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## Article

# Business strategy typologies and the preference of earnings management practices: Evidence from Indonesian listed firms

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Business strategy typologies and the preference of earnings management practices: Evidence from Indonesian listed firms

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**Abstract:** We examine the relationship between business strategy typologies and managers' involvement in accrual earnings management (AEM) and real activities manipulation (RAM). Furthermore, we investigate whether prospectors (defenders) show a lower (higher) preference for earnings management than defenders (prospectors), both for the AEM and the RAM concurrently. The study sample was selected from publicly held companies in Indonesia from 2012 to 2018. Following Miles and Snow's (1978, 2003) framework, we use a comprehensive construct of business strategy to determine each firm's typology of business strategy based on the score, and we employ multiple regression models to test our hypotheses and robustness checks. Our test results find that prospector-type business strategies have lower AEM and RAM than defender-type business strategies. Next, we find strong evidence that prospectors are less likely to have earnings management preferences than defenders. Our additional tests using the individual RAM level find some evidence that prospectors are less likely to engage in discretionary operating expenses, supporting our main results. Our findings have practical implications for investors, policymakers, and other stakeholders that prospector-type business strategies that focus on innovation and long-term performance achievements do not necessarily provide incentives for management to engage in earnings management, leading to lower earnings quality.

**Subjects:** Business, Management and Accounting; Accounting; Financial Accounting; Strategic Management

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**Keywords: Accrual earnings management; Business strategy; Defender; Prospector; Real transactions**

## 1. Introduction

Theoretically, it is predicted that the prospector typologies have a higher likelihood of risk of irregularities in financial statement reporting than defenders (Miles & Snow, 1978; 2003). Empirical literature studies support the organizational theory prediction that firms following prospector strategies are more inclined to engage in financial statement reporting irregularities (Bentley et al., 2013), more often obtain going concern opinions (Chen et al., 2017), and frequently engage in aggressive tax behavior than defenders (Higgins et al., 2015). Past research has also identified that prospectors more frequently receive auditor reports disclosing major internal control deficiencies and lack of material weakness remediations than firms pursuing defender strategies (Bentley-Goode et al., 2017; Chen et al., 2017). These substantial deficiencies in internal control can result in lower accrual (earnings) quality (Ashbaugh-Skaife et al., 2007; 2008; Dechow et al., 2010; Doyle et al., 2007a; Jarvinen & Myllymaki, 2016; Li et al., 2020; Doyle et al., 2007b).

Internal control deficiencies and less effective remediation, which are more prevalent in prospectors than defenders, could incentivize managers to engage in earnings management (hereafter EM). However, prior research has identified that prospector and defender strategies have incentives to manage earnings. One of the primary reasons prospector strategies are motivated to manage earnings is that managers' compensation is linked to aggressive performance bonuses (Bentley et al., 2013). Prospectors' various and complicated operations necessitate decentralized and adaptable control system designs that give managers greater discretion to engage in EM than defenders with centralized operating control. On the other hand, defenders are likewise motivated to manage earnings because the compensation contract is frequently associated with achieving short-term performance targets (e.g., Bentley et al., 2013; Ittner, 1997; Rajagopalan, 1997).

Extant EM literature has documented that managers can engage in opportunistic EM using AEM and RAM (Burnett et al., 2012; Cohen et al., 2008; Cohen & Zarowin, 2010; Fasipe & Sun, 2020; Gunny, 2010; Roychowdhury, 2006; Vorst, 2016). Furthermore, managers can choose EM tools between AEM and RAM to achieve the earnings target in the same period based on each strategy's cost, limitations, and time. (Badertscher, 2011; Beyer et al., 2018; Cohen et al., 2008; Cohen & Zarowin, 2010; Gunny, 2010; Roychowdhury, 2006; Zang, 2012). For instance, if RAM activities are more expensive than AEM activities, a firm will increase its AEM operations simultaneously, and management will modify the level of AEM to match the RAM level (Zang, 2012).

