
Are Dividends Signaling the Earnings Quality? Evidence from Canada

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Abstract:

Purpose: The purpose of this research is to investigate the informativeness of dividend payouts with respect to the earnings quality.

Design/methodology/approach: A sample of 756 firm-year observations listed on the TSX 300 index during 14 years, from 2011 to 2024, was examined. The quality of earnings was estimated by the accrual-based earnings management and the real earnings management.

Findings: Results show that dividend-paying Canadian firms and those with high dividend payouts exhibit higher quality in discretionary accruals but poorer quality in abnormal real earnings management. Nevertheless, no significant association was found between increases in the dividend payout ratio and earnings quality.

Research implications: The results confirm that dividend signaling theory exhibits certain weaknesses. They show that it is limited in its ability to detect sophisticated forms of earnings management, namely real earnings management. Consequently, while dividend distributions reassure the firm's stakeholders about the authenticity of the financial statements and the absence of accounting manipulations, they do not provide absolute assurance against hidden operational manipulations.

Originality/value: This study adds to the empirical literature on the informativeness of dividend payouts by examining whether the dividend policy of a firm could be an indicator of its earnings quality. To the best of our knowledge, no previous study has examined the relationship between the dividend payouts and the real earnings management and this is the first study that examines, in the Canadian context, the effect of the dividend payouts on the earnings management quality.

Keywords: Dividends, signaling theory, accruals based earnings management, real earnings management, substitution strategy.

JEL Codes: M410, G350.

Paper Type: Research paper.

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1. Introduction

Dividend policy is a crucial topic in corporate finance, representing not only cash distribution of a firm, but also a summary of its ability to create value (Ohlson, 1990; Feltham and Ohlson, 1995). Over time, dividends have lost their importance in firm valuation with earnings taking their place in this function. This dominance of accounting benefits in firm valuation and investment decisions has been contested following a series of financial scandals which revealed that managers may engage in aggressive and « false » financial reporting by inflating profits.

In this context, reported earnings become unreliable and investors shift their attention toward the quality of the reported earnings rather than their levels (Glassman, 2005; Skinner and Soltes, 2011; Caskey and Hanlon, 2013).

The accounting figures reported by the companies were called into question and in 2005, Glassman reported that ‘dividends are the most transparent evidence of profits’. Thus, based on the premise that dividend paying firms need to report authentic earnings in order to maintain their dividend payouts, an important stream of research emerged with the aim to examine the role of distributed dividends in validating the quality of reported earnings (Skinner and Soltes, 2011; Tong and Miao, 2011; Caskey and Hanlon, 2013; Sirait and Siregar, 2014; He *et al.*, 2016; Lu *et al.*, 2016; Rampershad and De Villiers, 2011; Mousa and Desoky, 2019; Nguyen and Bui, 2019; Mulchandani *et al.*, 2020; Allani and Mard, 2024).

From a theoretical perspective, in a context of information asymmetry, and contrary to the dividend neutrality theory proposed by Modigliani and Miller (1961), managers can use dividends to convey their private information to the financial markets. Dividends can then be used as signal that alters the market’s perception of a firm’s future profit prospects. This signaling theory was modeled by Bhattacharya (1979), John and Williams (1985) and Miller and Rock (1985). It has been the subject of several empirical studies that remain inconclusive.

Those studies have tested whether dividend changes are followed by earnings changes, stock price reactions and analysts’ forecasts revision in the same direction (Watts, 1973; De Angelo *et al.*, 1996; Benartzi *et al.*, 2005; Koch and Sun, 2004; Aharon and Swary, 1980; Viswanath *et al.*, 2002; Bali, 2003; Adjaoud *et al.*, 2006; Yilmaz and Selcuk, 2010; Sant and Cowan, 1994; Mikhail *et al.*, 2003).

An alternative interpretation of this dividend signaling theory, strongly supported by a stream of research that emerged after 2010, is that the payment of dividends itself or the amount of dividends paid, rather than the variation in dividends, provides a credible signal about the quality of reported earnings. This quality was proxied by the earnings persistence, its predictability, the quality of accruals and the quality of the discretionary accruals (Skinner and Soltes, 2011; Tong and Miao, 2011; Sirait and Siregar, 2014; He *et al.*, 2016; Lu *et al.*, 2016; Rampershad and De Villiers,

2018; Mousa and Desoky, 2019; Nguyen and Bui, 2019; Mulchandani *et al.*, 2020; Allani and Mard, 2024). To the best of our knowledge, no previous study has attempted to examine the signaling power of dividends regarding the real earnings management.

To fill this gap, this paper reexamines the new approach of the signalling hypothesis of dividends by investigating whether dividends signal the earnings quality, focusing on both the accrual-based and the real earnings management practices.

To achieve this purpose, we selected a sample of 756 firm year observations from non financial firms listed on the TSX 300 index, covering the period 2011 to 2024. To estimate the earnings quality, we adopted two models. The modified Jones model (Dechow *et al.*, 1995) was used to proxy the accrual-based earnings management and the Rowchowdhury (2006) model was used to proxy the real earnings management.

The choice of the Canadian context is motivated by its close resemblance to the U.S. setting, on which numerous studies have been conducted, albeit with certain differences and specificities. The Canadian context is characterized by strong investor protection, mandatory adoption of IFRS since 2011, and a common law legal system.

