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Who Watches the Payers? Dividend Policy and Earnings Management Among Swedish Firms

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Abstract: This paper examines whether dividend payments status affects a firm's earnings management practices (EM) using the absolute discretionary accruals proxy. We find evidence that paying dividends is associated with a decrease in the absolute value of discretionary accruals. We also find evidence that the strength of this relationship increases with payout ratio up to a point, after which this effect attenuates. Lastly, we find that both firm size and listed status moderate the dividends EM association such that the negative association between dividends and EM is weaker when the firm is large and stronger when the firm is publicly listed. Overall, our findings suggest that a firm's dividend paying status indicates higher earnings quality by reducing earnings management.

Keywords: Dividends, Earnings Management, Accruals, Dividend Signaling theory, Bonding theory
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1. Introduction

1.1 Background

The purpose of financial reporting is to provide stakeholders with an accurate depiction of a firm's underlying economic reality, as stakeholders depend on reports to make appropriate investing and contractual decisions (Dechow et al, 2010). However, the separation between "ownership" and "control" creates an information asymmetry between managers and stakeholders (Jensen and Meckling, 1976). Earnings management (EM), takes place when managers exploit their informational advantage to alter financial reports with the intent of misleading stakeholders about the true economic performance (Healy & Wahlen, 1999). EM is a field of research that has gotten much attention over the years. A firm may engage in EM for a variety of reasons including: satisfying shareholder expectations and/or managerial private interest (Schipper and Vincent, 2003; Jensen, 1986). If left unchecked, this not only widens the information gap between insiders and outsiders but also obscures the firm's financial health, potentially distorting efficient allocation of resources.

To mitigate this risk and credibly signal the reliability of their reports, firms can employ dividends, a mechanism which has long been recognized by firms to signal financial health and firm value (Bhattacharya, 1979; Miller and Rock, 1985; Taleb, 2019). By committing to regular cash payouts, firms restrict their free cash flow. As dividends are an irreversible outflow of liquidity, they cannot be sustained on artificially inflated earnings. Thus a strong dividend policy functions as a disciplinary mechanism. It forces managers to better align their reported earnings with actual cash generation, thereby signalling the financial strength and economic reality of the firm (Easterbrook, 1984).

While the theoretical link between dividends and EM is well documented in previous literature, existing evidence is largely concentrated on large and publicly listed firms globally (He et al., 2017; Tong and Miao, 2011; Atieh, A., & Hussain, S. 2012). Comparatively few studies have focused on EM in private firms and their results are often mixed (Sundgren, S., 2007; Hope et al., 2013). The Swedish market presents a unique environmental setting to investigate this relationship as it is dominated by private limited liability companies (Aktiebolag). There are approximately one million of these companies, of which 99.9 percent are small and medium sized enterprises (SMEs) (Tillväxtverket). However, the existing research on EM and its relation

to dividends has largely ignored this institutional setting. This thesis addresses this gap by analyzing how the dividend signalling effect is fundamentally altered in the Swedish Market. We provide evidence that the dividend disciplinary effect is highly contingent on firm-specific characteristics and alternative governance structure in small and large firms.

This study makes use of accrual based proxies to test the relationship between dividends and EM across both public and private Swedish firms. We explore how dividend payments can influence firms by its disciplinary role to impact the magnitude of EM. Our results indicate that while dividends-paying firms generally exhibit lower levels of EM, the effect is rather nuanced. We find indicative evidence that the disciplinary effect is not uniform; it is notably stronger for listed firms and smaller private firms. Furthermore, we find that the disciplinary effect is not uniform when examining dividend intensity, the disciplinary effect wears down at the highest payout quartiles. We attribute this non-monotonic pattern to the Swedish institutional environment, specifically the 3:12 tax regime governing dividends from closely held firms. Nevertheless the exact mechanism cannot be clearly outlined.

1.2 Purpose & Contribution

The purpose of this study is to investigate the relationship of corporate dividend policy and accrual-based EM within the Swedish corporate setting. Specifically, this study aims to examine how the decision to distribute dividends and the intensity of the dividend payout affect the EM and the financial reporting quality for firms. We also examine whether the firm's size and whether its public listing status moderates the dividend effect on EM. Although prior literature has studied EM globally; to the best of our knowledge no comparable study has examined the effect of dividends on EM exists for Sweden.

While the disciplinary relationship between dividends and EM is well documented, existing empirical literature is focused disproportionately on publicly traded entities. Moreover, prior work predominantly treats dividend policy as a static binary variable, while systematically overlooking how different payout intensities impact the effect. Our study contributes to the existing literature in three ways. First, the study tests whether the traditional dividend signalling and bonding theories retain their signalling power in the Swedish setting. Second, we implement a full-market analysis that evaluates how firm characteristics, specifically size and public listing

status, changes the relationship between dividends and EM. Third, by examining the payout ratio in the form of quartiles, we evaluate if all dividend payments, regardless of size, have the same effect on the level of EM in the firm.

1.3 Delimitations

Given the wide range of this study, several delimitations have been applied. This study is delimited to Swedish limited companies operating between fiscal years 2000-2023. Consistent with standard empirical accounting research, we exclude the financial industry, regulated utilities and government owned firms due to their fundamentally different regulatory and accounting environments. Methodologically, we limit our study's scope to AEM and systematically remove micro-companies applying cash-based accounting. Given that our cross-sectional research design evaluates the absolute magnitude rather than the directional intent, our inferences are primarily cross-sectional and do not capture longitudinal, inter-year variations.

1.4 Disposition

The study is organized as follows. Section 2 outlines the theoretical framework and reviews prior literature concerning EM and dividend policy. Section 3 develops our hypotheses basing it on the theoretical foundation. Section 4 describes the research design, detailing the EM proxies, variable definitions and robustness checks. Section 5 presents the empirical data handling including the sample selection process and descriptive statistics. Section 6 reports the empirical results of our multivariate regressions, which are comprehensively discussed in Section 7 including robustness checks and limitations. Lastly, Section 8 concludes the study with a summary of the main takeaways.

2. Literature Review

2.1 Agency Theory

Jensen and Meckling (1976) develop the foundations of agency theory to explain organizational behavior in contexts where ownership is separated from control. Within this framework, firms are conceptualized as arrangements in which principals (owners) delegate decision-making authority to agents (managers), potentially creating conflicts of interest. As managers may not always act to maximize shareholder value, instead pursuing personal objectives. To mitigate the risk of opportunistic behavior, principals monitor their agents, incurring agency costs. These

agency costs are typically categorized into three components. Principals incur monitoring costs when observing and constraining managerial behavior. Bonding costs arise from efforts by agents to credibly commit to acting in the principals' interests. Residual loss captures the inefficiencies that persist when managerial decisions deviate from value-maximizing outcomes despite monitoring and bonding mechanisms. The authors then argue that ownership structure plays a critical role in shaping the magnitude of agency costs. Increasing managerial equity ownership aligns the incentives of managers and shareholders, thereby mitigating conflicts of interest. Building on this, the authors conclude that firms adopt a range of governance mechanisms including contractual arrangements and ownership designs to minimize agency costs.

2.2 Dividend Signalling Theory and Bonding Theory

A dividend is defined as the distribution of a company's earnings to its shareholders. Cash dividends have been theorized to serve as the disciplining mechanism that limits the extent to which firms can manage earnings and signal for credible earnings quality. This understanding is rooted in the "Dividend Signalling Theory" as explained by the works of Bhattacharya (1979) and Miller and Rock (1985). The idea that dividends provide information about earnings quality is based on the logic that although managers can embellish reported earnings, dividends constitute a commitment to pay out money to shareholders meaning it would be very costly to pay out dividends based on aggressively managed earnings (Skinner and Soltes, 2011). Dividend payments place high strain on a firm's cashflows, so a sustained commitment to paying dividends is theorized to give credibility to the quality of reported earnings.

Moh'd et al. (1995) provide an alternative interpretation of how dividends function to reduce EM and improve reporting quality. According to them, the cash flow burden of paying dividends is so great that a firm's internally generated cash flows become insufficient to maintain its operations. Firms must therefore subject themselves to external scrutiny to attract the capital needed to satisfy the cash flow requirements imposed by dividends. In return, this incentivizes managers to reduce agency costs. Rozeff (1982) claims that paying dividends is a type of bonding cost, which are costs that "serve to bond managers to act in the interest of outside investors". Simultaneously, Easterbrook (1984) contends that agency costs such as monitoring and risk aversion costs can be alleviated if the firm is "constantly in the market for new capital"

(Easterbrook, 1984). This is because the firm will be subjected to outside review (by investment bankers or similar entities) every time the firm issues new securities or debt. Accordingly, outside shareholders constantly seek to draw funds from the firm to force managers to the scrutiny of capital markets. (Jensen, 1986; Easterbrook,1984; Rozeff, 1982)

2.3 Information Asymmetry

Information asymmetry is the presence of an imbalance in the quantity and quality of information available to different parties, typically arising when one party has access to privileged information. According to Connelly et. al (2011), "because some information is private, information asymmetries arise between those who hold information and those who could potentially make better decisions if they had it". Dechow (1994) states that the existence of information asymmetry creates demand for firm performance summaries so that third parties such as investors, creditors, or suppliers can evaluate the firm's cash generating ability. Management is the most informed party with regards to a firm's performance and therefore are the most qualified to prepare performance summaries, however, management is evaluated and rewarded based on the firm's performance, which creates an incentive to manipulate earnings. According to Dechow (1994), this level of discretion over accrual recognition may transform earnings into a signal that could be used to reduce information asymmetry, since managers typically have access to insider information regarding their firm's performance. Simultaneously, managers may use this discretion to manipulate accruals to overstate firm performance.

2.4 Earnings Management and Quality

This thesis takes inspiration from Healy & Wahlen's (1999) definition of earnings management. For our purposes, *excessive* earnings management occurs when managers use their discretion over the firm's financial reporting to misrepresent the firm's financial performance with the goal of misleading stakeholders or other contractual parties that depend on the firm's financial statements for decision making. It is important to note that the exercise of management discretion does not necessarily violate any accounting standards (Marai and Pavlović, 2013; Marai and Pavlović, 2014). Additionally, we acknowledge that EM can be used to reduce information asymmetry if used to convey the future financial prospects of the firm (Dechow, 1994), and that managerial judgement is sometimes required to estimate future economic events like the depreciation of long-term assets (Healy & Wahlen, 1999).

EM literature identifies two categories of managerial intervention: accruals-based earnings management (AEM) and real earnings management (REM). AEM refers to managerial discretion over the timing of revenue and expense recognition by adjusting provisions, inventories, or expenditures (Healy & Wahlen, 1999). AEM is manipulation of the discretionary accrual component of the Total Accrual; discretionary accrual is the component which managers may impose judgment over.

Because these adjustments are the result of accounting choices and not operating decisions, they have no effect on the cash flow and are theoretically reversible. In contrast, REM involves deliberate changes to business activities with the aim of influencing reported earnings, usually to achieve some earnings threshold, for example by temporary price reductions, lenient credit terms, or advertising to boost earnings in the short-run (Roychowdhury, 2006). Unlike AEM, REM has effects on the firm's cash flow and thus carries real economic costs. Due to the high level of managerial discretion with regards to the timing of recognition of accruals, AEM is easier to exercise in comparison to REM, which involves operational changes (Richardson et al., 2005; Roychowdhury, 2006). Henceforth, we refer to accruals based earnings management when we write EM (earnings management).

Managers may engage in EM to encourage investors to purchase shares of a stock (Dechow, 1996), or so that managers may achieve higher compensation (Strakova, 2020; Schipper and Vincent, 2003), or to conceal poor financial performance among many other reasons (Strakova, 2020). Studies such as Barth et. al (1999) demonstrate that firms with a sustained pattern of earnings increases gain market rewards and that firms reporting an earnings decrease following a trend of earnings increases experience a strong decline in their price-to-earnings multiple. There are large benefits to maintaining earnings increases and serious repercussions for failing to do so. Consequently, firms use EM techniques to avoid reporting decreases in earnings (Burgstahler & Dichev, 1997), which include recording fictitious sales, overstating inventory and understating provisions for bad debt among others (Strakova, 2020).

