm FE	Yes	Yes
Year FE	Yes	Yes
N	35,006	35,543
Adjusted R^2	83.38%	70.45%

Note(s): This table reports the results for the effect of the EDGAR adoption on the payout ratio, using alternative measures of payout ratios. Variable definitions are in Appendix. *p*-values are in parentheses and clustered at the firm level. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively
Source(s): Authors own work

Table 4. Alternative measure of dividend ratio

	Payer (1)	Payer (2)
Post-Edgar	0.009** [0.044]	0.010** [0.024]
Size		0.014*** [0.000]
MB		0.001* [0.056]
Lev		−0.041*** [0.000]
ROA		0.011* [0.058]
Cash		0.018 [0.140]
Capex		0.052*** [0.005]
R&D		0.022 [0.507]
PPE		−0.019 [0.243]
Age		0.019* [0.075]
Firm FE	Yes	Yes
Year FE	Yes	Yes
N	35,650	35,650
Adjusted R^2	84.30%	84.44%

Note(s): This table reports the results for the effect of the EDGAR adoption on the likelihood of paying dividends. Variable definitions are in Appendix. *p*-values are in parentheses and clustered at the firm level. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively
Source(s): Authors own work

Table 5.
The effect of EDGAR adoption on the likelihood of paying dividends

Post-Edgar with the following dummy variables: $Edgar^{-2}$, $Edgar^{-1}$, $Edgar^{0}$, $Edgar^{+1}$, $Edgar^{+2}$, $Edgar^{3+}$, indicating the number of years before and after the EDGAR implementation. These variables are used to re-estimate regressions 1 and 2, and the results are presented in Table 5. The benchmark period includes all years before the EDGAR implementation year – 2. In column 1, we report the results with the payout ratio (*DIV/A*) as the main dependent variable. The coefficients of pre-EDGAR variables (i.e. Edgar^{-2}, Edgar^{-1}, Edgar^{0}) are not significant. In contrast, the coefficients of post-EDGAR variables (i.e. Edgar^{+1}, Edgar^{+2}, Edgar^{3+}) are positive and significant.

Similarly, in Column 2, where the likelihood of paying dividends is used as the main dependent variable, the coefficients on pre-EDGAR variables are not statistically significant. In contrast, the coefficients on post-EDGAR variables are positive and significant. Taken together, the results in Table 6 suggest that the effect of EDGAR on corporate payout policy emerges after, but not before, the implementation, validating our difference-in-difference design.

4.4 Matched sample analyses

An additional concern regarding the validity of our baseline results is the possibility of differences in various attributes among the SEC-assigned groups, which could influence the relationship between EDGAR implementation and corporate payout policy. For example, Chang *et al.* (2023) suggest that “the wave assignments were randomized conditional on firm size”. As a result, we employ matched sample analyses to mitigate the possibility that omitted firm characteristics may drive our results. It is noteworthy that since the SEC divided firms into 10 groups with different implementation dates, overlapping is possible. For example, a treated firm in one event could be a control firm in another event. To address the possibility of overlapping, we use a stack-cohort approach (Gu *et al.*, 2022; Ni *et al.*, 2021).

We start our analyses by assembling treated and control samples. For each cohort, we include the data for 2 years before and 2 years after the EDGAR implementation year (year t). Treated firms are those subjected to the implementation of EDGAR in year t, and control firms are those not subjected to the EDGAR implementation during the 5-year windows.

	DVC/AT (1)	Payer (2)
$Edgar^{-2}$	0.011 [0.869]	0.005 [0.370]
$Edgar^{-1}$	0.113 [0.252]	0.012 [0.180]
$Edgar^{0}$	0.183 [0.143]	0.016 [0.125]
$Edgar^{+1}$	0.336** [0.031]	0.031** [0.030]
$Edgar^{+2}$	0.506** [0.013]	0.033** [0.038]
$Edgar^{3+}$	0.667*** [0.006]	0.041** [0.019]
Size	−0.128 [0.153]	0.014*** [0.000]
MB	0.004 [0.117]	0.001* [0.053]
Lev	−0.198 [0.269]	−0.041*** [0.000]
ROA	0.364* [0.062]	0.011 [0.133]
Cash	0.596*** [0.005]	0.017 [0.152]
Capex	0.104 [0.483]	0.052*** [0.006]
R&D	−0.256 [0.750]	0.023 [0.484]
PPE	−0.551 [0.166]	0.019 [0.249]
Age	0.241 [0.201]	0.017 [0.126]
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
N	35,650	35,650
Adjusted R^2	40.39%	84.44%

Note(s): This table presents the results of the parallel trend test. Variable definitions are in Appendix. *p*-values are in parentheses and clustered at the firm level. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively
Source(s): Authors own work

Table 6.
Parallel trend test

Moreover, we use propensity score matching to match (with replacement) control and treated firms based on size and market-to-book ratio in year t-1. Subsequently, we stack treatment and control firms to create the propensity score-matched sample and re-estimate models (1) and (2).