However, the Canadian financial market features large family-owned firms with concentrated ownership or significant blockholder stakes, which contrasts with the U.S. context. Moreover, the Canadian dividend tax credit system differs from the U.S. dividend taxation regime and particularly incentivizes firms to distribute dividends even when earnings are stable.

The findings partially validate the dividend signaling theory in the Canadian context. Specifically, dividend-paying firms and those with high dividend payouts exhibit higher quality in discretionary accruals but poorer quality in abnormal real earnings management. The initial results of this study confirm the findings of prior research by Skinner and Soltes (2011), Tong and Miao (2011), Sirait and Siregar (2014), He *et al.* (2016), Lu *et al.* (2016), Rampershad and De Villiers (2018), Mousa and Desoky (2019), Nguyen and Bui (2019), Mulchandani *et al.* (2020), and Allani and Mard (2024). Nevertheless, contrary to the results of Sirait and Siregar (2014) and Mulchandani *et al.* (2020), no significant association was found between increases in the dividend payout ratio and earnings quality.

This study contributes to the existing literature in several ways. First, it enriches the earnings management literature by exploring new indicators of the authenticity and transparency of reported earnings.

Second, it advances the dividend signaling literature. Despite the abundance of theories explaining dividend policy and empirical studies on the informational

content of dividends, the relationship between dividends and earnings quality warranted examination in a novel institutional setting, namely Canada.

Finally, prior empirical studies have limited their measurement of earnings quality to persistence, predictability, and accrual quality. No previous study has employed abnormal real earnings management to test the signaling power of dividends with respect to earnings quality.

The paper is structured as follows. Next section provides the literature review and the development of the hypotheses. The subsequent section develops the research design. Section 4 presents and discusses the results. The final section concludes.

2. Literature Review and Hypotheses Development

Dividend is the portion of the firm's profits allocated to its shareholders. They are considered one of the biggest puzzles in finance. In fact, Black (1976) referred to the shareholders' attention paid to dividends as "Dividend puzzle" and multiple theoretical models and empirical studies have sought to explain the reasons behind distributing dividends by firms.

The first explanatory theory of the dividend policy dates back to Modigliani and Miller (1961). Their irrelevance theory was based principally on two assumptions: the capital market is perfect, with symmetric information, and the investors are rational. The relaxation of those assumptions, to get closer to the reality, has founded the two most explanatory theories of dividend policy: the agency theory and the signaling theory.

Referring to the dividend traditional signaling theory, in a context of information asymmetry between managers and investors, the former use dividend payments to disclose information about their perspectives of future earnings (Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985). More precisely, unexpected increases (decreases) in dividends constitute a positive (negative) signal on future earnings and growth opportunities of a firm.

Empirically, studies that have examined the effect of dividend announcements or dividend variations on stock returns confirmed the dividend signaling theory (Aharony and Swary, 1980; Asquith and Mullins, 1983; Viswanath *et al.*, 2002; Bali, 2003; Adjaoud *et al.*, 2006; Yilmaz and Selcuk, 2010). Dividend variations are accompanied by stock returns variations in the same direction.

Nevertheless, studies that investigated earnings changes subsequent to the dividend changes were unable to support the dividend signaling theory because the variations were not usually in the same direction (Watts, 1973; DeAngelo *et al.*, 1996; Benartzi *et al.*, 1997; 2005; Nissim and Ziv, 2001; Koch and Sun, 2004; Hanlon *et al.*, 2006).

Such results confirmed DeAngelo *et al.* (2009) conclusions that ‘extent empirical evidence is strongly incompatible with the notion that the primary purpose of dividends is to signal managers’ views of future earnings to outside investors’².

Building on the inconsistent conclusions of the prior literature, recent researches have investigated the dividend informativeness differently by examining the dividend paying status as a signal of future earnings or earnings quality (Skinner and Soltes, 2011; Tong and Miao, 2011; Sirait and Siregar, 2014; He *et al.*, 2016; Lu *et al.*, 2016; Rampershad and De Villiers, 2018; Mousa and Desoky, 2019; Nguyen and Bui, 2019; Mulchandani *et al.*, 2020; Allani and Mard, 2024).

Starting with the financial scandals of the 2000s and the inability of managers to distribute regular cash dividends based on unauthentic profits that do not reflect the true financial performance of the firm, dividend distribution is regarded as a way of informing the investors that there is low uncertainty regarding the expected future cash flow and it seems clear that maintaining dividends is dependent on the sustainability and the higher quality of earnings. Overall, dividend distribution sends a credible signal not only about the undeniable quality of the benefits but also about the general financial health of the firm.

In 1956, the study of Lintner established an association between dividends and the persistence of earnings. He suggested that the managers are often hesitant to increase dividends unless they believe that these distributions can be sustained at the new level. Thus, dividend distribution is a tool used by managers to convince investors of the quality of the reported earnings.

Sivakumar and Waymire (1993) investigated the informativeness of earnings in pre-SEC years. The results confirmed that reported earnings at the beginning of the 21st century lacked credibility. However, the distribution of cash dividends by the firms validates the quality of their retained earnings.

In 2011, Skinner and Soltes have established the first direct empirical link between dividend distribution and earnings quality. In the American context, they found that dividend paying firms have more persistent earnings and are less likely to report losses. Complementing this evidence, Tong and Miao (2011) documented that dividend paying firms have higher earnings quality than non-dividend paying firms, with lower discretionary accruals, better accruals quality and better value relevant earnings.