Earnings quality is contingent on three elements, which are the information's decision-relevance, the informative quality of earnings numbers regarding the firm's financial performance, and lastly, the accounting system must accurately reflect this performance (Dechow et al., 2010). In effect, earnings quality is context-specific and differs for different stakeholders, making it

difficult to settle on a single broadly applicable definition or proxy. Researchers use a variety of proxies to measure earnings quality, including persistence, accruals, smoothness, and investor responsiveness. Earnings quality is of high interest to parties that rely on a firm's financial reports for decision making. Low quality earnings reports are undesirable for investors because they are a poor representation of the firm's financial prospects, and may obscure cash-generation and solvency issues (Schipper and Vincent, 2003).

2.5 Swedish Institutional Setting

Sweden presents a unique institutional landscape for studying the relationship between dividends and EM for two main reasons. Firstly, the Swedish corporate landscape is overwhelmingly composed of private limited liability companies, with about 99.9% of these qualifying as SMEs. Simultaneously, companies in Sweden with sales greater than 3,000 KSEK (Thousands SEK) are required to use accruals based accounting (Verksamt, 2022) which is a much lower threshold than in many other contexts such as the US where much of earnings management literature focuses. This allows us to investigate the association between dividends and AEM in much smaller firms than has been examined in previous literature and is one of the most valuable contributions of our study.

Tax incentives have been shown to motivate managers to manage earnings to minimize tax burden in other European countries (Kasanen et al. 1996). Similar tax incentives exist in Sweden such as the 3:12 rule (Alstadsæter and Jacob, 2016), which governs how the dividends of closely-held companies are taxed. As such, the value of dividends as a signal of "high quality earnings" may be distorted for closely-held private firms due to income shifting which transforms dividends from a credible signal to owner compensation where dividends are motivated solely by tax incentives.

3. Hypothesis Development

The theoretical framework developed thus far suggests that dividends restrict accruals-based EM through two mechanisms. According to dividend signalling theory (Bhattacharya, 1979 ; Miller and Rock, 1985), dividends constitute a costly commitment that managers would be unwilling to undertake or sustain on the basis of inflated earnings due to excessive EM, since dividend payments are a heavy burden on the firm's cash flow. Under the bonding mechanism (Rozeff, 1982; Easterbrook, 1984, Moh'd et al., 1995), dividends place strain on the firm's internally

generated cash flow and force managers to capital markets to satisfy these heightened cash flow requirements. In turn, this exposes the firm to the scrutiny of outside investors, market regulations, creditors, and analysts. Both theories predict that dividend-paying firms will have better quality earnings, and thus, lower levels of EM when compared to non-dividend-paying firms.

H1: Dividend-paying Swedish firms exhibit lower accrual-based earnings management than non-dividend-paying firms.

The dividend signalling and bonding theories discussed above imply that firms which commit to paying dividends are subject to constraints that make opportunistic EM more costly. This is because accruals are by definition non-cash adjustments made to reported earnings, while dividends are a commitment to pay out cash to shareholders. Although managers can use EM to paint their firms' performance in a favorable light, it is probably more costly for managers to pay dividends based on these earnings if the earnings do not accurately reflect the firm's true financial performance (Skinner and Soltes, 2011). This action is costly in many aspects: dividend cuts often produce strong negative market reactions (Barth et. al 1999; Aharony and Swary, 1980), while financing dividends with external capital incurs monitoring and transaction costs, and is not sustainable if earnings are excessively managed. Managers with a stake in the future of the company therefore have a strong incentive not to excessively manage earnings once a dividend commitment has been made.

H2: There is a negative association between the dividend payout ratio and the level of accrual-based earnings management.

The signalling and bonding mechanisms discussed earlier imply that the strength of the dividend constraint should scale with the intensity of the commitment. A firm that distributes a small fraction of earnings as dividends will not experience a large strain on their cash flows, whereas a firm that commits a large proportion of their earnings to dividend payments must ensure that reported earnings are backed by real cash flows. From a signalling perspective, a larger commitment constitutes a more credible signal, because the cost of sustaining such a dividend policy on the basis of inflated earnings will be very high. From a bonding perspective, higher

payouts mean greater dependence on external capital markets for funding and therefore more external scrutiny by actors within those markets (Easterbrook, 1984).

H3: Publicly listed Swedish firms exhibit a stronger association between dividends and accrual-based earnings management than private firms.

The disciplining role of dividends does not operate in isolation; it interacts with the broader monitoring environment in which the firm operates. Publicly listed firms are subject to a range of external monitoring mechanisms such as mandatory IFRS reporting, analyst coverage, institutional ownership, and stock-exchange disclosure requirements. Such restrictions are largely absent or substantially weaker for private firms. These mechanisms raise the expected cost of aggressive accrual management because misreporting is more likely to be detected and penalized. In contrast, private firms in Sweden operate under the K-regulations, which permit closer alignment between financial and tax reporting. This tax alignment incentivizes firms to practice downward EM designed to reduce tax liabilities, rather than the upward management typically induced by capital market pressures (Coppens and Peek, 2005; Ball and Shivakumar, 2005). As a result, the strength of the association between dividends and EM is expected to be greater in public firms compared to private firms because the monitoring mechanisms that restrict accrual discretion are stricter for public firms. Comparatively, private firms generally have fewer financial statement users, fewer analyst forecasts to meet, and lower reputational and legal costs associated with EM. Even when private firms pay dividends, the bonding effect is likely weaker than in public firms.

H4: Larger Swedish firms exhibit a stronger association between dividends and accrual-based earnings management than smaller firms.

Firm size is a well-established determinant of earnings quality. Larger firms typically maintain more developed internal control systems, employ larger and more specialized accounting and audit functions, and attract closer external monitoring from analysts, rating agencies, and institutional investors (Dechow and Dichev, 2002). These features raise both the probability of detection and the cost of reputational damage arising from excessive opportunistic EM. In addition, larger firms tend to have more diversified operations and more stable underlying cash flows, reducing the mechanical demand for accrual-based smoothing to meet earnings benchmarks. Smaller firms, by contrast, often operate in more volatile environments, depend on

a narrower base of financial-statement users, and face fewer external monitoring mechanisms. The combination of greater demand for accrual-based smoothing and a lower probability of detection implies that smaller firms will report higher levels of discretionary accruals.

4. Method

This section describes the methodology used to investigate the relationship between dividend policy and accrual-based EM (AEM) among Swedish firms. We first outline the research design, followed by the EM proxies, the regression framework, variable definition and finally the inference and robustness strategy.

4.1 Research Design

This study employs a quantitative, deductive research design based on an unbalanced panel of Swedish firm-years for the fiscal years 2000 to 2023. The primary independent variable, dividend policy, is measured in two ways. For H1 we use a binary indicator (DIV = 1 if the firm paid dividend in fiscal year *t*, zero otherwise). For H2 we use a quartile-binned payout measure relative to non-payers, we group all dividend-paying firms into payout quartiles based on the standard payout ratio (dividends divided by net income). Furthermore, we report an additional test to assess whether the magnitude of dividend-disciplining effect strengthens monotonically across the four quartiles. To test for H3 and H4 (LISTED vs private firms, LARGE vs small firms respectively), we estimate the main regression with an interaction term between dividend variable and listed and large firm dummies respectively, in order to test whether the dividend-earnings-management relationship differs across these specifications.

4.2 Cross Sectional vs Time Series Estimation

In prior literature accrual-based earnings is shown to be estimated using either time-series or a cross-sectional approach. This distinction can have material consequences for sample size, model specification and validity of results (Subramanyam, 1996). The time series approach is based on inter-company parameters, where the model estimates from a single firm's own historical data, allowing coefficients to reflect firm-specific patterns (Jones 1991). However, as Subramanyam (1996) demonstrates, this method imposes by nature large data requirements (at least six pre-estimation years), and therefore generates survivorship bias restricting samples to only companies with sufficiently long histories. The time-series approach substantially reduces the

effective sample and disproportionately eliminates younger and smaller private firms. The cross-sectional approach instead estimates the model parameters by pooling firms within the same industry-year grouping. This automatically adjusts for industry-wide economic conditions for specific industry-year that can influence accruals across firms. This approach also helps avoid survivorship bias and is considered the most renowned alternative in the EM literature (Bartov et al., 2000). We therefore estimate the Kothari model cross-sectionally by industry-year group, requiring a minimum of 20 observations per industry-year cell.

4.3 Earnings Management Proxies

4.3.1 Performance-Adjusted Discretionary Accruals (ADA)

The Modified Jones models improved the original Jones (1991) model by adjusting for revenue changes for changes in accounts receivables, correcting the mis-specification of growth by credit sales as potential discretionary (previously labelled as non-discretionary). However, the modified Jones model often mis-specified residuals for firms experiencing unusually strong or weak performance. As high-performing firms naturally generated higher accruals that the model falsely classified as discretionary. The Kothari et al. (2005) performance adjustment helps correct this by matching each firm with an industry peer or similar with similar ROA and subtracting the peer's residual, helping reduce type I errors without materially increasing type II errors.

Following the Modified Jones Kothari Model, industry-year grouping (Tong and Miao, 2011) estimates non-discretionary accruals cross-sectionally.

$$\frac{TACC_{it}}{Asset_{i,t,avg}} = \beta_0 + \beta_1\left(\frac{1}{Asset_{i,t,avg}}\right) + \beta_2\left(\frac{\Delta Sales_{i,t} - \Delta AR_{i,t}}{Asset_{i,t,avg}}\right) + \beta_3\left(\frac{PPE_{i,t}}{Asset_{i,t,avg}}\right) + \varepsilon_{i,t} \quad (1)$$

Where TACC is total accruals; Δ Sales is the change in net revenues; ΔAR is the change in accounts receivables; PPE is net property, plant and equipment. All variables are scaled by average total assets $Assets_{i,t,avg} = (Assets_t + Assets_{t-1})/2$. Total accruals are calculated using the balance-sheet formula:

$$TA_{it} = (\Delta CA_{it} - \Delta CASH_{it}) - (\Delta CL_{it} - \Delta STD_{it}) - DEP_{it} \quad (2)$$

Where ΔCA is change in current assets; ΔCASH equates to change in cash and cash equivalents; ΔCL is the change in current liabilities; ΔSTD is defined as change in short-term debt included in current liabilities and DEP is depreciation and amortization expense.
The residual **ε** in *Equation 1* captures the firm-specific discretionary accruals. Following Kothari et al. (2005) and Tong and Miao (2011), the performance adjusted measure ADA is obtained by subtracting the residual of the closest ROA peer in the same industry-year group. A matching rather than regression-based performance adjustment is performed because the accruals-performance relationship is non-linear (Kothari et al., 2005).

4.3.2 Choice of Earnings-Management Proxy

Our primary earnings-management proxy is the Performance-Adjusted Discretionary Accruals (ADA), derived from the Modified Jones Model with the Kothari et al. (2005) performance adjustment. The proxy helps isolate the portion of total accruals that are unexplained by the firm's economic fundamentals (sales growth, capital intensity, performance) and can therefore be a plausible explanation of managerial discretion. Higher ADA indicates larger deviations from the model's expected level of accruals and are interpreted as evidence for greater accrual-based EM. We rely on this single proxy for two reasons. First, the Kothari model is a standard benchmark in the EM literature and thus helps support direct comparability with prior work. Second, the Kothari model imposes fewer data requirements in comparison to other models used by Tong and Miao (2011), which is material for our study setting. To corroborate the main results, we also report a Value Relevance (VR) measure following Tong and Miao (2011) as a robustness check (Discussed in Section 4.6.3).