Past research has also identified that defender strategies perform more AEM than prospector strategies (e.g., Chen et al., 2017), but empirical results have not yet been documented. In another research, Wu et al. (2015) conducted a study using Porter's (1980) business strategy typology on Chinese A-share listed firms in 2010–2012, finding that companies with a cost leadership strategy (equivalent to defenders) are more likely to perform RAM than companies with a differentiation strategy (equivalent to prospectors). Based on the results of the above studies, we conclude that prospectors are less likely to perform either AEM or RAM than defenders. However, prior research did not address whether prospectors or defenders prefer to use all these EM tools less or more concurrently. Earlier studies have shown that managers perform AEM and RAM simultaneously, considering their relative costs. This paper aims to close that gap in the literature. Therefore, we extend previous research by examining their EM preferences to denote a higher or lower propensity to engage AEM and RAM, respectively, and their combined net effect of using those tools. Our empirical question is whether prospectors are less or more inclined than defenders to participate in AEM and RAM and use those EM tools concurrently.

To the authors' knowledge, no prior studies have investigated EM preferences in business strategy typology settings. Our study uses data from Indonesian firms in an emerging economy,

which might differ from prior studies in developed countries. Martinez and Ferreira (2019), for example, using Brazilian companies, suggest that “findings in economies such as the USA may not be generalizable to other countries, such as Brazil, Russia, India, or China (i.e., the BRICs)” (p. 522). In sum, our study aims to examine whether business strategies with prospector (defender) typologies have lower (higher) EM preferences than defender (prospector) typologies.

We test our hypothesis in some steps. First, we investigate whether prospectors (defenders) are less (more) inclined than defenders (prospectors) to engage in AEM in a business strategy typology setting. Then we also test our hypothesis using RAM as another type of EM. To construct our main variable of business strategy, we follow Miles and Snow’s (2003; 1978) typology using the archival measure of a business strategy developed by Bentley et al. (2013). With 665 firm-year observations from publicly listed firms in the industrial/manufacturing industry from 2012 to 2018, our hypothesis tests show that prospectors are less likely than defenders to engage in AEM and less likely to engage in RAM. Finally, we examine whether prospectors (defenders) have less (more) preference than defenders (prospectors) in using these combined EM tools simultaneously. Again, our regression tests find evidence that supports our hypothesis that business strategies with prospector typologies have lower EM preferences than defender typologies.

We also perform robustness checks to test our main results using the earnings benchmarks, another accrual model, and individual levels of RAM. Our additional analyses did not generate significant results, except for firms that follow prospector strategies are less likely to reduce discretionary operating expenses indicating that prospectors are less likely to engage in real transactions at the individual level than firms that follow defender strategies. These robustness checks are consistent with organizational theory, which claims that prospectors incur significant research and development (R&D) and marketing costs to enter a new market fast and hence are more reluctant to reduce these costs than defenders (Ballas et al., 2020; Chen et al., 2017).

Our study contributes to the literature on strategic management and EM. First, earlier research predicted that both prospectors and defenders have EM incentives but lacked empirical evidence and did not specify their EM preferences (Ballas et al., 2020; Chen et al., 2017; Wu et al., 2015). Our study extends the lines of business strategy typologies in the strategic management literature and EM literature by providing empirical evidence that the attributes of prospectors may explain why prospectors are less likely to engage in AEM, less involved in RAM, and have a lesser preference for EM. On the other hand, due to their features that focus on meeting the earnings target in the short term, defenders are more likely to engage in AEM and RAM and are more likely to have EM preference in those tools concurrently.

Second, prior studies revealed that prospectors have weak internal controls, are less inclined to remedy material weaknesses, and are more susceptible to irregularities than defenders (Bentley et al., 2013; Bentley-Goode et al., 2017; Chen et al., 2017). Furthermore, substantial deficiencies in internal control can result in lower earnings quality (Ashbaugh-Skaife et al., 2007; 2008; Doyle et al., 2007a; 2007b). Interestingly, our results find new empirical evidence using data from Indonesian firms that prospectors with those inherent characteristics do not automatically induce managers to manipulate earnings, leading to negative earnings quality than defenders.

The remainder of the paper is organized as follows. Section two explains the literature review and hypotheses. Section three describes the data and research design. Section four discusses the findings and robustness checks. Section five concludes.