Caskey and Hanlon (2013) examined a sample of fraudulent firms, subject to SEC accounting enforcement actions, and found that such firms are less likely to distribute or maintain dividends, while committing fraud. Their results strengthen the notion that dividend commitments limit aggressive reporting.

²Page 99.

Hanlon *et al.* (2007) investigated the informativeness of dividends with respect to the earnings' quality, proxied by the future earnings response coefficient. Their results supported that dividend paying firms provide the market with an information of their benefits' higher quality.

Studies carried out in an international context, such as He *et al.* (2016) for 29 countries, Sirait and Siregar (2014) for Indonesia, Lu *et al.* (2016) for China, Nguyen and Bui (2019) for Vietnam, Mousa and Desoky (2019) for Egypt, Balios *et al.* (2021) for Greece, Mulchandani *et al.* (2020) for India and Allani and Mard (2024) for France generally confirmed the positive association between dividend distribution and earnings quality, its persistence, predictability and the quality of accruals, discretionary or total.

However, they also show that institutional features, e.g., ownership structure or investor protection, could strengthen or weaken the informational role of dividends.

In the literature cited above, earnings quality was measured with their persistence, their predictability or with accrual-based proxies. Real earnings management was totally neglected, although Habib *et al.* (2022) emphasized that managers often substitute from accrual based earnings management to real earnings management when the methods used for managing the accruals are limited. Moreover, they highlighted that firms with high real earnings management can report « clean » accruals while presenting an errenous performance.

To the best of our knowledge, no previous study has investigated the relationship between dividends and real earnings management. Only the study of He *et al.* (2016) focused on earnings management and identified its association with dividend policy, but without examining in detail the two dimensions, accrual-based and real earnings management. This study addresses this gap by adding the real earnings management, as a distinct dimension of earnings quality, in the investigation of the relationship dividends- earnings quality.

The canadian context provides a suitable institutional framework for such an investigation. Indeed, it is characterized by strong investor protection, mandatory adoption of IFRS since 2011 and a common-law legal system which promotes the presentation of accurate information in financial statements and limits earnings management practices.

It is also known by the multitude of concentrated family ownership firms and the firms with important block ownership, particularly the institutional investors ownership. Such firm structure can shape the payout policy and the earnings management practices (Yilmaz *et al.*, 2024; Setiawan *et al.*, 2016; Maswadeh, 2018; Grimaldi and Muserra, 2017). Moreover, the canadian system of dividend tax credit encourages firms to distribute earnings, making dividend distributions reflective of long term profitability.

Relying on the aforementioned theoretical arguments, empirical evidence and specificities of the Canadian context, we presume that the dividends are likely to be an indicator of the earnings quality, which extends beyond accruals based earnings management to encompass real earnings management. The first study's hypothesis can then be developed as follows :

Hypothesis 1: Dividend paying firms have higher earnings quality than that of non dividend paying firms.

It is important to consider not only the status of dividend paying but also the magnitude of the dividend distributed. Indeed, Skinner and Soltes (2011) found that as the dividend payout ratio increases, the quality of earnings improves. Tong and Miao (2011) also found that firms distributing large dividends tend to have higher earnings quality than those paying small dividends or none at all. However, studies conducted by Mulchandani *et al.* (2020) and Sirait and Siregar (2014) did not find evidence that the size of the dividend paid provides information into the quality of reported earnings.

Hypothesis 2: Large dividend paying firms have higher earnings quality than the other firms.

Drawing on previous studies, changes in the dividend payout ratio offer insights into the quality of the earnings. Lintner (1956) confirmed that dividend cuts and even reductions send bad signals to investors. Consequently, managers will only increase dividend payouts if future earnings enable them to maintain their current payout ratios. Caskey and Hanlon (2013) suggested that firms tend to pay lower dividends when earnings are manipulated. However, when earnings are of good quality and they reflect accurately the firm's strong cash position, the firm can sustain dividend increases.

The studies of Sirait and Siregar (2014) and Mulchandani *et al.* (2020) confirmed that firms that increase their dividend payout ratio have earnings quality better than the other firms.

Hypothesis 3: Increasing dividend firms have higher earnings quality than the other firms.

3. Research Design

3.1 Sample Selection

The sample of this study consists of all non-financial firms listed on the TSX 300 Index. Initially, 165 listed firms in the Datastream database were identified. We then excluded the firms whose start dates indicated in the Datastream fell within the study period (2011-2024). This selection process resulted in a final sample of 135 listed

firms and a total of 1 890 firm-year observations. Finally, we excluded firm-year observations that had missing data for any of the variables needed.

The details on the sample selection procedure are presented in Table 1. The final sample includes a total of 756 firm-year observations (Table 1, Panel A). Panel B of Table 1 presents the sample split by industry.

Table 1. Summary of the sample selection process and sample distribution by industry

PANEL A: SAMPLE SELECTION PROCEDURE		
Non-financial firms listed on the TSX 300 Index		165
Excluding firms:		(30)
✓ Whose start dates are within the study period		
Number of firms in the initial sample		135
Total initial firm-year observations		1890
Excluding firm-year observations due to missing values		(1134)
Total final firm-year observations		756
PANEL B: DISTRIBUTION OF FIRM-YEAR OBSERVATIONS BY INDUSTRY		
Industry type (ICB classification)	Number of observations	Percentage
10- Technology	79	10%
15- Telecommunications	42	6%
20- Health Care	14	2%
40- Consumer Discretionary	64	8%
45- Consumer Staples	34	5%
50- Industrials	169	22%
55- Basic Materials	174	23%
60- Energy	127	17%
65- Utilities	53	7%
TOTAL	756	100.00

Source: Own study.