4.3.3 Balance Sheet Approach and Data-limitation Acknowledgment

Total accruals are computed using the balance-sheet approach for all firms in the sample. This is primarily a data constraint: Swedish firms that are not listed or large are not legally required to file cash flow statements (Bolagsverket, 2012). Therefore, we implement the balance-sheet approach for the entire sample ensuring that accruals are measured consistently and avoids introducing a systematic difference between listed and private firms. This subjects our analysis to limitation as documented by Hribar and Collins (2002), that balance sheet movements caused by non-operating events such as acquisition or discontinued operations are incorrectly captured as

accruals. The cash flow statement is argued to be better at distinguishing these transactions more clearly; we acknowledge this as a limitation of the study.

4.3.4 Absolute vs Signed Discretionary Accruals

Discretionary accruals in the aforementioned proxies can be measured as both absolute or signed (non-absolute) form. Both measures have been used in prior literature depending on the research question. The absolute value measures the overall magnitude of the discretionary accrual (manipulation) and is an appropriate measure when concerned with the overall presence and intensity of manipulation rather than its specific direction. The signed value presents us with directional information, with positive values indicating income-increasing manipulation and negative values indicating income-decreasing manipulation (Hribar and Nichols, 2007). Our hypotheses concern whether dividend-paying firms exhibit lower EM regardless of direction – it is a question of magnitude rather than direction. Thus, we use the absolute discretionary accrual value as our primary dependent variable. As a robustness check, we also test the main regression using signed ADA to examine whether dividend policy is specifically associated with income-increasing or income-decreasing management (Tong and Miao, 2011; Hribar and Nichols, 2007).

4.4 Regression Model and Variables

Before conducting the main multivariate regression, we conduct a univariate analysis to establish a baseline comparison of ADA across dividend-paying and non-paying firms. We compare mean and median values and test whether the differences are statistically significant, using a t-test for means and Wilcoxon rank-sum test for medians (McIntosh et al., 2010).

To test our hypotheses, we run the OLS multivariate regression:

$$ADA_{i,t} = \alpha + \beta_1 DIV_{i,t} + \sum \gamma Z_{i,t} + IndustryFE + YearFE + \varepsilon_{i,t} \quad (3)$$

where ADA is the dependent variable for firm *i* in year *t*; DIV is the dividend variable which takes the form of binary dividend-paying indicator for H1, four payout-quartile indicator (*Q1*-*Q4*) for H2, a binary indicator interacted with LISTED for H3 and a binary indicator interacted with LARGE for H4 (DIV binary indicator for H1, *Q1*-*Q4* payout-quartile indicator for H2, DIV binary indicator with LISTED interaction effect for H3 and DIV binary indicator with LARGE interaction effect for H4); Z is the vector of control variables defined in Section

4.5.2; IndustryFE captures industry fixed effects defined at the SNI two-digit level and absorbs unobserved time-invariant sectoral differences in accounting practices; and YearFE captures year fixed effects spanning 2000 to 2023 controlling for macroeconomic shocks and reporting-standard transitions. Refer to Appendix H for full specification OLS regression for each hypothesis.

For H2, we conduct analysis on standard payout ratio by dividing dividend-paying firm-year into four quartiles and including binary indicator variables for *Q1*, *Q2*, *Q3*, and *Q4* relative to non-payers as the baseline category. This approach is motivated by Tong and Miao (2011), who find that association between dividends and earnings quality is stronger with larger payouts, and suggests that the effect may not be uniform across all payout levels. Our quartile approach extends Tong and Miao binary "large" versus "small" dividend payout split into four bins. This method helps us test whether the effect is concentrated to a specific quartile or equally across all dividend paying firms (Rampershad & De Villiers, 2019). As an additional assessment, we also examine whether the magnitude of quartile coefficient varies statistically.

For H3 and H4, we extend the model by adding interaction terms between the dividend variable and a listed-firm dummy "LISTED" (H3) and a large-firm dummy "LARGE" (H4) respectively. The interaction terms test whether the association between dividends and EM is moderated by listed status (H3) or firm size (H4). All reported p-values are two-tailed. Although our theoretical predictions are directional by nature, we follow standard practice and test against a null hypothesis of no effect in either direction.

4.5 Variable Definitions

4.5.1 Primary Independent Variable

DIV (Dividend) is a binary indicator which is equal to one if the firm paid any dividend in fiscal year *t*. It is used in H1 regressions. We interpret a negative coefficient as an indication of a negative association between dividends and EM, with larger magnitudes indicating a stronger association.

PR (Payout ratio) is equal to total dividends paid divided by net income in fiscal year *t*. The total payout ratio is categorized into four equal quartiles. A negative coefficient is predicted on

each quartile dummy, with the magnitude expected to grow as payout intensity increases as higher payout ratios are associated with lower EM.

4.5.2 Control Variables

The control variables are selected based on their significance in prior EM studies, theoretical and practical relevance to the Swedish setting and mainly follows Tong and Miao (2011) list.

SIZE (Size) is measured by the natural logarithm of total assets. Larger firms face stricter regulations and analyst scrutiny which reduces the incentives for earnings manipulations. Therefore, we predict the coefficient to be negative (Tong and Miao, 2011).
ROA (Return on assets) calculated as net income divided by average total assets. Higher profitability is associated with naturally generated higher accruals (Kothari et al., 2005). Thus we predict a negative coefficient.
LOSS (Loss dummy) is a binary indicator equal to one if the firm reports a net loss (negative net income) in fiscal year *t*. Loss-making is associated with stronger incentives to manage earnings upward; a positive coefficient is predicted (Burgstahler and Dichev, 1997; Tong and Miao, 2011)
LEV (Leverage) is defined as the total debt divided by total assets. Firms with higher leverage have stronger incentives to manage earnings to avoid debt covenant violations. Therefore, we predict a positive coefficient (Defond and Jiambalvo, 1994; De angelo et al., 1994; Wijaya et al., 2025).
AGE (Firm age) is measured as the natural logarithm of (1+ years since incorporation). The +1 adjustment helps ensure that measure is defined for firms in their incorporation year (age equals zero). Older firms tend to have more established reporting systems and practices that constrain earnings manipulation. Thus, a negative coefficient is predicted (Tong and Miao, 2011).
RE (Retained earnings) is defined as retained earnings divided by total assets. Firms with strong retained earnings are expected to be less likely to engage in EM due to a track record of profitability. Therefore, we predict a negative coefficient (Tong and Miao 2011).
CAPITAL (Capital Intensity) is the net property, plant and equipment divided by total assets. Cohen (2008) finds that more capital-intensive firms have better quality earnings because capital intensity serves as a barrier to entry for future competition, resulting in lower proprietary cost of disclosure. Therefore, we predict a negative coefficient.

FIN (Financing) is a dummy indicator which is equal to one if the firm issued debt or equity in year t. It controls financing related EM as studies have found that frequent access to capital markets can either incentivize or constrain EM (Tong and Miao, 2011; Teoh et al. 1998a, 1998b; Harris and Raviv 1991; Fluck 1998). We do not make a directional prediction.

PAR (Parent) is a binary indicator which equals one if the firm is a group head (parent) entity. Being the head company in a group structure can affect dividend decisions, as the structure and operations setup between the group head and subsidiaries may vary, so we include this control to capture residual variation tied to corporate group position. We do not make a directional prediction.

K_ACC (K-Account) equals one if a company has filed consolidated (K) accounts for a given firm-year rather than standalone (B) accounts. Given that we include both B and K type accounts, the indicator helps capture any residual effect of the consolidation choice described in Section 5.2.2. The indicator helps control for any measurement differences in accruals between consolidated and standalone accounts. This variable differs from PAR as it captures the mechanical accrual measurement rather than the residual economic incentive of the group head status.

AUDIT_REC (Audit recommended) equals one if the auditor recommends adoption of the financial statements (clean opinion – without remarks). **AUDIT_ADV (Audit adverse)** equals one if the auditor does not recommend adoption. Missing or ambiguous audit opinions are noted as the omitted reference category. The auditors opinion directly signals concerns about earnings quality, and the three-way split preserves information about audit opinion. Given that stronger and clean audit remarks would act as a discipline mechanism we predict a negative coefficient for AUDIT_REC and a positive coefficient for AUDIT_ADV (Yasmin et al., 2024).

4.5.3 Moderating Variables

LISTED is a binary indicator equal to one if a firm is listed on a Swedish stock exchange in a year, zero otherwise.

LARGE is a binary indicator equal to one if a firm exceeds the threshold for “large company”. Firms meeting at least two of three requirements for two consecutive years is considered a large firm. Requirements for years post-2010 are the following (more than 50 employees on average, balance-sheet total above 40 MSEK, or net sales above 80 MSEK). For the year prior to 2010 the

following requirements apply (more than 50 employees on average, balance-sheet total above 25 MSEK, or net sales above 50 MSEK). Note that listed firms are always considered large (Bolagsverket, n.d).

4.6 Inferences and Robustness

4.6.1 Statistical Tests

To ensure the validity of our OLS estimates and satisfy the basic assumptions, we conduct model diagnostics. Multicollinearity is assessed using Pearson correlation matrices and Variance Inflation Factor (VIF). Furthermore, to account for heteroskedasticity and potential serial correlation that is expected of inherently large samples, the main regression uses two-way clustered standard errors (by firm and year) (Petersen 2009; Tong and Miao 2011). This clustering is more conservative than firm-only or year-only and accounts for both cross-sectional dependence (multiple observations per firm) and time series-dependence (year-specific shocks such as 2005 IFRS adoption or 2008 financial crisis).

4.6.2 Industry and Year Fixed Effects

To isolate the association between dividend policy and discretionary accruals and to account for the wide 24 years sample, our primary empirical models incorporate both industry and year fixed effects (Tong and Miao, 2011). Year fixed effects help absorb unobserved, time varying characteristics such as macroeconomic shocks and regulatory shifts (IFRS in 2005, and K2/K3 in 2014) that impact the entire market simultaneously. Industry fixed effects instead control for time-invariant, industry specific characteristics, such as industry operating cycles, capital intensity. By applying dual fixed effects, we help ensure that the coefficients in our model specification are strictly comparing dividend payer and non-payers that face similar external economic conditions.

4.6.3 Robustness Checks

We perform the following robustness checks on our primary ADA specification. First, we re-estimate the main regression with continuous variables winsorized at the 5th and 95th percentiles instead of 1st and 99th. This helps confirm that our findings are not driven by the choice of winsorisation. Second, we re-estimate the main regression using signed discretionary accruals instead of ADA as the dependent variable. This helps examine the directionality of the

dividend-disciplining effect. Third, we replicate the main regression using the Value relevance measure as the dependent variable.

5. Empirical Data

This section describes the data sources, sample period, sample construction procedure, and presents descriptive statistics and pairwise correlations for the variables.

5.1 Data Sources and Time Period

The firm-level accounting data was collected from the Serrano database (Swedish house of finance). Serrano builds on the raw financial statement database sourced from Bolagsverket's mandatory filings (Swedish agency for companies) and further supplements it with firm-characteristics from Statistics Sweden (SCB) including industry codes, employee counts, and group-structure indicators. Retriever Business is used as a secondary source to primarily cross-validate the sample construction and verify selected accounting values. For the supplementary proxy described in Section 4.6.3, the monthly adjusted price data are obtained from FinBas, a Swedish pricing database that adjusts for corporate actions (stock splits, stock dividends, and cash dividends).

The sample covers fiscal years 2000-2023. We deliberately choose the 24-year time horizon as it helps maximise the number of firm-year observations, which is highly material for private firms whose active duration can vary greatly. We account for this by implementing Year fixed effects in every regression to help absorb the macroeconomic shocks and any structural breaks associated with reporting-regime transitions over the period (IFRS in 2005; K2/K3 in 2014) (Hellman et al., 2024).