## **2. Literature review and hypothesis development**

### **2.1. Business strategy**

Management literature studies posit that companies compete in the same industry by employing various business strategy typologies. One of the typologies of business strategy widely tested in

the accounting literature is Miles and Snow's (2003; 1978). Miles and Snow (2003; 1978) divide observable and continuous business strategies into three types, starting on the one end, prospectors with innovative strategies, and defenders who maintain efficiency at the end of the other side. Meanwhile, the analyzer strategy typology occupies the position of prospector and defender, with organizational characteristics that combine the two. Miles and Snow (1978; 2003) also identify a fourth strategy, reactors. We exclude further discussion of reactors from this work because "the reactor strategy is unstable, short-term, and ultimately fails" (Bentley-Goode et al., 2017, p. 52).

A prospector is a company with organizational characteristics that focus on innovation, has a broad domain of products and markets, and has a degree of flexibility in the organizational structure to respond quickly to changes in the market (Miles & Snow, 1978; 2003). However, these entities' complexity and scope of operations can create problems in internal control because prospectors are much more frequent than defenders in modifying their internal control systems to maintain flexibility (Davila, 2000; Simons, 1987).

On the other hand, a company with a defender strategy has organizational characteristics that focus on cost efficiency and has a narrow but stable product and market domain. In addition, the defender strategy has low technology utilization attributes and stable performance and organization level. Our study emphasizes the prospector and defender business strategies because the control strategy literature emphasizes the prospector and defender as the distribution strategy's endpoints (e.g., Chenhall, 2003; Langfield-Smith, 1997; Simons, 1987), which is why this study is important.

## **2.2. Business strategy and accrual earnings management (AEM)**

Research has consistently demonstrated that a business strategy with a prospector typology has a greater propensity to experience material weakness and a relative lack of material weakness remediation (Bentley-Goode et al., 2017; Chen et al., 2017). Past research also discovered an association between material weakness and lower accrual quality (Doyle et al., 2007a; 2007b). Furthermore, AEM might lead to a decline in accruals (earnings) quality because AEM limits the prediction ability of future operating cash flows (Dechow et al., 2010).

Prospector strategies emphasize innovation and performance measurement over the long term, depending on market performance. As a result, our study implies that prospector-type managers lacked a higher incentive to manage AEM in the short term than defender-type managers. Another argument is that managers could achieve AEM by altering the accounting and estimate methods used to report current-year financial statements, but managers encounter obstacles in controlling AEM in later years because of the reverse nature of accruals (Barton & Simko, 2002; Gunny, 2010; Zang, 2012). Empirical evidence supports this notion. For example, due to unpredictable long-term performance achievements from new products and new markets, companies that pursue prospector strategies frequently face financial distress (Ittner, 1997) and have lower returns on investment and operating cash flows than defenders (Hambrick, 1983; Kothari et al., 2002).

On the other hand, defender strategies have the characteristics of not looking for new markets and goods, having a centralized control system, and having a more predictable and quantifiable growth rate and performance than prospectors. A firm that pursues a defender strategy focuses on the short term to meet earnings targets (e.g., Miles & Snow, 1978; 2003; Rajagopalan, 1997) because defenders place a higher emphasis on financial measurements than prospectors do (Ittner, 1997). Despite a shortage of empirical evidence, Chen et al. (2017) asserted that organizations with defender strategies engage in more AEM than prospector typologies. Based on the above arguments, it is assumed that companies with prospector strategies have a lower tendency to engage in AEM than companies with defender strategies. Therefore, the hypothesis is stated as follows:

*Hypothesis (H1): Prospectors are less likely to engage in AEM than defenders, and vice versa.*

### **2.3. Business strategy and real activities manipulation (RAM)**

Managers can engage RAM by selling on discounts or relaxing payment terms of accounts receivable, by increasing production to reduce product costs per unit, and by lowering operating costs, which are at the discretion of managers (Roychowdhury, 2006). Several arguments explain why the prospector typology has lower incentives for engaging RAM than the defender typology. First, it is easier to reduce research and development costs and marketing costs in a manager's prospector strategy because they are relatively higher in the prospector strategy than in the defender strategy. However, firms that pursue a prospector strategy are far more reliant on these expenditures because prospectors' features are more focused on product development and market expansion than defenders' features (Chen et al., 2017). Prospectors are more likely to develop their competitive advantage by allocating the marketing and R&D costs more effectively than defenders (Rahman et al., 2021). Furthermore, prospectors are more cautious in reducing SG & A costs that will impact future competitive advantages to maintain sales growth and maximize future economic benefits (Ballas et al., 2020). In other words, it is easier for defenders to engage in RAM using discretionary expense than prospectors.