Furthermore, most of the firms included in the study belong to the “Basic Materials” industry followed by “Industrials”, “Energy” and “technology” industries (Table 1, Panel B).

3.2 Variables Measurement

3.2.1 Dividend variables

In order to test the study’s hypotheses and based on the previous literature, three features of dividends (DIV) will be examined separately, each one in a distinct model.

In the first model used to test the first hypothesis, the interest variable, DIVDUMMY, refer to dividend paying status. DIVDUMMY is a dichotomous

variable coded 1 if the firm pay cash dividend in year t , 0 otherwise (Tong and Miao, 2011; Sirait and Siregar, 2014; He *et al.*, 2016; Lu *et al.*, 2016; Rampershad and DeVilliers, 2018; Nguyen and Bui, 2019; Mulchandani *et al.*, 2020).

The interest variable of the second model is BIGDIV. It is a dummy variable equal to 1 if the firm distributes in year t large cash dividends, 0 otherwise (Tong and Miao, 2011; Sirait and Siregar, 2014; Mulchandani *et al.*, 2020). The firm consider that it is paying a large dividend when its dividend payout ratio exceeds or equal to 25%.

The last interest variable used to test the third hypothesis is DIVCHANGE which is an indicator variable that is set to 1 if the current dividend payout ratio of the firm exceeds its previous dividend payout ratio, 0 otherwise.

3.2.2 Earnings quality

The earnings quality is a multidimensional concept assessed through different models. However, prior studies have not been able to establish that one measure is better or more conducive to decision-making than another (Francis *et al.*, 2005; Dechow *et al.*, 2010). In our study, the specific aspect of earnings quality that will be focused on is the extent of earnings management. Previous research has indicated that the quality of earnings tends to decrease as earnings management increases.

But, unlike previous studies that have examined the dividend-earnings quality relationship, this study will not focus solely on earnings management through accruals. Instead, it will broaden the analysis to include the second aspect of earnings management: the real earnings management.

3.2.2.1 Accrual based earnings management

As in previous literature, we used discretionary accruals to proxy for the accrual-based earnings management. We calculated total accruals, which is the difference between net income and operating cash flow, then we calculate the difference between total accruals and the non-discretionary accruals, also called normal accruals.

In the accounting literature, the most used model to estimate the discretionary accruals is the Jones model (1991) modified by Dechow *et al.* (1995)³. To take into account the managerial discretion exercised over revenues, Dechow *et al.* (1995) added changes in receivables to changes in revenues, which already exists in the original Jones' (1991) model. Then, discretionary accruals model is specified in the following form (Dechow *et al.*, 1995; Tong and Miao, 2011; Mousa and Desoky, 2019):

³See Mahfoudh and Kobbi-Fakhfakh (2025), p: 369.

$$\frac{TACC_t}{A_{t-1}} = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{(\Delta REV_t - \Delta REC_t)}{A_{t-1}} + \alpha_3 \frac{PPE_t}{A_{t-1}} + \varepsilon_t \quad (1)$$

Where:

$TACC_t$: Total accruals in year t,

A_{t-1} : Total assets in year t-1,

ΔREV_t : Change in revenues in year t,

ΔREC_t : Change in net receivables in year t,

PPE_t : Gross property plant and equipment in year t,

$\alpha_1, \alpha_2, \alpha_3$: Parameters,

ε_t : Residual in year t.

Residuals obtained from the estimation of equation (1) represent the discretionary accruals for each firm-year observation. Larger residuals indicate poorer earnings quality whereas smaller residuals indicate higher earnings quality. Therefore, the absolute value of those residuals is our first proxy for earnings quality.

$$EQ1 = |\varepsilon_t|$$

Larger values of EQ1 correspond to larger values of discretionary accruals and thus to lower earnings quality.

3.2.2.2 Real earnings management

For several years, the accounting literature has addressed more attention to the earnings manipulation via the discretionary accruals rather than via the real earnings management. However, since the survey of Graham *et al.* (2005) that revealed that top executives prefer real earnings management over accruals management, the interest in this type of earnings management increased and several models for its measurement emerged. Nevertheless, Roychowdhury (2006) model continues to be the most widely used in the accounting literature.

Roychowdhury (2006) proxy is based on three real earnings management measures: the abnormal levels of operating cash flow, production costs and discretionary expenses.

The abnormal level of operating cash flow is estimated using the following model:

$$\frac{CFO_t}{A_{t-1}} = \beta_0 + \beta_1 \left(\frac{1}{A_{t-1}} \right) + \beta_2 \left(\frac{S_t}{A_{t-1}} \right) + \beta_3 \left(\frac{\Delta S_t}{A_{t-1}} \right) + \varepsilon_t \quad (2)$$

Where:

CFO_t : Operating cash flow in year t,

A_{t-1} : Total assets in year t-1,

S_t : Total sales during the year t,

ΔS_t : Change in total sales in year t: $S_t - S_{t-1}$,

$\beta_1, \beta_2, \beta_3$: Parameters,

ε_t : Residual in year t.