5.2 Sample Selection

Our baseline sample is constructed from the full population of Swedish limited-liability companies (*aktiebolag*) reporting to Bolagsverket between 2000 and 2023. We apply a series of filters to arrive at a sample suitable for estimating discretionary accruals and testing our hypotheses. Table 1 summarizes the sample-selection waterfall. From the Serrano extract we exclude subsidiaries and foreign-parented entities (described below), financial firms and regulated utilities and government-owned firms (SNI codes 35-39 and 64-65), firm years with negative dividends, firm-years missing key variables, firm-years with sales below 3,000 KSEK

(described below), and industry-year cells with fewer than 20 observations. Two filters described below require detailed explanation as they have a substantial impact on the sample composition and reflect distinctive features of the Swedish environment.

Firstly, within Serrano's corporate group classification, firms coded as wholly-owned Swedish subsidiaries are excluded. These companies are typically controlled by their parent company, and do not have independent management or decision making power. Given that the focus of this thesis is to evaluate dividends paid out to the shareholders rather than intercompany distributions – all subsidiaries are excluded from the sample including Swedish firms that are foreign owned (Beuselinck et al., 2023). Secondly, because accrual-based proxies require accrual accounting to be meaningful, including firms that are likely implementing cash-based accounting would mechanically distort our accrual measures, as it would simply reflect balance-sheet noise rather than genuine accounting discretion (Verksamt, 2022). It is important to note that Verksame (2022) states that companies "may" apply cash based accounting due to its simpler nature. Given that we cannot distinguish whether the company has or has not applied cash based accounting, we therefore require firm years to report annual sales of at least 3,000 KSEK, as any sales under 3,000 KSEK could be reported with cash based accounting under Swedish GAAP (Verksamt, 2022).

5.2.2 Additional Considerations

Net income and extraordinary items. We use net income as the primary earnings variable without adjusting for extraordinary items as Serrano defines extraordinary items as: "Natural disasters, acts of war and confiscations."

5.3 Industry Classification

The study follows the Swedish Standard Industrial Classification (SNI), with industries defined at the SNI two-digit level. The two digit SNI code is chosen for two reasons. First it matches the Statistical Classification of Economic Activities, the European union industry and firm classification system, for future replicability in the European setting. Second, although the SIC 2 digit industry classification is the standard norm in EM literature, we choose the SNI classification because it reflects more accurately how the industries are segmented in Sweden (Tong and Miao, 2011; DeFond and Jiambalvo, 1994; Kothari et al., 2005). Evaluating companies under SIC classification may help in future replication of the study, however it

distorts how the performance adjustment Kothari model functions, as it might be comparing two fundamentally different firms that are classified together because of classification system discrepancies. Our sample period is 2000-2023, therefore the classification standard applied is SNI 2007. Note that for firms whose SNI code changes mid-sample likely because of a substantive shift in business activity, we apply the reclassification forward from the year of change and do not retroactively update earlier years; each firm-year therefore carries a single SNI code that reflects the year's activity.

Table 1 – Sample selection waterfall

	Stage	Firm-years	Δ firm-years	Unique firms	Δ firms
0	Raw panel	8,878,303	—	959,043	—
1	Subsidiary and foreign company exclusion	7,415,611	−1,462,692	876,280	−82,763
2	SNI industry, government ownership, and missing/zero SNI exclusions	6,510,490	−905,121	740,395	−135,885
3	Negative-dividend	6,509,681	−809	740,345	−50
4	Missing key variables	6,015,455	−494,226	725,852	−14,493
5	Sales ≥ 3,000 KSEK	1,707,514	−4,307,941	267,147	−458,705
6	Kothari Model inputs + minimum 20 observations per industry-year cell	**1,347,399**	−360,115	**203,760**	–63,387

Note: Table 1 represents the sample selection waterfall diagram. The table represents each of the 6 stages of secondary sample filters applied and their respective effects on the firm-year and unique firm observations.

5.4 Descriptive Statistics

Table 2 reports the descriptive statistics of the control variables used in the main regression, separated for dividend payers (N = 594,674) and non-dividend payers (N = 752,725). All differences in means and median between the two groups are statistically significant at the 1% level. Several patterns are worth highlighting. Dividend payers are on average more profitable with a mean ROA of 12.5% versus 2.6% for non-payers, and substantially less likely to report a loss in the current year. Dividend payers are also larger firms with SIZE of 8.63 versus 8.40. These patterns suggest that dividend-paying sub sample skews towards more mature and profitable firms (Bae et al., 2017). Capital structure also differs systematically between the two groups. Dividend payers on average carry less leverage than non-payers (mean LEV of 0.117 versus 0.232), consistent with the interpretation that firms with higher debt services are less able

or willing to commit dividends to shareholders (Bae et al., 2017). Dividend payers also hold more retained earnings relative to total assets (mean RE of 0.242 versus 0.168), reflecting accumulated profitability that funds the payout. Capital intensity shows an interesting characteristic with payers having lower capital intensity than non-payers (mean CAPITAL of 0.195 versus 0.243), this tells us that payers are more concentrated in less asset-intensive industries. Furthermore, we observe that the audit-opinion variables show that dividend payers receive cleaner audit-opinions more frequently (AUDIT_REC of 92.3% versus 88.4%). Adverse opinions overall are far less frequent in both groups but less for dividend payers (AUDIT_ADV: 0.21% versus 1.81%).

Table 2. Descriptive Statistics by Dividend Status

	(A) Payers (N=594,674)			(B) Non-Payers (N=752,725)			(C) Differences (Pay - No Pay)	
Variable	**Mean**	**Median**	**STD**	**Mean**	**Median**	**STD**	**Diff Mean**	**Diff Median**
ROA	0.1253	0.0961	0.1213	0.0260	0.0204	0.1437	0.0993***	0.0757***
LEV	0.1166	0.0000	0.1840	0.2317	0.1511	0.2499	-0.1151***	-0.1511***
RE	0.2420	0.2033	0.1930	0.1676	0.1312	0.2367	0.0744***	0.0720***
SIZE	8.6336	8.4778	1.1372	8.4038	8.2250	1.2568	0.2297***	0.2529***
AGE	2.6304	2.7081	0.7285	2.5103	2.5649	0.7642	0.1201***	0.1431***
CAPITAL	0.1945	0.0778	0.2401	0.2429	0.1130	0.2740	-0.0483***	-0.0352***
FIN	0.3171	0.0000	0.4653	0.2638	0.0000	0.4407	0.0533***	0.0000***
LOSS	0.0386	0.0000	0.1927	0.2580	0.0000	0.4375	-0.2194***	0.0000***
PAR	0.1484	0.0000	0.3555	0.1364	0.0000	0.3432	0.0120***	0.0000***
K_ACC	0.0611	0.0000	0.2396	0.0509	0.0000	0.2198	0.0102***	0.0000***
AUDIT_REC	0.9233	1.0000	0.2662	0.8837	1.0000	0.3205	0.0395***	0.0000***
AUDIT_ADV	0.0021	0.0000	0.0454	0.0181	0.0000	0.1333	-0.0160***	0.0000***

Note: Table 2 displays dividend-paying (A) and non-paying (B) Swedish private and public firms (2000-2023, N=1,347,399 firm-year observations). Columns A and B report mean, median and standard deviation for each group. Column (C) reports differences (payers minus non-payers) with respective statistical significance from two-sided t-tests for means (t-stats) and wilcoxon rank-sum tests for medians (z-stat). Continuous variables are winsorized at the 1st and 99th percentiles. Significance levels are denoted: *p<0.1; **p<0.05; ***p<0.01

5.5 Pearson Correlations

Appendix A reports the Pearson pairwise correlations matrix between the variables used in the main regression. We expect some form of correlation between our dependent variable and control variable indicating explanatory power of the model and our chosen variables. However, we do not expect any strong correlations between our variables as it would indicate multicollinearity and therefore complicate interpretation of individual coefficients. First, the

correlation between ADA and dividend indicator is negative (-0.029), consistent with our H1 prediction that dividend paying firms exhibit lower discretionary accruals. Second, the correlations between ADA and the control variables are consistent with our prediction in Section 4.5.2. SIZE, AGE , AND CAPITAL all have negative and significant correlation indicating that larger, older and more capital intensive firms manage earnings less. LOSS is consistent with our prediction indicating stronger earnings-management incentives in loss firm-years. ROA's near-zero slightly positive correlation is consistent with the offsetting mechanism as flagged by Kothari et al. (2005): high-performing firms generate mechanically larger accruals, while low-performing firms have stronger incentives to manage earnings such that the effect is mitigated. Note that none of the pairwise correlations exceed the 0.7 conservative threshold for serious multicollinearity concern (Cohen et al., 2002). However, LEV–CAPITAL (+0.631) and PARENT–K_ACC (+0.577) pairs do warrant significant attention. Section 7.4.2. reports VIFs for the full specification and confirms that all VIFs remain below 2.5.

6. Results

6.1 Univariate Results

We begin our results with a univariate EM comparison between dividend payers and non-payers. Appendix B reports mean and median ADA for each group along with a parametric (t-test) and a non-parametric (Wilcoxon rank-sum) test of difference. The dividend payers exhibit a lower ADA than non-payers, having a mean difference of *–0.0093* and median difference of *–0.0051* both statistically significant at 1% level. These results provide initial support for H1, indicating that dividend paying firms manage earnings less than non-payers.

6.2 Multivariate Results

In the first hypothesis, we examine the fundamental relationship between dividend-paying status and the magnitude of discretionary accruals. The independent variable is the binary indicator DIV, which equals one for dividend paying firms and zero otherwise. The test results, presented in Table 3 Panel C, reveal a highly significant and negative coefficient for the DIV variable ($\beta = -0.0089, p < 0.01$). This indicates that dividend paying firms exhibit ADA that are approximately 0.89 percentage points lower than their non-paying counterparts. Consequently, we reject the null hypothesis of no difference in EM levels between the groups. The findings

provide strong empirical support for our Hypothesis 1, providing support for the disciplinary effect of dividend payment. The regression is consistent for all three panels (A, B, C) when the premise is tested for without control and without industry and fixed effects: the results remain negative and significant. The model results in an adjusted R^2 of 6.23%. Lastly, except AUDIT_ADV, all control variables SIZE, ROA, LOSS, LEV, AGE, RE, CAPITAL, FIN, PAR, K_ACC, AUDIT_REC, and AUDIT_ADV are all significant which confirms their relevance to the model and establishes a baseline for our subsequent models.

The second hypothesis investigates whether an increased payout intensity contributes to a stronger disciplinary effect on EM. This is evaluated using the payout ratio ($PR = DIV/NI$), partitioned into quartiles, with non-dividend paying firms serving as the reference category. As reported in Table 4, the coefficient for the lowest payout quartile ($Q1$) is statistically insignificant ($\beta = 0.0010$), indicating that the firms in this quartile are effectively indistinguishable from non-payers. The subsequent quartiles all carry negative coefficients and are highly significant ($p < 0.01$): $Q2$ ($\beta = -0.0099$), $Q3$ ($\beta = -0.0145$) and $Q4$ ($\beta = -0.0122$). These results indicate clear differentiation from the non-payers reference group. Table 5 reports the between-quartiles differences and indicates a clear difference between each quartile, with the disciplinary effect peaking at $Q3$ and slightly diminishing at $Q4$ as the difference turns positive, all differences were highly significant ($p < 0.01$). We therefore find partial support for our second hypothesis that the association between dividends and EM grows with payout ratio from $Q2$-$Q3$, after which it diminishes. Adjusted R^2 for this regression is 6.29%. All control variables remain statistically significant and retain their directionality, while AUDIT_ADV remains solely insignificant.