Second, prospectors have higher operational complexities and transaction scopes than defenders (Bentley-Goode et al., 2017). Furthermore, prospectors are more likely to experience financial distress than defenders due to uncertainty in finding new markets and new products and having lower operating cash flows (Chen et al., 2017), making it more difficult to restructure sales in real activities. In contrast, defenders have a more defined performance measurement with existing products and markets. Third, an over-production strategy is also more challenging for prospectors because the product domain is broader and more diverse than the defenders' narrower product domain. In sum, earnings manipulation using real transactions at the individual and aggregate levels tends to be less flexible in the prospector strategy than the defender strategy. As a result, the following hypothesis is stated in the alternative form:

*Hypothesis (H2): Prospectors are less likely to engage in RAM than defenders, and vice versa.*

### **2.4. Business strategy and earnings management preference**

Previous research revealed that managers could choose between AEM and RAM and trade-offs between them (Cohen & Zarowin, 2010). However, the manager's decision to substitute or complement AEM with RAM and vice versa depends on the relative cost and time required to accomplish the two EM targets (Burnett et al., 2012; Zang, 2012). Furthermore, companies with a prospector strategy focus on more innovation and long-term performance achievement. Therefore, we argue that companies with a prospector business strategy have a lower tendency to perform both AEM and RAM concurrently compared to defender strategies. As a result, the following hypothesis is stated in the alternative form:

*Hypothesis (H3): Firms that follow prospector strategies are less inclined to engage in AEM and RAM simultaneously than defender strategies, and vice versa.*

## **3. Research design**

### **3.1. Sample and empirical model**

Aside from other EM tools, the type of real activities manipulation requires production activities, so we select our sample from companies in the industrial/manufacturing sectors on the Indonesia Stock Exchange (IDX) using a purposive sampling method<sup>1</sup>. Secondary data are collected from the annual report and audited financial statements published by the IDX and listed firms from 2012 to

2018. Data are analyzed using Stata software version 14.2. Please refer to Table 1 for the sample selection. We use the following linear multiple regression models to examine our hypotheses: H1, H2, and H3. Please see Appendix 1 for the variable definitions for each variable in the regression models below.

$$\begin{aligned} \text{DACC} = & \rho_0 + \rho_1 \text{STRATEGY} + \rho_2 \text{BIG4} + \rho_3 \text{LNASSETS} + \rho_4 \text{OCF} + \rho_5 \text{DEBTA} \\ & + \rho_6 \text{LOSS} + \rho_7 \text{ROA} + \rho_8 \text{CHROA} + \rho_9 \text{SLSGRW} + \rho_{10} \text{BMR} \\ & + \rho_{11} \text{LOG}(\text{AGE}) + \rho_{12} \text{TACC} + \sigma_k \text{DMYEAR} + \delta_j \text{DMIND} + e \end{aligned} \quad (1)$$

$$\begin{aligned} \text{RAM} = & \lambda_0 + \lambda_1 \text{STRATEGY} + \lambda_2 \text{BIG4} + \lambda_3 \text{LNASSETS} + \lambda_4 \text{OCF} + \lambda_5 \text{DEBTA} \\ & + \lambda_6 \text{LOSS} + \lambda_7 \text{ROA} + \lambda_8 \text{CHROA} + \lambda_9 \text{SLSGRW} + \lambda_{10} \text{BMR} \\ & + \lambda_{11} \text{LOG}(\text{AGE}) + \sigma_k \text{DMYEAR} + \delta_j \text{DMIND} + e \end{aligned} \quad (2)$$

$$\begin{aligned} \text{PREFERENCE} = & \varphi_0 + \varphi_1 \text{STRATEGY} + \varphi_2 \text{BIG4} + \varphi_3 \text{LNASSETS} + \varphi_4 \text{OCF} \\ & + \varphi_5 \text{DEBTA} + \varphi_6 \text{LOSS} + \varphi_7 \text{ROA} + \varphi_8 \text{CHROA} + \varphi_9 \text{SLSGRW} \\ & + \varphi_{10} \text{BMR} + \varphi_{11} \text{LOG}(\text{AGE}) + \sigma_k \text{DMYEAR} + \delta_j \text{DMIND} + e \end{aligned} \quad (3)$$