In equation (2), ε_t represents the abnormal level of cash flow from operations for each observation ($ABNCFO_{i,t}$). The upward revenue management is conducted by accelerating the sales (Via price discounts or credit terms offered), thus inducing abnormally low cash flow from operations.

The abnormal level of production costs is estimated using the following model:

$$\frac{PROD_t}{A_{t-1}} = \beta_0 + \beta_1 \left(\frac{1}{A_{t-1}} \right) + \beta_2 \left(\frac{S_t}{A_{t-1}} \right) + \beta_3 \left(\frac{\Delta S_t}{A_{t-1}} \right) + \beta_4 \left(\frac{\Delta S_{t-1}}{A_{t-1}} \right) + \varepsilon_t \quad (3)$$

Where:

$PROD_t$: Production costs in year t. Those costs are calculated by adding the costs of goods sold to the change in inventories for the firm in the year t,

ΔS_{t-1} : Change in total sales in year t: $S_{t-1} - S_{t-2}$,

$\beta_1, \beta_2, \beta_3, \beta_4$: Parameters,

ε_t : Residual in year t.

In equation (3), ε_t represents the abnormal level of production costs for each observation ($ABNPROD_{i,t}$). The upward revenue management is conducted by minimizing the abnormal level of production costs. This can be done by lowering the costs of goods sold through increasing the production and thus, minimizing the fixed unit production costs.

The abnormal level of discretionary expenses is estimated using the following model:

$$\frac{DISEXP_t}{A_{t-1}} = \beta_0 + \beta_1 \left(\frac{1}{A_{t-1}} \right) + \beta_2 \left(\frac{S_{t-1}}{A_{t-1}} \right) + \varepsilon_t \quad (4)$$

Where:

$DISEXP_t$: Discretionary expenses in year t. Those expenses are obtained by the sum of R&D expenses, advertising expenses and Selling, General & Administrative expenses,

S_{t-1} : Total sales during year t-1,

β_1, β_2 : Parameters,

ε_t : Residual in year t.

In equation (4), ε_t represents the abnormal level of discretionary expenses for each observation ($ABNDISEXP_{i,t}$). The upward revenue management is conducted by minimizing the abnormal level of discretionary spending. This can be done by reducing the R&D expenses, the advertising expenses or the SG& Administrative

expenses.

Then, to ensure that each high value of the abnormal measurements calculated reflects a high magnitude of real earnings management, we multiply ABNCFO and ABNDISEXP by -1 (Zang, 2012; Cohen and Zarowin, 2010; Ho *et al.*, 2015; Mahfoudh and Kobbi-Fakhfakh, 2025).

In fine, the abnormal level of real earnings management is computed as follows:

$$ABNREM_{i,t} = ABNPROD_{i,t} - ABNCFO_{i,t} - ABNDISEXP_{i,t} \quad (5)$$

Where:

$$EQ2 = ABNREM_{i,t}$$

Larger values of EQ2 correspond to larger values of abnormal real earnings management and thus to lower earnings quality.

3.3 Model Specification

To test the three research hypotheses, we performed three regression models including industry and year fixed effects. They are presented as follows:

$$EQ_{i,t} = \beta_0 + \beta_1(DIVDUMMY)_{i,t} + \beta_n(CONTROLS)_{i,t} + FE + \varepsilon_{i,t} \text{ (I)}$$

$$EQ_{i,t} = \beta_0 + \beta_1(BIGDIV)_{i,t} + \beta_n(CONTROLS)_{i,t} + FE + \varepsilon_{i,t} \text{ (II)}$$

$$EQ_{i,t} = \beta_0 + \beta_1(DIVCHANGE)_{i,t} + \beta_n(CONTROLS)_{i,t} + FE + \varepsilon_{i,t} \text{ (III)}$$

Two proxies for earnings management (EM) are used: (1) the absolute value of discretionary accruals measured with the Jones model (1991) modified by Dechow *et al.* (1995) and (2) the combined measure of real earnings management, as computed for the first time in Cohen *et al.* (2008).

The coefficient of interest in the three regression models is β_1 . It provides an estimate of the informativeness of dividends toward earnings quality. We expect a negative and significant coefficient on DIV as, in accordance with dividend signaling theory, dividends convey information about the good quality of the firm's earnings.

We followed previous studies that have examined the informativeness of dividends towards earnings quality (Tong and Miao, 2011; Sirait and Siregar, 2014; He *et al.*, 2016; Lu *et al.*, 2016; Rampershad and DeVilliers, 2018; Mousa and Desoky, 2019; Nguyen and Bui, 2019; Mulchandani *et al.*, 2020; Allani and Mard, 2024) and we included in the model the control variables that represent some firm characteristics related to the earnings management practice.

These control variables include firm size (SIZE), leverage (LEV), financial performance (LOSS), age (AGE), maturity (MATURITY) and profitability (ROA).

We also controlled for industry and year factors by including industry (INDUS-FE) and year (YEAR-FE) fixed effects in the models. All the variables of the study are defined in Table 2. All the data used are collected from DataStream database.