The third hypothesis tests the moderating effect a company's public listing has on the association between dividend payment and EM. This effect is measured with $DIV \times LISTED$. Table 6 Panel A reports a negative and significant interaction effect ($\beta = -0.0228,\ p < 0.01$). The implied total disciplinary effect for publicly listed dividend payers is significant and negative ($\beta 1 + \beta 3 = -0.0316,\ p < 0.001$), as it substantially exceeds the baseline effect of private dividend payers ($\beta = -0.0089$). Based on these results, we reject the null hypothesis and find support for our hypothesis 3 that listing status amplifies the association between dividends and EM. Panel C reports that the dividend effects remain relatively consistent and significant in the private firm subsample ($\beta = -0.0089,\ p < 0.01$). However the listed subsample results are statistically

insignificant ($\beta = -0.0095$). This is likely due to the small size of 3,716 firm-year observations. The adjusted R^2 for the interaction model is 6.24%. All control variables remain statistically significant and retain their directionality, while AUDIT_ADV remains solely insignificant, in line with the established baseline.

Our fourth hypothesis investigates whether the firm size moderates the disciplinary effect of dividend on EM. The relationship is tested with the interaction term, $DIV \times LARGE$. Table 7 Panel A, reports a positive and statistically significant interaction effect ($\beta = +0.0046, p < 0.05$). Comparing the interaction term with small dividend paying firms ($\beta = -0.0091$) indicates that although dividends help discipline EM in LARGE firms, the magnitude of the effect is notably weaker than in small firms. The results in Panel A strictly contradict our initial prediction that size would strengthen the dividend effect, therefore, the null hypothesis is rejected. Panel B reports that the dividend EM association is negative and significant in the large firm subsample ($\beta = -0.0051, p < 0.01$) and column C reports a similar but more pronounced effect ($\beta = -0.0091, p < 0.01$), which corroborate our findings in Panel A. The adjusted R^2 for the interaction model is 6.24%. All control variables remain statistically significant and retain their directionality, while AUDIT_ADV remains solely insignificant, behaving consistently with the baseline model.

7. Analysis and Discussion

7.1 Main Regression Analysis

Dividend-paying status and earnings management

Our first hypothesis tests for the effect of dividend-paying status on magnitude of discretionary accrual. The results as seen in Table 3 support H1: dividends-paying firms exhibit ADA of 0.89 percentage points lower than non-payers, statistically significant at the 1% level. The findings are largely consistent with the established literature of dividend-paying firms and earnings quality covered in section 2.2. Dividend signalling theory and bonding theory suggest that firms that engage in aggressive EM are less likely to pay dividends as they are cash flow costly by design, and thus the firms would be unable to sustain the dividend payments (Moh'd et al., 1995). Our findings would imply that dividend paying firms' earnings reports contain more decision-relevant information and more faithfully represent their financial performance

compared to non-paying firms, since they are of higher quality (Dechow et al. 2010; Skinner and Soltes, 2011). This enables stakeholders to make more informed investment and strategic decisions and set up appropriate incentive schemes to reduce managerial opportunistic behavior (Schipper and Vincent, 2003). Additionally, there is evidence that earnings quality has implications on firm financing. Dechow et. al (1996) found that firms that are discovered to be earnings manipulators are expected to experience an increase in their cost of capital because analyst estimates of firm value decreases.

Dividend Payout ratio and Earnings Management

The second hypothesis predicts a monotonically negative relationship between payout intensity and ADA. The empirical results provide partial support, revealing a distinct non-monotonic pattern. Moving from *Q2* to *Q3*, the dividend disciplinary effect strengthens, indicating that the dividend commitment becomes more binding, creating a stronger cash-flow constraint. This aligns with the dividend signalling and bonding theory (Bhattacharya 1979; Miller and Rock 1985; Moh'd et al., 1995; Rozeff 1982). However, at the highest payout level *Q4*, this relationship attenuates. These results are partially in line with Rampershad & De Villiers (2019), who demonstrate that larger dividends payouts are associated with less ADA, but that this effect is stronger for companies paying average sized dividends, and the relationship weakens for dividend payouts in the 80th percentile. According to Appendix C, *Q4* firms are on average smaller (in terms of mean total assets), have fewer employees, and are less profitable (lower mean ROA) compared to firms in *Q1-Q3*. We conclude that these firms are small, mature firms which pay out a high fraction of a modest income base to closely held owners. These small firms do not face the same capital market scrutiny as listed or large firms, and therefore the standard disciplinary mechanism established previously may not apply.

A plausible explanation for the weakening of the dividend to EM relationship is the tax-driven EM theory at high payout levels (Karjalainen, J. et. al, 2023). Kasanen et al., (1996) report that the legal linkage between reported earnings and taxable income creates incentives to manage earnings to reduce taxes when unmanaged earnings exceed the cash required for the dividend payment. They explicitly state that the same logic should apply in other settings with similar institutional features, specifying Sweden as one such setting. The Swedish 3:12 regime allows

managers of closely-held firms to extract a portion of dividends at lower tax rates than income tax. The differential tax treatment of labor and capital income generates strong incentives for income shifting, with the direction of the shift depending on the overall income level (Alstadsæter and Jacob, 2016). When the marginal tax rate on labor income exceeds the marginal tax rate on capital income, the owner-managers have strong incentives to classify the income as capital income through dividends, thereby minimizing their overall tax liability (Alstadsæter and Jacob, 2016).Thus, we argue that the disciplinary signal is no longer the motivation for paying dividends, rather tax-optimisation of owner compensation is, which explains the attenuation of the dividend effect observed for *Q4*. This also plausibly affects the accrual decisions of these firms which are now driven by tax consideration rather than to signal commitment to providing high quality reports for stakeholders.

This finding can have practical implications for users of Swedish private-firm financial reports. Previous literature has established higher dividend payouts were associated with progressively lower discretionary accruals and therefore served as a credible signal of high earnings quality (Tong and Miao 2011). Our results seem to suggest that the relationship between dividend intensity and EM does not hold in the Swedish environment when considering both public and private firms. Our findings suggest that the disciplinary effect of dividends applies to firms paying meaningful but moderate dividends. Very high payout ratios, especially in small closely held firms, instead indicate owner compensation activity rather than external reporting quality (Rampershad & De Villiers 2019; Kasanen et al., (1996) ; Karjalainen, J. et. al, 2023).

Earnings management in publicly listed firms

Our third hypothesis tests for the effect of being publicly listed on the relationship between dividend paying status and EM. Our findings suggest that dividend-paying status is moderated by listed status such that the total dividend disciplining effect is approximately 3.5 times stronger for listed firms compared to unlisted firms. This suggests that dividend paying status contributes to improved earnings quality. Burgstahler et. al. argue that capital market forces and key institutional factors like strict disclosure requirements discipline listed firms by increasing the demand for accurate financial information (Burgstahler et al., 2006; Hope et al., 2013).

Capital market scrutiny, stricter reporting and higher corporate governance standards that listed firms are subject to improve these firms' reporting quality. Burgstahler et al. (2006) and Hope et al. (2013) further state that both public and private firms are subject to capital market pressure, however the capital market forces differ depending on the type of company. The difference in intensity of these capital market pressures may explain why the dividend disciplining effect varies between private and listed firms.

Earnings management in Large vs small companies

Our fourth hypothesis tests whether firm size moderates the disciplinary effect of dividends on ADA. The results of our test indicate that the total dividend effect of large firms is roughly 50% of the effect of small firms. One possible explanation for these findings is that large firms are subject to higher disclosure requirements and are under more capital market scrutiny compared to small firms. Large firms are subject to the K3 reporting framework, which is stricter and requires more disclosure compared to the K2 frameworks for smaller companies (Bokföringsnämnden, n.d.; FAR, 2026; Hope et al., 2013). They are also required to submit a cash flow statement (Sveriges Riksdag, 1995), and are required to appoint an auditor (Bolagsverket, 2025). Our findings suggest that in this highly transparent environment, where EM is already heavily disincentivized due to the high level of monitoring and disclosure, the marginal disciplinary power of dividends is partially crowded out by existing regulations. This argument is substantiated by our empirical evidence in Appendix D, which confirms lower baseline ADA for large firms. Conversely, for small firms under simplified accounting rules with more lax oversight,the dividend mechanism provides a much stronger disciplinary effect.

At first glance, the dividend disciplining effect for listed versus private firms and large versus small firms seem to conflict with one another. Given that both listed and large firms are subject to stringent disclosure requirements, a plausible reason why the dividend disciplining effect strengthens for listed firms is because listed and private firms "respond differently to institutional factors" (Burgstahler, 2006). Listed firms are subject to fundamentally different capital market forces by virtue of having their stock publicly listed, meaning their disclosures have an immediate priced effect on the value of the firms' stock. The difference in dividend disciplining effect comes naturally from the inherent characteristic and public visibility of the firm. In

addition to this, the large firm sample is composed predominantly of large unlisted firms (about 93% of the sample) in comparison to listed firms (which are considered large by our definition).

7.2 Control Variables

The control variables used in our main regressions show both expected and unexpected results. We will now discuss each of the variables across our tests.

SIZE has a negative coefficient significant at 1% level for all models. The results are consistent with our predictions and indicate that larger firms are less incentivised to manage earnings due to stricter reporting standards, external scrutiny and more robust internal control systems.

ROA has a positive coefficient significant at the 1% level in all models. These results are in line with our predictions and indicate that highly profitable firms naturally tend to generate larger accrual components (Kothari et al., 2005).

LOSS has a positive coefficient significant at the 1% level in all models. These results are consistent with our prediction that firms experiencing negative earnings have stronger incentives to engage in EM, to force earnings to be in line with stakeholder expectations.

LEV has a negative coefficient significant at the 1% level in all models. These results are not consistent with our prediction and suggest high leverage incentivizes managers to decrease earnings. A possible explanation is that lenders and creditors might scrutinize highly levered firms much more closely, which leads to less opportunity to engage in opportunistic behavior for managers.

AGE has a negative coefficient significant at the 1% level for all models. These results are consistent with our predictions that older and more mature firms have robust operations and reporting processes. These processes reduce the opportunistic behavior of managers to apply aggressive EM compared to younger counterparts.

RE has a negative coefficient significant at the 1% level for all model specifications. These results are consistent with our predictions suggesting that high RE reflects accumulated historical profits and therefore strong financial health. Resulting in less incentives to manage earnings.

CAPITAL has a negative coefficient significant at the 1% level for all models. As predicted capitalization acts as an entry barrier for future competition, resulting in lower proprietary cost of disclosure leading to lower incentives to manage earnings (Cohen, 2008).

FIN has a positive coefficient significant at the 1% level for all models. No predictions were made given the mixed results in prior literature. The positive coefficient indicates that the firms that issue equity or debt are more incentivised to manage earnings. (Teoh et al. 1998a, 1998b).
PAR has a positive coefficient significant at the 1% level for all model specifications. We did not have a prediction for this control variable given lack of prior studies. A possible explanation for these results is that parent companies are often the main decision maker company in a group which may incentivize the manager to manage earnings more to better reflect earnings in line with expectations.
K_ACC has a negative coefficient significant at the 1% level. Given that no initial predictions were made for this control variable due to the lack of prior studies. A plausible explanation for consolidated accounts to have a negative coefficient is that consolidated accounts likely covering group consolidation will naturally remove any inter-group transactions and likely be under stricter accounting standards.
AUDIT_REC has a negative coefficient at the 1% level in all tests. These results are consistent with our prediction and theory that presence of an audit recommendation acts as a severe external disciplinary mechanism.
AUDIT_ADV has a small negative coefficient that is insignificant in all of our tests. These results are not consistent with our predictions. As we expected several audit adverse opinions to significantly alter reporting behavior. A possible explanation for the insignificance is that adverse audit opinions are extreme and rare in the full sample creating statistical noise.