We expect that the coefficients  $\rho_1$ ,  $\lambda_1$ , and  $\phi_1$  are negative and statistically significant to support the hypotheses of H1, H2, and H3, respectively. We include control variables in our empirical models because some variables can influence DACC, RAM, and EM preferences (PREFERENCE) based on previous research. These variables are company size (LNASSETS), leverage (DEBTA), companies that experience a loss in the year (LOSS), operating cash flow (OCF), sales growth rate (SLSGRW), return on assets (ROA), changes in return on assets (CHROA), the book to market ratio (BMR), total accruals (TACC), and company age (AGE) (e.g., Balsam et al., 2003; Chi et al., 2011; Gul et al., 2009). In addition, other variables influence the dependent variables DACC and RAM, which are related to audit quality (BIG4). Finally, we follow Petersen (2009) to control the fixed effects of the year and industry using year dummies (DMYEAR) and industry dummies (DMIND). Variable definitions can be found in Appendix 1.

### 3.2. Variable measurement

#### 3.2.1. Business strategy (STRATEGY)

This study employs the measurement of business strategy following past research. Bentley et al. (2013), for example, developed a measurement of Miles and Snow's (2003; 1978) business strategy based on a comprehensive construct comprising six measurable characteristics of the prospector, analyzer, and defender strategies: (i) the research and development expense-to-total-sales ratio; (ii) the employee-to-sales ratio; (iii) the one-year sales growth rate; (iv) the selling, general, and administrative expense-to-total-sales ratio; (v) the standard deviation of the number of employees; and (vi) the property, plant, and equipment-to-total assets ratio. Each firm's measurement is based on a three-year rolling average value. We then classify each measure's score into quintiles

**Table 1. Sample selection**

Description	Total
All firm-year observations in the industrial or manufacturing sector listed on Indonesia Stock Exchange from 2012 to 2018	1015
Less: missing data and non-active firms	231
Less: data using foreign currency (USD)	15
Less: missing data from 2009 to 2011 needed for business strategy measurements	112
Final sample in firm-year observations	665



based on firm-year observations. The top quintile of the observations receives a score of five, the next quintile receives a score of four, and so on, until the lowest quintile receives a score of one. Then, except for the sixth measure, property, plant, and equipment are reverse-scored concerning total assets to reflect prospectors' lower capital intensity than defenders. After that, we sum the scores for each measure to obtain a composite score for each firm.

This score indicates whether the firm is a prospector, defender, or analyzer. On one end, the prospector strategy has a potential maximum score of 30, which is the end of the continuum business strategy; on the other side, the defender strategy has a maximum score of six, which is also the end of the continuum company strategy.

STRATEGY is our main variable and is a discrete variable, i.e., the sum of the six indicators. For example, prospector strategies have a STRATEGY score of 24–30, defender strategy of 6–12, and analyzer strategies of 13–23.

### 3.2.2. *Accrual earnings management (DACC)*

Discretionary accruals serve as a proxy for AEM (DACC). This study employs an accrual model to operationalize the discretionary accruals (DACC) from Tucker and Zarowin (2006), who followed the Dechow et al. (1995) model:

$$TACC_{it}/A_{it-1} = \alpha_0 + \alpha_1[1/A_{it-1}] + \beta_1[\Delta REV_{it}/A_{it-1}] + \beta_2[PPE_{it}/A_{it-1}] + \delta_1 ROA_{it} + \varepsilon_{it} \quad (4)$$

We obtain the value of the discretionary accruals (DACC) based on Equation (4), i.e., the actual value of TACC (total accruals) is deducted by the estimated value of TACC (non-discretionary accruals). Then, following Chi et al. (2011), the standardized value of DACC for each firm  $i$  is obtained using the formula  $(DACC_i - \text{mean})/\text{standard deviation}$ . Please see Appendix 1 for variable definitions in Equation (4).