Table 2. Variables' measurement

ACRONYMS	DEFINITIONS	MEASURES
EQ1	Accrual-based earnings management	The absolute value of the residual estimate using the modified Jones model (Dechow et al., 1995)
EQ2	Real earnings management	The sum of the three real earnings management proxies computed as in Cohen et al. (2008).
DIVDUMMY	Dividend payment	1 (0 otherwise) if the firm pay cash dividends in year t
BIGDIV	Large dividend	1 (0 otherwise) if the firm pay large cash dividends in year t. Cash dividend is considered large when dividend payout ratio is $\geq 25\%$
DIVCHANGE	Dividend change	1 (0 otherwise) if the dividend payout ratio of the firm in year t exceeds its dividend payout ratio in year t-1.
FSIZE	Firm size	Natural logarithm of total sales
LEV	Leverage	Total debt/Total assets
LOSS	Financial performance	1 (0 otherwise) if earnings before extraordinary items are negative
AGE	Firm Age	Natural logarithm of the number of years since the firm gets listed
MATURITY	Firm Maturity	Retained earnings/Total assets
ROA	Profitability	Net income/Total assets
INDUS-FE	Industry fixed effects	Dummies variables to control for industry type
YEAR-FE	Year fixed effects	Dummies variables to control for year

Source: Own study.

4. Results and Discussion

4.1 Descriptive Statistics

To eliminate the potential effects of outliers, all continuous variables are winsorized at the 1st and 99th percentiles.

Table 3 outlines the means and the standards deviations for the study variables for the two sub-samples: the first one including the dividend paying firms and the second one including non-dividend paying firms. It also outlines whether the mean

differences are statistically significant. EQ1 and EQ2 are slightly higher for dividend payers than for non-dividend payers. Nevertheless, the difference is significant only for EQ2, indicating that firms that pay dividends exhibit larger values of abnormal real earnings management.

On average, dividend paying firms are larger, more leveraged, older, more mature and more profitable than non-dividend paying firms. They are also less likely to report negative earnings.

Table 3. Summary descriptive statistics for variables

Variables	Dividend paying		Non dividend paying		Mean analysis	
	Mean	Standard Deviation	Mean	Standard Deviation	Difference in Means	P-Value
EQ1	0.569	0.013	0.059	0.022	0.002	0.095
EQ2	0.332	0.420	0.108	0.034	-0.223***	0.000
FSIZE	15.763	1.357	14.507	1.592	-1.255***	0.000
LEV	0.280	0.152	0.202	0.184	-0.077***	0.000
LOSS	0	0	0.049	0.501	0.491***	0.000
AGE	3.215	0.489	2.893	0.595	-0.322***	0.000
MATURITY	0.198	0.241	-0.028	0.453	-0.480***	0.000
ROA	7.847	4.206	-0.704	10.877	-8.552***	0.000
	524 Observations		232 Observations			

Note: This Table consists of 756 firm year observations from 2011 to 2024. It reports the descriptive statistics for the study variables comparing the dividend paying firms sub-sample and the non-dividend paying firms' sub-sample. All continuous variables are winsorized at the 1st and 99th percentiles. *** denotes significant at the 1% level. See Table 2 for variable definitions.

Source: Own study.

To test for multicollinearity problem, Pearson correlation coefficients between all independent variables included in each model are calculated and presented in Table 4. The magnitude of the coefficients obtained are relatively low, indicating that there is not a multicollinearity issue in the three models examined.

Table 4. Correlation matrix and VIF coefficients

	Divdummy	Bigdiv	Divchange	Fsize	Lev	Loss	Age	Maturity	ROA
Divdummy	1								
Bigdiv		1							
Divchange			1						
Fsize	0.375* **	0.271 ***	0.380 ***	1					
Lev	0.215* **	0.286 ***	0.235 ***	0.402 ***	1				

Loss	-0.633* **	-0.393 ***	-0.00458 ***	-0.268 ***	-0.021	1			
Age	0.2731 ***	0.216 ***	0.219 ***	0.431 ***	0.139	-0.104 ***	1		
Maturity	0.567* **	0.242 ***	0.411 ***	0.414 ***	-0.007	-0.457 ***	0.229 ***	1	
Roa	0.493* **	0.206 ***	0.352 ***	0.235 ***	0.033	-0.684 ***	0.063 *	0.496 ***	1

Note: This Table reports the Pearson correlation matrix using 756 firm-year observations from 2011 to 2024. All continuous variables of the study are winsorized at the 1st and 99th percentiles. *** and *denote significant at the 1% and 10% levels, respectively.

Source: Own study.

4.2 Empirical Results and Discussion

To test our three research hypotheses, we estimated regression models I, II, and III in STATA using panel data. We conducted the required econometric tests to detect heteroskedasticity and autocorrelation problems. Subsequently, to address these issues and obtain precise and efficient estimators, we re-estimated the models using the Feasible Generalized Least Squares method.

Table 5 reports the results of the multivariate analysis for the three research hypotheses. In Panel A, we present the regression results of model (I) for the two proxies of earnings quality, in order to test hypothesis 1 i.e., dividend paying firms have higher earnings quality than that of non dividend paying firms.

Wald Chi2 test is significant confirming that the model examined with the two proxies of earnings quality has a significant explanatory power. However, the coefficient of interest was positive and significant at the 5% level when EQ1 was used, but negative and significant at the 5% level when EQ2 was employed.

The mixed results of the multivariate empirical analysis – whereby dividend distribution is negatively associated with the magnitude of discretionary accruals but positively associated with abnormal real earnings management – pose a complex challenge to dividend signalling theory which predicts that firms use dividends to signal their sound financial condition and their ability to generate satisfactory earnings.