Table 3. Hypothesis 1: Dividend Payment Status and Earnings Management

	(A) Raw Specification			(B) Control Specification			(C) Main Specification		
	Coefficients	SE	t-stat	Coefficients	SE	t-stat	Coefficients	SE	t-stat
DIV	-0.0093***	0.0003	-34.08	-0.0093***	0.0003	-31.26	-0.0089***	0.0007	-12.97
SIZE				-0.0045***	0.0001	-30.03	-0.0067***	0.0002	-27.48
ROA				0.0473***	0.0017	28.57	0.0386***	0.0073	5.29
LOSS				0.0354***	0.0005	74.02	0.0314***	0.0016	19.63
LEV				-0.0468***	0.0010	-48.77	-0.0346***	0.0018	-18.84
AGE				-0.0116***	0.0002	-58.46	-0.0086***	0.0002	-35.65
RE				-0.0447***	0.0008	-54.03	-0.0417***	0.0017	-24.02
CAPITAL				-0.0590***	0.0007	-84.13	-0.0513***	0.0017	-30.00
FIN				0.0233***	0.0003	74.15	0.0231***	0.0005	48.44
PAR				0.0067***	0.0005	13.83	0.0048***	0.0007	6.91
K_ACC				-0.0055***	0.0007	-7.55	-0.0068***	0.0011	-5.94
AUDIT_REC				-0.0220***	0.0006	-38.21	-0.0160***	0.0006	-25.64
AUDIT_ADV				-0.0072***	0.0016	-4.46	-0.0009	0.0019	-0.46
Constant	0.1811***	0.0002	958.27	0.2829***	0.0012	233.17	0.2857***	0.0019	150.02
Industry + Year FE	No			No			Yes		
Cluster SE	Robust			Robust			Firm + Year		
R-squared	0.0008			0.0499			0.0624		
Adj. R-squared	0.0008			0.0499			0.0623		
N. of Obs.	1,347,407			1,347,399			1,347,399		

Note: Table 3 presents the results of the linear regression model. The model examines the relationship between DIV and ADA with the vector controls listed in 4.5.2 estimated across three specifications: (A) the Raw specification presents results of the unconditional ADA on DIV. Specification (B) and consequently (C) include the vector of control variable. (C) Main specification further includes Industry and Year fixed effects. Specification (A) and (B) apply robust clustering, while (C) applies two-way firm and year clustering. Continuous variables are winsorized at the 1st and 99th percentiles. The cells reports: Coefficient, Standard error, and t-statistics. Significance levels are denoted: *p<0.1; **p<0.05; ***p<0.01

Table 4: Hypothesis 2 results Dividend payments and payout quartiles (non-payer reference)

	PAYOUT Quartiles		
	Coefficients	SE	t-stat
PAYOUT Q1	0.0010	0.0008	1.26
PAYOUT Q2	-0.0099***	0.0010	-10.29
PAYOUT Q3	-0.0145***	0.0009	-16.78
PAYOUT Q4	-0.0122***	0.0007	-16.45
SIZE	-0.0071***	0.0002	-28.45
ROA	0.0353***	0.0070	5.01
LOSS	0.0295***	0.0015	19.08
LEV	-0.0351***	0.0018	-19.87
AGE	-0.0083***	0.0002	-33.54
RE	-0.0434***	0.0018	-24.52
CAPITAL	-0.0515***	0.0017	-30.30
FIN	0.0239***	0.0004	53.62
PAR	0.0048***	0.0007	6.85
K_ACC	-0.0070***	0.0011	-6.08
AUDIT_REC	-0.0157***	0.0006	-24.66
AUDIT_ADV	-0.0005	0.0019	-0.29
Constant	0.2887***	0.0019	152.34
Industry FE	Yes		
Year FE	Yes		
Cluster SE	Firm + Year		
R-squared	0.0629		
Adj. R-squared	0.0628		
N	1,347,399		

Note: Table 4 presents the results of the linear regression model. The model examines the relationship between dividend propensity measured by four binary quartile indicators and ADA with the controls vector listed in 4.5.2 for the full sample. The model includes Industry and Year fixed effects, alongside two-way firm and year clustering. Continuous variables are winsorized at the 1st and 99th percentiles. The cells report: Coefficient, Standard error, and t-statistics. Significance levels are denoted: *p<0.1; **p<0.05; ***p<0.01

Table 5. Adjacent-Quartile Comparisons of Earnings Management

	PAYOUT quartiles		
Comparison	**Coefficient**	**SE**	**t-stat**
Q2 vs Q1	-0.0072***	0.0007	-10.16
Q3 vs Q2	-0.0029***	0.0008	-3.50
Q4 vs Q3	0.0085***	0.0007	11.53

Note: Table 5 presents results of pairwise Lincom (linear combinations of estimators) testing. Each row tests the difference in ADA between two adjacent payout quartiles, such as *Q2* vs *Q1*. Only dividend paying firms are included. Continuous variables are winsorized at the 1st and 99th percentiles. The cells report: Coefficient, Standard error, and t-statistics. The model applies two way standard clustering by firm and year. Significance levels are denoted: *p<0.1; **p<0.05; ***p<0.01.

Table 6. Hypothesis 3: Listed-Firm Interaction

	(A) Interaction			(B) Listed only			(C) Private only		
	Coefficients	SE	t-stat	Coefficients	SE	t-stat	Coefficients	SE	t-stat
DIV	-0.0088***	0.0007	-12.82	-0.0095	0.0085	-1.13	-0.0089***	0.0007	-12.85
LISTED	0.0134**	0.0050	2.66						
DIV x LISTED	-0.0228***	0.0063	-3.59						
SIZE	-0.0067***	0.0003	-26.95	-0.0149***	0.0043	-3.47	-0.0067***	0.0002	-26.93
ROA	0.0389***	0.0073	5.31	-0.1449***	0.0260	-5.58	0.0398***	0.0073	5.46
LOSS	0.0313***	0.0016	19.61	-0.0072	0.0083	-0.87	0.0314***	0.0016	19.60
LEV	-0.0344***	0.0018	-18.76	-0.0393*	0.0208	-1.89	-0.0344***	0.0018	-18.72
AGE	-0.0086***	0.0002	-35.70	-0.0046	0.0060	-0.76	-0.0085***	0.0002	-35.72
RE	-0.0416***	0.0018	-23.57	-0.0216***	0.0073	-2.96	-0.0417***	0.0018	-23.19
CAPITAL	-0.0513***	0.0017	-29.88	-0.0316	0.0217	-1.46	-0.0513***	0.0017	-29.68
FIN	0.0231***	0.0005	48.42	0.0155**	0.0062	2.50	0.0231***	0.0005	48.17
PAR	0.0048***	0.0007	6.92	-0.0148*	0.0086	-1.72	0.0048***	0.0007	6.87
K_ACC	-0.0070***	0.0012	-5.99	0.0086	0.0110	0.78	-0.0069***	0.0012	-5.75
AUDIT_REC	-0.0160***	0.0006	-25.63	-0.0132	0.0573	-0.23	-0.0160***	0.0006	-25.86
AUDIT_ADV	-0.0008	0.0020	-0.43	-0.0560	0.0771	-0.73	-0.0008	0.0019	-0.39
Constant	0.2859***	0.0019	150.64	0.3966***	0.0588	6.75	0.2855***	0.0019	150.31
Industry-Year FE	Yes			Yes			Yes		
Cluster SE	Firm + Year			Firm + Year			Firm + Year		
R-squared	0.0624			0.1013			0.0624		
Adj. R-squared	0.0623			0.0803			0.0623		
N	1,347,399			3,716			1,343,680		
(D) DIV + DIVxLISTED: Coefficient = –0.0316, SE = 0.0061, t-stat= –5.17, p = 0.0000									

Note: Table 6 presents the results of the linear regression model estimating the relationship between DIV and LISTED and their interaction effect. Panel (A) presents the interaction model with all control variables from the vector for the full sample. Panel (B) presents the results of the DIV and ADA relationship strictly for the listed subsample. Likewise panel (C) presents the results of DIV and ADA strictly for private subsample. All model specifications implement two-way fixed effects for industry and year, alongside two-way clustering of standard errors by firm and year. Continuous variables are winsorized at the 1st and 99th percentiles. The cells report: Coefficient, Standard error, and t-statistics. Row (D) shows the results for the total effect of dividends on listed firms. Significance levels are denoted: *p<0.1; **p<0.05; ***p<0.01

Table 7. Hypothesis 4: Large-Firm Interaction

	(A) Interaction effect			(B) Large only			(C) Small only		
	Coefficients	SE	t-stat	Coefficients	SE	t-stat	Coefficients	SE	t-stat
DIV	-0.0091***	0.0007	-12.85	-0.0051***	0.0014	-3.67	-0.0091***	0.0007	-12.71
LARGE	-0.0018	0.0013	-1.36						
DIV x LARGE	0.0046**	0.0017	2.70						
SIZE	-0.0067***	0.0003	-26.71	-0.0018	0.0013	-1.44	-0.0069***	0.0002	-28.40
ROA	0.0386***	0.0073	5.29	-0.0140	0.0132	-1.06	0.0398***	0.0072	5.54
LOSS	0.0314***	0.0016	19.57	0.0209***	0.0028	7.46	0.0317***	0.0016	19.42
LEV	-0.0346***	0.0018	-19.05	-0.0395***	0.0049	-8.07	-0.0343***	0.0018	-18.90
AGE	-0.0086***	0.0002	-35.75	-0.0073***	0.0013	-5.45	-0.0086***	0.0002	-37.07
RE	-0.0417***	0.0018	-23.60	-0.0283***	0.0044	-6.37	-0.0422***	0.0018	-23.24
CAPITAL	-0.0513***	0.0017	-29.87	-0.0386***	0.0039	-9.78	-0.0518***	0.0018	-28.40
FIN	0.0231***	0.0005	48.59	0.0167***	0.0017	9.54	0.0234***	0.0005	49.92
PAR	0.0048***	0.0007	6.85	0.0014	0.0036	0.38	0.0048***	0.0007	7.11
K_ACC	-0.0070***	0.0012	-5.68	-0.0075**	0.0029	-2.54	-0.0053***	0.0016	-3.23
AUDIT_REC	-0.0160***	0.0006	-25.97	-0.0042	0.0130	-0.32	-0.0157***	0.0006	-25.91
AUDIT_ADV	-0.0009	0.0019	-0.46	0.0151	0.0215	0.70	-0.0007	0.0019	-0.36
Constant	0.2858***	0.0019	148.03	0.2226***	0.0231	9.62	0.2866***	0.0019	152.07
Industry-Year FE	Yes			Yes			Yes		
Cluster SE	Firm + Year			Firm + Year			Firm + Year		
R-squared	0.0624			0.0531			0.0622		
Adj. R-squared	0.0623			0.0512			0.0621		
N. of Obs.	1,347,399			51,127			1,296,272		

(D) DIV + DIV x LARGE: *β = –0.0045**, SE = 0.0016, t = -2.76, p = 0.0111*

Note: Table 7 presents the results of the linear regression model estimating the relationship between DIV and LARGE and their interaction effect. Panel (A) presents the interaction model with all control variables from the vector for the full sample. Panel (B) presents the results of the DIV and ADA relationship strictly for the LARGE subsample. Likewise panel (C) presents the results of DIV and ADA strictly for SMALL subsample. All model specifications implement two-way fixed effects for industry and year, alongside two-way clustering of standard errors by firm and year. Continuous variables are winsorized at the 1st and 99th percentiles. The cells report: Coefficient, Standard error, and t-statistics. Row (D) shows the results for the total effect of dividends on large firms. Significance levels are denoted: *p<0.1; **p<0.05; ***p<0.01

7.3 Robustness checks

7.3.1 Sensitivity to winsorization thresholds (R1)

The main specification follows Tong and Miao (2011) by winsorizing all continuous variables at the 1st and 99th percentiles. R1 serves as a robustness check to estimate H1 with tighter 5/95th percentile thresholds. This allows us to stress test our results as heavier trimming reduces the

influence of accrual outliers and tests whether the main results depend on observations in the distributional tails. The results reported in the Appendix F (Panel A), retain a similar sign, magnitude and significance level as that of the main specification. This further provides support for our main specification.