### 3.2.3. *Real activities manipulation (RAM)*

We follow Kim and Park (2014) and other previous studies (e.g., Chi et al., 2011; Roychowdhury, 2006) to obtain RAM as the sum of abnormal cash flows from operations (ABNCFO), abnormal production (ABNPROD), and abnormal discretionary expense (ABNDEXP). These real transactions on an individual level can be found using the following equations:

$$CFO_{it}/TA_{it-1} = \alpha_0 + \alpha_1(1/TA_{it-1}) + \beta_1(S_{it}/TA_{it-1}) + \beta_2(\Delta S_{it}/TA_{it-1}) + \varepsilon_{it} \quad (5)$$

$$PROD_{it}/TA_{it-1} = \alpha_0 + \alpha_1(1/TA_{it-1}) + \beta_1(S_{it}/TA_{it-1}) + \beta_2(\Delta S_{it}/TA_{it-1}) + \beta_3(\Delta S_{it-1}/TA_{it-1}) + \varepsilon_{it} \quad (6)$$

$$DISEXP_{it}/TA_{it-1} = \alpha_0 + \alpha_1(1/TA_{it-1}) + \beta_1(S_{it-1}/TA_{it-1}) + \varepsilon_{it} \quad (7)$$

Like discretionary accruals (DACC), we obtain the abnormal CFO (ABNCFO) from Equation (5), i.e., the actual value of the CFO is deducted by the estimated value of the CFO based on the regression results. All other real transaction activities (ABNPROD and ABNDEXP) are obtained in the same way, i.e., the actual cost of goods sold and changes in inventory (PROD) are deducted by the estimated value of PROD from Equation (6), and the actual discretionary expense (DISEXP) is deducted by the estimated value of the discretionary expense from Equation (7). Next, real activity values at the individual levels are standardized using their respective values. For example, the standardized value of ABNCFO is equal to  $(ABNCFO_i - \text{mean})/\text{standard deviation}$  (please see Chi et al., 2011 for detail). Finally, to obtain RAM at the aggregate level, we add all the standardized values of real activities at the individual level, i.e.,  $(ABNPROD - ABNCFO - ABNDEXP)$  (Chi et al., 2011; Kim & Park, 2014). All variables used in Equations (5), (6), and (7) can be found in Appendix 1.

### 3.2.4. *Preference for earnings management (PREFERENCE)*

The study conducts two stages to construct a new measure of EM preference (PREFERENCE). First, we use our previous standardized values for DACC and RAM to measure the total magnitude of EM.

We employ both standardized values from EM tools (DACC and RAM) because managers can make trade-offs between the two tools to achieve earnings targets. Second, the PREFERENCE variable is calculated by adding the value of RAM and DACC to their respective standardized values. We conclude that the lesser the magnitude of the EM, the lesser preference for management to manage earnings and vice versa.

## 4. Results and discussion

### 4.1. Descriptive statistics and correlation

Table 2 summarizes the descriptive statistics of all variables. The sample is 665 firm-year observations, with total sub-samples for prospectors, analyzers, and defenders, i.e., 47, 573, and 45. Consistent with previous studies, our major observations are firms with analyzer typologies (e.g., Bentley et al., 2013; Martinez & Ferreira, 2019). Table 2 reports the mean of DACC and RAM, i.e., -0.088 and -0.053, respectively. These data profiles indicate that the average observation under-study, including analyzers, engages in AEM at -8.80 percent of the lag total assets and RAM at an aggregate level of -5.30 percent of the lag-total assets. The sub-sample of companies with prospector and defender typologies had an AEM (DACC) mean of -0.125 and -0.115, respectively. RAM's mean in prospector and defender typologies was -0.218 and 0.017, respectively. They demonstrate preliminary evidence that prospectors have lower means in AEM and RAM than defenders.

The mean of PREFERENCE was negative and -0.145, indicating that the mean of combined AEM and RAM for the full sample, including observations with analyzer strategies, had a negative preference for EM. Meanwhile, the PREFERENCE means for sub-sample prospector and defender typologies are -0.343 and -0.098, respectively,

indicating that the sub-sample prospectors are more likely to have a lower preference for EM than the defenders.

The mean business strategy scores (STRATEGY) for the full sample, prospectors, and defenders are 18.001, 24.872, and 11.200, respectively. These figures are consistent with the prospector strategy scores ranging from 24-30 and the defender strategy scores from 6-12. Analyzer strategies have a mean score of 18.001, consistent between 13 and 23.

### 4.2. Hypotheses testing results and discussion

#### 4.2.1. Business strategy and accrual earnings management (AEM)

Table 3 presents the regression results of the hypothesis using Model 1. The STRATEGY variable has a negative coefficient ( $p1 = -0.004$ ) and is significant at 10 percent ( $t$ -test = -1.53,  $p$ -value = 0.064). Our test result finds a negative association between STRATEGY and DACC, supporting our hypothesis. This empirical evidence denotes that prospector strategies are more negatively associated with AEM than defender strategies.