Dividend payouts are also viewed as an effective mechanism for constraining managers' opportunistic behaviour and opportunistic financial reporting. However, our findings suggest that reality goes beyond this traditional view : dividends appear

to limit earnings manipulation through accruals, while at the same time co-existing with, and possibly encouraging, real earnings management.

First, the negative association between DIVDUMMY and EQ1 indicates that dividend-paying firms exhibit higher discretionary-accruals quality and, consequently, higher earnings quality. This is consistent with the predictions of dividend signalling theory and with the results of several empirical studies (Skinner and Soltes, 2011; Tong and Miao, 2011; Sirait and Siregar, 2014; He *et al.*, 2016; Lu *et al.*, 2016; Rampershad and De Villiers, 2018; Mousa and Desoky, 2019; Nguyen and Bui, 2019; Mulchandani *et al.*, 2020; Allani and Mard, 2024).

Investors value a stable pattern of dividend payments and interpret it as evidence of transparent accounting that complies with generally accepted accounting principles. Managers therefore seek to avoid opportunistic discretionary adjustments through accruals that could ultimately force them to cut or omit dividends once the firm's true performance is revealed.

However, the negative association between DIVDUMMY and EQ2 shows that dividend-paying firms exhibit poor quality with respect to abnormal real earnings management. While these firms strive to maintain transparent and accurate financial statements in terms of accruals, they do not hesitate to engage in real earnings management activities (such as granting price discounts, overproducing, or cutting R&D and advertising expenditures) in order to honour their dividend commitment.

Such real earnings management can harm long-term value creation, just as accrual-based management harms value in the short term (Gao *et al.*, 2017; Habib *et al.*, 2022). Moreover, real earnings management attracts less scrutiny from auditors and regulators than accrual-based manipulation, because it can be justified as a seemingly rational and optimal business decision, making it difficult to distinguish from genuine operational choices.

Overall, the results of our first hypothesis support the existence of a substitution strategy between accrual-based and real earnings management (Cohen *et al.*, 2008; 2010; Ibrahim *et al.*, 2011; Zang, 2012; Gao *et al.*, 2017; Ipino and Parbonetti, 2017; Owusu *et al.*, 2020; Pincus *et al.*, 2022; Duc Cuong and Duong, 2025).

This strategy appears to be a response to the tightening of governance mechanisms that effectively curb earnings manipulation through accruals, thereby pushing managers towards real manipulation of operating activities in order to achieve targeted earnings and comply with their dividend commitments.

For the control variables, only LEV, LOSS, and ROA exhibit coefficients that have the same sign and are statistically significant. These results are consistent with the empirical evidence reported by Tong and Miao (2011), Sirait and Siregar (2014), Rampershad and De Villiers (2018) and Allani and Mard (2024), which shows that

highly leveraged, highly profitable, and loss-making firms tend to display poorer earnings quality.

For the remaining three control variables and in line with prior studies that measure earnings management through accruals using different proxies, the findings are mixed,. Specifically, older and more mature firms exhibit higher quality in their accruals (Tong and Miao, 2011; He *et al.*, 2016; Nguyen and Bui, 2019; Mulchandani *et al.*, 2020) but poorer quality in terms of real earnings management (Sirait and Siregar, 2014; Rampershad and De Villiers, 2018; Allani and Mard, 2024).

With respect to firm size, the results for EQ2 are consistent with earlier studies (Skinner and Soltes, 2011; Tong and Miao, 2011; Sirait and Siregar, 2014; He *et al.*, 2016; Lu *et al.*, 2016; Rampershad and De Villiers, 2018; Mousa and Desoky, 2019; Nguyen and Bui, 2019; Mulchandani *et al.*, 2020; Allani and Mard, 2024) i.e, the larger the firm is, the higher the quality of its real earnings management. Nevertheless, the EQ1 estimates indicate that the largest Canadian firms are characterized by relatively low accrual quality.

Table 5 panel B presents the regression results of model (II) testing hypothesis 2 i.e, large dividend paying firms have higher earnings quality than the other firms.

The mixed results confirm the substitution strategy between the accrual based and the real earnings management. Firms paying large dividend payout ratio have higher quality of discretionary accruals than other firms (Tong and Miao, 2011; Sirait and Siregar, 2014; Mulchandani *et al.*, 2020) but lower quality of abnormal real earnings management.

Those results confirm that firms that pay high dividends appear to be managed by individuals who are committed to transparent financial reporting and who avoid using discretionary accruals that could draw the attention of auditors and regulators. In doing so, they can sustain high dividend payouts with confidence that the firm's cash position is genuinely adequate. The managers instead rely more on operational practices to "mislead" certain stakeholders, and may be unable to guarantee persistently high dividends for fear of ultimately being forced to reduce or even cut dividend distributions.

For the control variables, the estimated coefficients are similar to those of Model (I), with the exception of the leverage variable (LEV), whose coefficient changes from positive to negative.

In Table 5 panel C, we present the regression results of model (III) used to test the third hypothesis i.e, increasing dividend firms have higher earnings quality than the other firms.

The explanatory power of the two regressions of model (III) reached 51.44% and 53.57%, respectively. However, contrary to our expectations and the findings of prior studies (Sirait and Siregar, 2014; Mulchandani *et al.*, 2020), the estimated coefficients were not statistically significant, leading to the rejection of hypothesis 3, the increase in the dividend payout ratio does not necessarily signal high earnings quality. This result may be explained by Canada's favorable dividend tax regime, which could incentivize firms to distribute higher dividends irrespective of earnings stability. For the remaining control variables, the coefficients were identical to those of Model (I).