Table 7 reports the results. Consistent with our main results in Tables 3 and 5, we find that firms significantly increase dividend ratios (Column 1) and are more likely to pay dividends after EDGAR implementation (Column 2). The findings in Table 7 indicate that our main results are not driven by omitted firm variables, enhancing the validity of our main analyses.

4.5 Cross-sessional analyses

4.5.1 Information asymmetry. This section empirically test H2. More specifically, we examine the differential effects of EDGAR adoption on corporate payout policies across varying levels of information asymmetry. Building upon prior literature, we employ the bid-ask spread as a proxy for information asymmetry (Cho *et al.*, 2013). The bid-ask spread is calculated by annually averaging the ratio of the daily bid-ask spread to the closing price from the CRSP daily stock file. Utilizing the propensity score-matched sample in the prior analysis, we divide firms into subsamples based on the median bid-ask spread, and re-estimate model (1) and (2).

Panel A of Table 8 presents the findings of our analysis. Columns 1 and 2 report the results for the payout ratio. Our analysis indicates that firms characterized by a high ex-ante bid-ask spread are associated with higher payout ratios after the implementation of EDGAR. Similarly, in Columns 3 and 4, our findings indicate that the heightened propensity to distribute dividends is concentrated among firms with a high ex-ante bid-ask spread. Consistent with our conjecture from H2, these results suggest that the impact of EDGAR implementation on corporate payout policies is particularly salient in firms facing heightened levels of information asymmetry before adopting the electronic filing system.

	DVC/AT (1)	Payer (2)
Post-Edgar	0.105** [0.033]	0.007*** [0.003]
Size	−0.073 [0.152]	0.039*** [0.000]
MB	0.021 [0.115]	0.001 [0.135]
Lev	−0.023 [0.879]	−0.133*** [0.000]
ROA	0.116 [0.496]	0.023 [0.632]
Cash	0.677** [0.046]	−0.031 [0.511]
Capex	−0.082 [0.897]	0.137*** [0.029]
R&D	−0.075 [0.956]	0.301* [0.068]
PPE	−0.836 [0.342]	0.148** [0.012]
Age	0.209 [0.675]	0.015** [0.596]
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
N	12,294	12,294
Adjusted R^2	40.41%	83.13%

Note(s): This table reports the results for the effect of the EDGAR adoption on corporate payout policy, using the matched sample. Variable definitions are in Appendix. p-values are in parentheses and clustered at the firm level. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively
Source(s): Authors own work

Table 7.
The baseline test using the matched sample

	DVC/AT		Payer	
	High bid-ask spread (1)	Low bid-ask spread (2)	High bid-ask spread (3)	Low bid-ask spread (4)
Panel A: Bid-ask spread				
Post-Edgar	0.143** [0.026]	0.015 [0.755]	0.008** [0.011]	0.005 [0.267]
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	6,127	6,145	6,127	6,145
Adjusted R^2	30.76%	48.44%	78.61%	86.60%

	DVC/AT		Payer	
	High institutional ownership (1)	Low institutional ownership (2)	High institutional ownership (3)	Low institutional ownership (4)
Panel B: Institutional ownership				
Post-Edgar	0.004 [0.935]	0.174*** [0.010]	0.001 [0.955]	0.011*** [0.001]
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	6,149	6,145	6,149	6,145
Adjusted R^2	59.47%	31.83%	82.76%	80.87%

Note(s): This table presents the cross-sessional analyses on the effect of the EDGAR adoption on corporate payout policy. Variable definitions are in Appendix. p-values are in parentheses and clustered at the firm level. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively
Source(s): Authors own work

Table 8.
Cross-sessional analyses

4.5.2 Institutional ownership. Finally, we investigate the influence of institutional ownership on the relationship between EDGAR and corporate payout policies. Panel B of Table 8 provides our empirical findings. In alignment with our conjecture from H3, our analysis indicates that firms with low institutional ownership ex-ante display significantly higher payout ratios and an increased likelihood of paying dividends following the implementation of EDGAR. These results indicate that the impact of EDGAR on corporate dividend policies is accentuated in firms with ex-ante limited institutional ownership, where the pressure exerted by institutional investors to enhance dividend payouts may be relatively muted.

In general, the findings in Table 8 indicate that EDGAR enhances external monitoring, thereby exerting pressure on managers to increase dividend payouts.