Our study shows that firms following prospector strategies are less likely to perform AEM than those with defender strategies. This study's findings support the argument of previous studies that prospector strategists focus more on innovations and long-term performance measurement than on short-term performance achievements, resulting in managers in the prospector firms having fewer incentives in AEM than managers in defender firms (Bentley et al., 2013; Bentley-Goode et al., 2017). Conversely, defenders focus more on short-term performance achievements than on long-term performance. Therefore, firms with defender strategies often engage more in AEM to achieve earnings benchmarks as part of their financial performance (Miles & Snow, 1978; Ittner, 1997; Miles & Snow, 2003; Rajagopalan, 1997).

**Table 2. Descriptive statistics**

Variable	Full Sample (n=665)				Prospectors (n=47)		Defenders (n= 45)	
	Mean	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	Mean	Median	Mean	Median
DACC	-0.088	-0.149	-0.023	0.053	-0.125	-0.012	-0.115	-0.030
RAM	-0.053	-0.270	-0.001	0.189	-0.218	-0.112	0.017	0.101
PREFERENCE	-0.145	-0.387	-0.046	0.208	-0.343	-0.148	-0.098	0.073
STRATEGY	18.001	15.000	18.000	21.000	24.872	24.000	11.200	12.000
BIG4	0.376	0.000	0.000	1.000	0.340	0.000	0.422	0.000
LNASSETS	14.393	13.325	14.147	15.282	13.797	13.324	14.266	14.112
DEBTA	0.494	0.273	0.438	0.612	0.436	0.306	0.521	0.550
LOSS	0.191	0.000	0.000	0.000	0.213	0.000	0.133	0.000
OCF	0.087	0.010	0.061	0.124	0.038	0.042	0.141	0.037
SLSGRW	0.187	0.000	0.059	0.162	0.160	0.040	0.093	0.020
BMR	0.187	0.250	0.059	0.162	1.041	0.627	1.666	1.194
ROA	0.066	0.004	0.049	0.106	0.072	0.039	0.067	0.032
CHROA	-0.303	-0.590	-0.096	0.190	-0.148	-0.119	-1.131	-0.315
LOG(AGE)	2.795	2.772	3.044	3.219	2.659	2.944	2.700	2.996
TACC	-0.020	-0.052	-0.011	0.029	-0.006	0.011	-0.058	-0.032
RDS	0.003	0.000	0.000	0.000	0.022	0.001	0.000	0.000
EMP	0.002	0.001	0.001	0.002	0.006	0.002	0.001	0.001
REV	0.081	0.000	0.055	0.131	0.138	0.131	-0.007	0.000
SGA	0.160	0.055	0.106	0.189	0.368	0.293	0.049	0.019
$\sigma$ (EMP)	0.533	0.151	0.653	0.884	0.677	0.789	0.216	0.129
CAP	0.361	0.200	0.314	0.473	0.257	0.211	0.406	0.388

Notes: Appendix 1 contains descriptions of all variables.

Our empirical findings also reveal that firms in Indonesia are associated with accrual earnings management (AEM) techniques depending on each firm’s business strategy typologies. Our results demonstrate that firms with lower AEM behavior tend to be prospector-type business strategists. On the other hand, firms with defender-type business strategies have higher AEM than prospector strategies. These findings strengthen the argument that firms who pursue prospector strategies are more concerned with the future and long-term performance than meeting earnings targets in the short-term (Miles & Snow, 1978; Ittner, 1997; Miles & Snow, 2003; Rajagopalan, 1997). In contrast, firms that follow defender strategies emphasize bonuses based on short-term achievement and have more incentive control (Miles & Snow, 1978; 2003). The prospectors’ strength lies in the market control and innovation that influence the behavior of managers who ensure that the firms can meet consumer expectations and market competition, compared to the achievement of short-term financial performance. While the prospector strategy outperforms market share, the defender strategy focuses on short-term profitability and performance (Hambrick, 1983). Thus, there is less motivation to manipulate AEM in prospector-oriented firms since managers focus more on improving new and innovative products.