In conclusion, the results from the first two models do not challenge the dividend signaling theory. Instead, they highlight its limitations in detecting sophisticated forms of earnings management, namely real earnings management. Indeed, the signaling power of dividends proves effective only in the presence of observable accounting manipulations through accruals, but remains limited against concealed operational manipulations.

Table 5. *Results of regression models estimation*

PANEL A: Regression results of Model (I)

	EQ1		EQ2	
	Coef.	P-value	Coef.	P-value
DIVDUMMY	-0.002	0.013**	0.035	0.046**
FSIZE	0.001	0.000***	-0.032	0.000***
LEV	0.001	0.002***	0.118	0.009***
LOSS	-0.001	0.000***	-0.028	0.044**
AGE	-0.003	0.000***	0.023	0.123
MATURITY	-0.005	0.000***	0.037	0.085*
ROA	0.000	0.000***	0.003	0.000***
INDUS-FE	YES		YES	
YEAR-FE	YES		YES	
Wald chi2	1725.98		925.87	
Prob>chi2	0.000		0.000	
Adjusted R ²	51.46%		53.82%	
Observations	756		756	

PANEL B: Regression results of Model (II)

	EQ1		EQ2	
	Coef.	P-value	Coef.	P-value
BIGDIV	-0.001	0.010***	0.0267	0.006***
FSIZE	0.001***	0.001***	-0.056	0.000***
LEV	-0.007	0.000***	-0.029	0.444
LOSS	-0.001	0.275	-0.099	0.000***
AGE	-0.002	0.001***	0.025	0.010***
MATURITY	-0.006	0.000***	0.011	0.558
ROA	0.000	0.017**	0.008	0.000***
INDUS-FE	YES		YES	
YEAR-FE	YES		YES	

Wald chi2	8821.96	3488.39		
Prob>chi2	0.000	0.000		
Adjusted R ²	51.56%	53.59%		
Observations	756	756		
PANEL C: Regression results of Model (III)				
	EQ1		EQ2	
	Coef.	P-value	Coef.	P-value
DIVCHANGE	-0.000	0.319	0.008	0.522
FSIZE	0.000	0.008***	-0.051	0.000***
LEV	0.000	0.848	-0.0305	0.513
LOSS	-0.000	0.671	-0.0684	0.007***
AGE	-0.002	0.001***	0.0562	0.000***
MATURITY	-0.004	0.000***	-0.0164	0.450
ROA	0.000	0.006***	0.008	0.000***
INDUS-FE	YES		YES	
YEAR-FE	YES		YES	
Wald chi2	1550.47	2150.97		
Prob>chi2	0.000	0.000		
Adjusted R ²	51.44%	53.57%		
Observations	756	756		

Note: This table presents results of multivariate analysis for regression models. The dependent variable, the earnings quality, is proxied by absolute value of accrual-based earnings management (EQ1) and real earnings management (EQ2). The interest variables are the dividend payment (DIVDUMMY), the large dividend (BIGDIV) and the dividend change (DIVCHANGE). The sample selection process is described in Table 1, and all variables are defined in Table 2. All continuous independent variables were Winsorized at the 1st and 99th percentiles. The regression model includes industry and year fixed effects. ***, ** and * indicate significance at the 1%, 5% and 10%, respectively.

Source: Own study.

5. Conclusion

This study investigated the dividend informativeness with respect to earnings quality. The sample included 756 firm year observations for 135 non-financial firms listed on the TSX 300 Index from 2011 to 2024. We estimated linear regression models with STATA software. Earnings quality was measured with two proxies: absolute value of discretionary accruals measured with the modified Jones (1991) model, and the abnormal level of real earnings management as measured by Cohen *et al.*, 2008).

The main empirical findings are that dividend paying Canadian firms and firms with high dividend payouts exhibit higher quality of discretionary accruals but lower quality of abnormal real earnings management. Nevertheless, no significant association was found between increases in dividend payout ratio and earnings quality.

This study is not the first empirical work demonstrating the limitations of dividend signaling theory (Watts, 1973; DeAngelo *et al.*, 1996; Benartzi *et al.*, 1997; 2005; Nissim and Ziv, 2001; Koch and Sun, 2004; Hanlon *et al.*, 2006; Adjaoud *et al.*, 2005). It confirms that dividend distributions serve as an indicator of financial information authenticity and the absence of accounting manipulations via accruals. However, neither their distribution nor their magnitude can guarantee the absence of camouflaged operational manipulations.

The findings hold considerable importance for stakeholders, as even cash distributions cannot always serve as a reliable indicator of high earnings quality, contrary to what dividend signaling theory suggests.

Moreover, the results should be interpreted with caution. Earnings quality was proxied solely by earnings management quality. Alternative accounting or market-based measures of earnings quality warrant further examination. Moreover, while the Canadian institutional framework is relatively homogeneous, differences across firms in governance mechanisms (ownership structure, board characteristics, etc.) must be considered, as should the Canadian tax system.

Future research could explore other earnings quality measures. Such studies should also account for varying governance mechanisms and dividend tax regimes when investigating the dividend-earnings quality relationship.

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