5. Conclusions

This paper studies the impact of EDGAR on corporate payout policy. The advancement in corporate monitoring resulting from EDGAR may yield divergent effects on corporate payouts. The outcome hypothesis predicts that EDGAR increases dividend payments, while the substitution hypothesis suggests that firms may opt to reduce dividend payments. This study offers causal evidence indicating that EDGAR is associated with a substantial increase in dividend payouts. Moreover, the impact of EDGAR implementation on dividend payout is particularly pronounced in firms with high agency problems before the implementation. Consequently, we may conclude that EDGAR enhances the monitoring capabilities of minority shareholders, thereby exerting pressure on managers to increase dividend payments.

This paper makes two significant contributions to the literature. First, it enriches the literature on the real effects of EDGAR on firm policies, addressing the ambiguity surrounding its economic consequences. While the EDGAR implementation has been associated with increased firm investment efficiency (Goldstein *et al.*, 2023; Liu and Zhang, 2023) and reduced cost of capital (Lai *et al.*, 2024), it has also been associated with an increase in bad news hoarding (Ni *et al.*, 2021), and a decrease in firm acquisitions (Gu *et al.*, 2022). This study provides evidence that EDGAR positively influences corporate payouts, potentially serving as a mechanism for mitigating agency problems. Further, to the extent that EDGAR significantly facilitates information access for minority investors, our findings suggest that the positive impact of EDGAR may contribute to the monitoring role of minority investors.

Second, the paper contributes to the broader literature exploring the impact of information shock on corporate payouts. Previous studies have investigated how information shock influences corporate dividend policy, yielding mixed conclusions (Hail *et al.*, 2014; Harakeh *et al.*, 2019). Our findings suggest that companies raise dividend payouts following information shocks, aligning with the results of Harakeh *et al.* (2019).

A limitation of our research is that our sample is confined to publicly traded firms in the United States. Future research endeavors could address this limitation by examining the effect of modern information technology on corporate payout policy in various countries, particularly in those with capital markets that differ significantly from the U.S market (e.g. French civil law countries (La Porta *et al.*, 1997)). These studies can help to enhance the generalizability of findings. Another limitation of our study is the sample period from 1990 to 1999. However, with the advent of FinTech innovations, particularly in big data and machine learning techniques, investors now have access to substantial amounts of data at relatively low costs (Goldstein *et al.*, 2019). Thus, our paper provides preliminary evidence on how modern information technology influences corporate payout policies. Future research endeavors should, therefore, leverage recent advancements in information technology to investigate their impact on various corporate policies.

Given that low dividend payouts can harm the interests of minority shareholders by exacerbating the free cash flow problem (Jensen, 1986) and increasing the risk of expropriation (La Porta *et al.*, 2000), several emerging economies have implemented regulations to protect minority shareholders (Martins and Novaes, 2012; Lin *et al.*, 2023). Our findings suggest that policymakers should consider initiatives aimed at enhancing minority investors' access to firm information. These initiatives can empower minority shareholders, reduce agency conflicts, and promote more efficient corporate governance practices.

Notes

1. SEC mandated firms that switched from annual to semiannual reporting after 1954 or from semiannual to quarterly reporting after 1967.

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Appendix

DVC/AT	The ratio of cash dividends declared on common/ordinary shares (DVC) to total assets (AT), multiplied by 100
DVC/S	The ratio of cash dividends declared on common/ordinary shares (DVC) to total sales (SALE), multiplied by 100
DVC/ME	The ratio of cash dividends declared on common/ordinary shares (DVC) to the market value of equity (PRCC*CSHO), multiplied by 100
Payer	An indicator variable takes a value of 1 if a firm pays cash dividends and 0 otherwise
Post-Edgar$_{i,t}$	The indicator variable takes a value of one for firm-years in the post-EDGAR period, and zero otherwise
Size	Natural logarithm of total assets
MB	The market value of equity plus book value of debt divided by total assets
LEV	Long-term debt plus debt in current liabilities divided by total assets
ROA	Net income before extraordinary items divided by total assets
Cash	Cash and cash equivalent divided by total assets
PPE	The ratio of net property, plant, and equipment to total assets
R&D	R&D expenditures divided by total assets. This variable is set to be zero if R&D expenditure is missing
Capex	Capital expenditures divided by total assets
Age	Natural logarithm of firm age
RE/A	Ratio of retained earnings (RE) to total assets (AT)
TE/A	Ratio of common stockholders' equity (CEQ) to total assets (AT)
XAD/A	Ratio of advertising expense (XAD) to total assets (AT). This variable is set to be zero if advertising expenditure is missing
Repurchase/AT	The ratio of share repurchases to total assets (AT)

Table A1.
Variable definition

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