7.3.2 Directional analysis using signed discretionary accrual (R2)

The main specification utilizes the absolute value of performance-adjusted discretionary accruals (ADA) because our core hypotheses focus on the overall magnitude of EM rather than its direction. However, the ADA metric treats income-increasing and income-decreasing EM identically, thereby obscuring whether dividend-paying firms manage earnings upward or downward. To address this limitation and examine the directional behavior, we re-estimate all models by substituting ADA with signed discretionary accruals. The baseline dividend-paying effect for (H1) as reported in Appendix F (Panel B) explains that the DIV coefficient is negative and significant ($\beta = –0.0223, p < 0.01$). This indicates that dividend paying firms engage in downwards earnings management and provides partial support for our hypothesis; as we would expect the discretionary accrual to be closer to zero highlighting “less” EM. Nevertheless the income-decreasing aspect is in line with previous literature (Karjalainen J et al., 2023)

7.3.3 Supplementary Proxy – Value Relevance (VR)

To further validate our primary findings, we conduct a robustness check employing the value-relevance model (Tong and Miao 2011), to evaluate the extent to which the reported earnings are reflected in the stock prices. Because this model relies on market pricing data, its applications are constrained to the publicly listed subsample. This proxy serves to isolate the disciplinary effect of dividend paying status (DIV) within the publicly listed subsample. The complete methodological specification of the value relevance model is detailed in Appendix G. The results reported in Appendix F (Panel C) strengthen our discussion as the coefficient for DIV is negative and significant ($\beta = -0.01654, p < 0.01$). The results indicate that for listed firms the dividend-payers have a lower discretionary accruals in comparison to non-payers, in line with broader EM literature (Kothari et al., 2005; Tong and Miao 2011; Sirait and Siregar 2014; Nguyen and Bui 2019). Although the VR model reinforces our discussion for the H3

specification; the VR model faces significant limitations. The 10-year window requirement leaves only 109 firms which significantly limits the generalizability of our results.

7.4 Research Method Discussion

7.4.1 Explanatory power

The adjusted R^2 of our main specification ranges between 5.24 to 7.45 percent, while modest this is in line with the broader EM literature, where R^2 can vary considerably (Tong and Miao 2011; Hribar and Nichols 2007; Daniel et al., 2007).

7.4.2 Statistical tests

A basic assumption of OLS is Homoskedasticity. Heteroskedasticity refers to the non-constant variance of the regression residuals, which violates the OLS assumptions. The existence of heteroskedasticity can impact the standard errors and influence the significance level due to bias, although it does not impact the OLS coefficient estimates (Cohen et al., 2002). Because our dataset consists of 1.3 million firm years, unequal variance in residuals is expected. To ensure the validity of OLS assumptions we implement two-way standard error clustering at the firm and year level (Peterson, 2009). Robust standard errors also help mitigate any risk of autocorrelation.

Another basic assumption of OLS is no multicollinearity. Multicollinearity refers to the phenomenon when independent variables in a multi-regression model are highly correlated with each other. Multicollinearity poses a severe risk of skewing results and providing unreliable interpretations (Farrar and Glauber, 1967). We test multicollinearity using Variance Inflation Factors (VIF). VIF exceeding 10 is traditionally considered to be a significant risk of multicollinearity (Wooldridge, 2012). We use a conservative VIF threshold of 4 (O'Brien 2007). The results presented in Appendix E are largely in line with our expectation, and fall well below the specified thresholds.

7.4.3 Validity, Reliability, and Comparability

The study's robust data handling, sample selection, adherence to Swedish standards and definitions, broad timeline and well-established proxies help contribute towards the validity of our conclusions. We restrict our sample exclusively to firms filing earnings reports in Sweden to avoid including foreign domiciled firms. We exclude the financial sector and micro-entities

reliant on cash-based accounting, to guarantee that all evaluated firms operate under comparable reporting frameworks. Furthermore, we align all sample filters with statutory Bolagsverket definitions. Econometrically, while our extensive control variables vector helps mitigate confounding effects, the risk of omitted variable bias cannot be entirely eradicated. Additionally, to strengthen robustness our primary model deploys industry and year fixed effects that help absorb structural and temporal shocks, alongside two-way clustering for standard errors.

Our research design systematically adapts established EM literature to the Swedish institutional setting. The reliability of our study is reinforced with rigorous robustness checks, diverse model specifications, and supplementary value relevance proxy. The study ensures high theoretical and empirical validity, by primarily relying on well established peer-reviewed articles published in reputable journals. We use Serrano as a reliable database maintained by the Swedish House of Finance providing data from filing to Bolagsverket. Furthermore, to mitigate data handling issues we cross-verified sections of results with Retriever Business. Ultimately, the robust methodological framework adopted by this study helps ensure transparency and replicability for future research.

To ensure the study's comparability, this study employs proxies, empirical models that are well-established in EM literature. Our 24-year fiscal range provides a robust analysis of the Swedish market; however, this extended timeframe spans over major regulatory accounting changes such as the adoption of IFRS in Sweden (2005), or the K2/K3 adoption in 2014. We acknowledge that these changes may limit direct comparability to other studies. Our study primarily focuses on measuring the magnitude of EM's relationship to dividends, but to improve comparability we also test for earning management's directionality to align with standard research practices. We believe that the study contributes to EM literature by extending the dividend-discipline hypothesis into an under-researched institutional setting, providing insights into reporting behavior of both public and private firms.

7.4.4 Limitations

We acknowledge the inherent limitation of possible endogeneity. Our theoretical framework presented in Section 2 posits that dividend payments constrain EM, however it is plausible that

firms with naturally better reporting quality and low discretionary accruals are inclined to pay dividends meaning they may self-select into the dividend-paying status. Consequently, our findings must be interpreted as robust cross-sectional association rather than causal effects. We assume that all dividends paid in our study are cash dividends.

Accruals based proxies for EM have been the dominant approach in the literature since Jones (1991), but they face sustained methodological criticism. The issue is that managerial discretion is not directly observable. When decomposing total accruals into “normal” and "abnormal" components, any specification error can contaminate the residual, possibly due to unexplained variation that exists within industries (McNichols, 2000). One solution is to focus on a single component of EM to improve detection precision, although this entails that other components might be missed (McNichols, 2000; Stubben, 2010). Consequently, we acknowledge that discretionary accrual is merely a proxy of earnings quality rather than a direct measurement, and any conclusions are based on the assumption that the ADA model is able to accurately distinguish between discretionary and non-discretionary accruals.

Building on this, Dechow et al. (2010) argue that EM is too broad a construct for any single proxy to capture, and recommends using multiple proxies to capture different effects. We originally intended to triangulate our findings using the Kothari ADA model alongside the Dechow and Dichev (2002) accruals-quality measure and value-relevance model. However, the Serrano database does not report “taxes payables” as a separate variable, which renders the accrual-quality incomputable. Furthermore, the extensive data-requirements of the value-relevance model restricted its application to a limit given its extensive data-requirements could only be computed on a small proportion of the listed subsample. Consequently we limited it to a robustness check. Therefore our primary analysis solely relies on the Kothari ADA model. Moreover, the lack of cash flow data also restricted this study’s scope to accrual based EM, as we could not apply Real Earnings Management (REM) proxies. This is particularly relevant as firms are often noted to switch from accruals based to REM as it becomes more costly (Zang, 2012).

Another methodological constraint relates to the two-step regression procedure. In the first step, we estimate discretionary accrual and in the second stage, we regress these residuals against the dividend variables. This approach can introduce estimation error from the first stage into the

second stage, potentially biasing the coefficient and standard errors (Jackson, 2022). The one-step approach is argued to mitigate this, however, the two-step approach remains an empirical standard (Jackson, 2022; Tong and Miao, 2011; Dechow et al, 2010; Nguyen and Bui, 2019).

Beyond proxy concerns, the Swedish setting also introduces its own limitations. Our sample contains 2000 to 2023 data. This timeframe includes two significant accounting regulatory changes, namely adoption of IFRS for listed firms in 2005 and mandatory adoption of K2/K3 frameworks for Swedish private firms in 2014. We acknowledge this as a potential source of bias in our study. The study also faces sample composition constraints. The listed firms-year accounts for just 0.276% of the entire sample, meaning Swedish private firms dominate the sample. This is primarily because we required a match between FinBas and Serrano databases, meaning any unmatched companies were excluded; moreover there were several foreign companies that were listed on the Stockholm stock exchange which were removed due to data unavailability. We acknowledge that the sample composition limits the statistical power for our listed versus private interaction tests and VR model.

7.5 Future Research

One of the primary limitations for this study is that we only used one AEM proxy, which is ADA. As has been previously established, EM is best measured with multiple proxies. We therefore suggest that further research is conducted on the dividend association to EM of Swedish firms using both REM and AEM proxies (Dechow et al., 2010). We believe that the data required for these models may be available, especially for listed firms. We also suggest an investigation into whether there is a difference in the dividend association with EM among different industries. Furthermore, we suspect that changes to accounting standards over the time period covered by our sample may have influenced the dividend association to EM. As such, we believe a study on this topic would provide valuable insight into how changes to accounting standards may change firms' EM practices in the future, which would be valuable knowledge to standards setters and investors.

8. Conclusion

This study investigates the disciplinary effect of dividends on EM for Swedish firms for the fiscal years 2000-2023, utilizing the Kothari model to analyze the dividend effect on EM across payout intensity, firm size and listing status. Our results indicate a negative association between dividends and EM. We also document a non-monotonic relationship across payout intensity, which weakens at the highest payout levels, reflecting income shifting tax incentives rather than traditional external signalling for dividends. Furthermore, the disciplinary effect is weaker for large firms, as they are subject to stricter reporting requirements which diminish the value of the disciplinary effect. Lastly, the listed status interaction effect confirmed that the disciplinary mechanism of dividend remains significantly stronger for listed firms compared to private firms.

Previous studies on the dividend EM association have been conducted in various contexts like North America, Vietnam, Indonesia, Europe, and using global data. Our findings align with the general consensus among these papers that there is a negative association between dividends and EM. Our findings further indicate that dividends act as a signalling mechanism that helps investors and stakeholders identify firms with credible earnings. Our findings are also in line with previous literature with regards to the effects of dividends on EM in private firms, which is that the relationship in private firms is weaker given that these firms may manage earnings for tax incentives rather than as a signal to investors. Additionally, our findings indicate that Sweden's regulations and mechanisms impact the dividend-EM relationship, making it weaker for firms with high levels of governance. We acknowledge that our accrual-based proxy cannot capture real EM. As such, we propose a study that uses real-EM proxies to test whether the disciplinary effect of dividends operates symmetrically across both channels.

Our study contributes to EM literature in three primary ways. First, it extends empirical evidence of the dividend disciplining hypothesis utilizing a massive panel of nearly 1.35 million firm-year observations dominated by Swedish private SMEs, an underrepresented setting in previous literature. Second, we identify a non-monotonic dividend-disciplining effect at highest payout levels for private firms, consistent with tax-driven incentives. Third, we identify a governance effect among large firms, wherein the dividend-disciplinary effect is weakened by monitoring mechanisms.

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10. Appendix

Appendix A: Pearson Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) ADA	**1.000**							
(2) DIV	-0.029	**1.000**						
(3) LISTED	0.007	-0.018	**1.000**					
(4) LARGE	-0.029	0.017	0.265	**1.000**				
(5) SIZE	-0.116	0.094	0.132	0.481	**1.000**			
(6) ROA	0.027	0.345	-0.067	-0.034	0.026	**1.000**		
(7) LOSS	0.068	-0.296	0.056	0.017	-0.103	-0.587	**1.000**	
(8) LEV	-0.095	-0.248	-0.010	0.026	0.213	-0.316	0.181	**1.000**
(9) AGE	-0.107	0.079	0.011	0.091	0.240	-0.058	-0.032	0.002
(10) RE	-0.063	0.167	-0.003	0.025	0.169	-0.027	-0.045	-0.366
(11) CAPITAL	-0.148	-0.092	-0.023	0.031	0.289	-0.187	0.020	0.631
(12) FIN	0.070	0.058	0.035	0.018	0.015	-0.063	0.113	0.169
(13) PAR	-0.020	0.017	0.105	0.318	0.393	-0.024	0.023	0.068
(14) K_ACC	-0.030	0.022	0.179	0.546	0.429	-0.049	0.049	0.087
(15) AUDIT_REC	-0.083	0.066	0.015	0.061	0.233	-0.060	-0.032	0.038
(16) AUDIT_ADV	0.023	-0.076	-0.001	-0.013	-0.041	-0.086	0.097	0.040

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(9) AGE	**1.000**							
(10) RE	0.235	**1.000**						
(11) CAPITAL	0.077	-0.144	**1.000**					
(12) FIN	-0.085	-0.156	0.048	**1.000**				
(13) PAR	0.093	0.039	0.030	0.027	**1.000**			
(14) K_ACC	0.055	-0.004	0.082	0.031	0.577	**1.000**		
(15) AUDIT_REC	0.252	0.048	0.082	-0.028	0.095	0.072	**1.000**	
(16) AUDIT_ADV	-0.028	-0.081	-0.017	0.018	-0.003	-0.008	-0.319	**1.000**

Note: Appendix A presents the results of the Pearson pairwise correlation. The table is divided into two parts due to space constraints. Column number corresponds to the row numbers of the variables on the left. Variable definitions are reported in the notes to Table 1.

Appendix B. Univariate Comparison of Earnings Management Proxy by Dividend Status

	(A) Payers (N=594,674)			(B) Non-Payers (N=752,725)			(C) Differences	
Proxy	**Mean**	**Median**	**STD**	**Mean**	**Median**	**STD**	**Mean**	**Median**
ADA	0.1718	0.1286	0.1530	0.1811	0.1337	0.1640	-0.0093***	-0.0051***
							(33.80)	(23.25)

Note: Appendix B presents the results of a comparison of the (ADA) between dividend payers (A) and non-payers (B) (2000-2023) for the full sample. Column (C) reports differences (payers minus non-payers) with two-sided t-tests for means (t-stats) and wilcoxon rank-sum tests for medians (z-stat). Continuous variables are winsorized at the 1st and 99th percentiles. Significance levels are denoted: *p<0.1; **p<0.05; ***p<0.01.

Appendix C: Mean values across PAYOUT quartiles (dividend-paying firms only)

	Q1 (lowest)	Q2	Q3	Q4 (highest)
Total assets (KSEK)	56,902.816	34,887.620	21,968.177	15,905.752
Sales (KSEK)	43,108.079	37,092.646	26,527.406	21,374.509
Employees	17.631	17.711	14.499	11.713
ROA	0.145	0.144	0.159	0.087
Net income (KSEK)	4,476.880	2,557.936	1,921.879	904.452
Leverage	0.133	0.112	0.096	0.112
RE / TA	0.258	0.239	0.195	0.257
Age (years)	16.389	16.615	16.491	17.368
DA|	0.171	0.170	0.174	0.170
N (firm-years)	**142,159**	**142,155**	**142,205**	**142,099**

Note: Appendix C presents the descriptive statistics of dividend paying firms in Sweden 2000-2023. Quartiles are defined using payout ratios. Continuous variables are winsorized at the 1st and 99th percentiles.

Appendix D: Mean values by Size

	Large	Small
ADA	0.154	0.178

Note: Appendix D presents the mean value of ADA for Large and small companies.

Appendix E: Variance Inflation Factors

Variable	VIF
DIV	1.25
SIZE	1.92
ROA	1.83
LOSS	1.62
LEV	2.26
AGE	1.18
RE	1.42
CAPITAL	1.81
FIN	1.08
PAR	1.58
K_ACC	1.96
AUDIT_REC	1.26
AUDIT_ADV	1.15
LISTED	1.09
LARGE	1.71

Note: Appendix E presents VIF results of variables using the main specification. Max VIF is LEV = 2.26. All values are strictly below the threshold for multicollinearity.

Appendix F: All Robustness Check

	(A) 5/95 Winsorization			(B) Signed DA			(C) Value Relevance Model		
	Coefficients	**SE**	**t-stat**	**Coefficients**	**SE**	**t-stat**	**Coefficients**	**SE**	**t-stat**
DIV	-0.0123***	(0.0006)	[-20.03]	-0.0223***	(0.0015)	[-15.00]	-0.1654***	(0.0568)	[-2.91]
SIZE	-0.0076***	(0.0003)	[-28.04]	-0.0017***	(0.0003)	[-6.60]	0.0282*	(0.0145)	[1.94]
ROA	0.1119***	(0.0106)	[10.55]	0.0509***	(0.0020)	[24.91]	-0.0360	(0.1351)	[-0.27]
LOSS	0.0399***	(0.0014)	[29.49]	-0.0170***	(0.0005)	[-33.60]	0.0102	(0.0567)	[0.18]
LEV	-0.0298***	(0.0022)	[-13.82]	0.1168***	(0.0040)	[29.09]	-0.1977	(0.1331)	[-1.49]
AGE	-0.0084***	(0.0002)	[-35.36]	-0.0043***	(0.0004)	[-12.08]	0.0000	(.)	[.]
RE	-0.0356***	(0.0031)	[-11.41]	0.0669***	(0.0022)	[30.78]	0.0029	(0.0157)	[0.19]
CAPITAL	-0.0498***	(0.0018)	[-27.33]	-0.0699***	(0.0022)	[-31.36]	0.0283	(0.1076)	[0.26]
FIN	0.0232***	(0.0005)	[44.91]	0.0620***	(0.0013)	[46.89]	-0.0338	(0.0332)	[-1.02]
PAR	0.0050***	(0.0007)	[7.37]	-0.0043***	(0.0007)	[-5.97]	0.0395	(0.0889)	[0.44]
K_ACC	-0.0082***	(0.0010)	[-7.87]	0.0006	(0.0012)	[0.53]	-0.0180	(0.0807)	[-0.22]
AUDIT_REC	-0.0148***	(0.0006)	[-23.85]	-0.0034***	(0.0011)	[-3.05]	-0.2735***	(0.0844)	[-3.24]
AUDIT_ADV	0.0023	(0.0019)	[1.21]	-0.0118***	(0.0025)	[-4.77]	0.0000	(.)	[.]
Constant	0.2833***	(0.0022)	[129.96]	0.0014	(0.0022)	[0.64]	-0.1832	(0.2486)	[-0.74]
Industry Year FE	Yes			Yes			Yes		
Cluster SE	Firm + Year			Firm + Year			Firm		
Adj. R-squared	0.0633			0.0228			0.2067		
N	1,347,399			1,347,399			570		

Note: Appendix F presents the results of our robustness checks. Panel (A) presents the H1 specification but winsorized at a stricter threshold of 5 and 95 percentile for the whole sample ranging from 2000-2023. Panel (B) presents the results of the signed Discretionary Accrual supplementary proxy covering the whole sample for year 2000-2023. Panel (C) presents the results of the Value Relevance model which is applicable to the listed firm subsample only composed of 570 observations coming from 109 firms listed on the Stockholm exchange. Panel C only clusters standard errors one-way by firm. Note that for Panel C the variables AUDIT_ADV and AGE controls are dropped due to near-zero within cell variance. In panels (B) and (C), continuous variables are winsorized at the 1st and 99th percentiles. Cells report: coefficient, standard error, and t-statistics. Significance levels are denoted: *p<0.1; **p<0.05; ***p<0.01

Appendix G: Methodology for Value Relevance Model

For each listed firm we estimate the rolling-window regression

$$RET_{it} = \beta_0 + \beta_1 EARN_{it} + \beta_2 \Delta EARN_{it} + \epsilon_{it} \quad \text{(A)}$$

RET is the 15 month buy-and-hold return which spans 12 months before fiscal year end to 3 months after, EARN is the net income scaled by total market value of equity at the end of the prior fiscal year, and ΔEARN is the year-on-year change in EARN. The monthly prices obtained from FinBas are adjusted for corporate action (stock splits, stock dividends and cash dividends), this allows for comparability over time as raw prices would introduce mechanical jumps unrelated to economic returns. We define $VR_{it} = -1 \times R_{it}^2$ obtained from Equation (6), so that higher values indicate higher EM, consistent with the ADA specification. VR is then regressed on the same variables as the main specification.

Appendix H: Four OLS specifications.

To test our hypotheses, we estimate four OLS specifications. Each specification includes the full vector of control variables Z defined in Section 4.5.2, two-way industry and year fixed effects, alongside two-way clustered standard errors by firm and year.

Appendix

Hypothesis 1: Baseline dividend-paying status effect

$$ADA_{(i,t)} = \alpha + \beta_1 DIV_{(i,t)} + \sum \gamma Z_{(i,t)} + IndustryFE + YearFE + \varepsilon_{(i,t)} \quad \text{(B)}$$

where ADA is the dependent variable for firm *i* in year *t*; DIV equals one if firm *i* paid a dividend in year *t* and zero otherwise. A negative B1 would support H1.

Hypothesis 2: Payout intensity effect across quartiles

$$ADA_{(i,t)} = \alpha + \beta_1 Q1_{(i,t)} + \beta_2 Q2_{(i,t)} + \beta_3 Q3_{(i,t)} + \beta_4 Q4_{(i,t)} + \sum \gamma Z_{(i,t)} + IndustryFE + YearFE + \varepsilon_{(i,t)} \quad \text{(C)}$$

where *Q1-Q4* are binary indicators equal to one if the firm-year falls into the corresponding payout-quartile, with non-payers being the omitted reference category. A monotonically more negative coefficient sequence in absolute terms would support H2.

Hypothesis 3: Moderating effect of listed status

$$ADA_{(i,t)} = \alpha + \beta_1 DIV_{(i,t)} + \beta_2 LISTED_{(i,t)} + \beta_3 (DIV_{i,t} \times LISTED_{i,t}) + \sum \gamma Z_{(i,t)} + IndustryFE + YearFE + \varepsilon_{(i,t)} \quad (D)$$

where LISTED equals one if firm *i* is listed on the Swedish stock exchange in year *t*. The coefficient β_3 on the interaction term captures the

incremental dividend-disciplining effect for listed firms relative to private firms. The total effect is given by $\beta_1 + \beta_3$. A negative and significant β_3 supports H3.

Hypothesis 4: Moderating effect of firm size

$$ADA_{(i,t)} = \alpha + \beta_1 DIV_{(i,t)} + \beta_2 LARGE_{(i,t)} + \beta_3 (DIV_{(i,t)} \times LARGE_{(i,t)}) + \sum \gamma Z_{(i,t)} + IndustryFE + YearFE + \varepsilon_{(i,t)} \quad (E)$$

where LARGE equals one if firm *i* is considered LARGE in year *t*. The coefficient β_3 on the interaction term captures the incremental dividend-disciplining effect for large firms relative to small firms. The total effect is given by $\beta_1 + \beta_3$. A negative and significant β_3 supports H4.

Appendix I: AI Usage Disclosure

In our study, we make use of generative artificial intelligence (AI) in accordance with Stockholm School of Economics AI Policy. We used Claude by Anthropic (version Opus 4.7) and Gemini 3 Pro by Google. Claude was primarily used for handling complex coding processes and to identify and resolve any coding discrepancies. Gemini was primarily used when Claude was not available also for coding assistance. We also used both models to assist in correcting grammar and punctuations. The models were also used to help locate specific relevant literature, however all sources cited in this study were manually verified, to ensure reliability. We want to make clear that despite the use of Gen AI, all the fundamental research, ideas, arguments, hypotheses and structure presented in this thesis are ours. AI was not used to fundamentally develop the ideas and arguments. Both authors are aware of the risks AI poses, especially in terms of risking "hallucination". Therefore, we ensured to carefully handle all language models output in regards to code and literature by double verifying and critically analyzing each output to mitigate any risk of academic dishonesty.