#### 4.2.2. Business strategy and real activities manipulation (RAM)

The results of the hypothesis for Model 2 are also shown in Table 3. The STRATEGY variable has a negative coefficient ( $\lambda_1 = -0.018$ ) and is statistically significant at 1 percent (t-test = -4.04, p-value < 0.001). This test finds a strong negative association between strategy typologies (STRATEGY) and real transactions (RAM). These findings show that firms with prospector strategies

**Table 3. Regression results of AEM and RAM**

Variable	Dependent Variable	Model 1			Model 2		
		DACC			RAM		
		Pred. Sign	Coeff.	t-test	p-value	Coeff.	t-test
Constant	?	-1.568***	-11.17	0.000	-0.409	-1.57	0.058
STRATEGY	-	-0.004*	-1.53	0.064	-0.018***	-4.04	0.000
BIG4	-	-0.037**	-2.12	0.034	0.026	0.50	0.616
LNASSETS	?	0.121***	11.06	0.000	0.056***	3.12	0.002
OCF	-	-0.613**	-2.04	0.021	-1.223***	-16.97	0.000
DEBTA	+	-0.055*	-1.51	0.066	-0.036	-0.90	0.185
LOSS	-	-0.016	-0.45	0.327	-0.063*	-1.31	0.096
ROA	-	0.070	0.23	0.409	-0.086	-0.57	0.283
CHROA	-	-0.004	-0.53	0.298	-0.001	-0.11	0.456
SLSGRW	-	-0.026	-1.53	0.126	0.021	0.74	0.230
BMR	-	0.001	0.05	0.482	0.021**	2.16	0.016
LOG(AGE)	-	-0.036***	-5.37	0.000	-0.011	-0.49	0.313
TACC	+	0.370*	1.49	0.068			
DMYEAR	?			Yes			Yes
DMIND	?			Yes			Yes
Observations				665			665
Adjusted R <sup>2</sup>				0.5391			0.1955
F-value				66.12			35.63
p-value				<0.001			<0.001

Notes: \*\*\*, \*\*, \* Represents statistical significance at 1 percent, 5 percent, and 10 percent levels, respectively, one-tailed tests when the coefficient is predicted and two-tailed tests otherwise. Appendix 1 contains descriptions of all variables.

tend to have lower real transaction EM than firms with defender typologies, consistent with our initial prediction.

Our findings are in the same direction as those of Wu et al. (2015), who discovered that firms with Porter's (1980) cost leadership typology, i.e., similar to defenders in Miles and Snow's (2003; 1978) typology, tended to manipulate real activities more than firms with the differentiation typology, similar to prospectors. Our study demonstrates that firms employing prospector strategies make harder efforts to manage real transactions, i.e., restructuring sales, decreasing discretionary spending, and overproduction, than firms employing defender strategies. Prospectors, for example, are more conservative in minimizing SG&A expenditures to preserve sales growth and optimize future economic advantages because engaging in these discretionary expenses will impair future competitive advantages (Ballas et al., 2020). On the other hand, defenders are easier to engage in RAM using discretionary expense than prospectors. As a result, prospectors typically have a lower RAM than defenders, consistent with the characteristics and complexities of business strategy in their respective typologies (Chen et al., 2017; Miles & Snow, 1978; 2003).

In terms of corporate performance, prospectors will show higher sales, while defenders tend to have a negative performance in terms of growth (Parnell & Wright, 1993; Zamani et al., 2013). In this case, managers will focus more on strategies to increase long-term value than on short-term performance. In contrast, defenders tend to take steps that can be cost-beneficial because this strategy is more likely to be a low-cost strategy. The defenders will consider managing earnings by engaging in real activities if they affect their costs and meet the earnings targets in the short term. If real activities result is cost savings and improved performance, managers with defender-type

**Table 4. Regression result of earnings management preference**

Variable	Dependent Variable	Model 3		
		PREFERENCE		
	Pred. Sign	Coeff.	t-test	p-value
Constant	?	-1.974***	-5.72	0.000
STRATEGY	-	-0.022***	-3.59	0.000
BIG4	-	-0.012	-0.19	0.424
LNASSETS	?	0.177***	7.05	0.000
OCF	-	-2.211***	-19.56	0.000
DEBTA	+	-0.091*	-1.31	0.095
LOSS	-	-0.075	-1.04	0.150
ROA	-	0.379**	1.96	0.025
CHROA	-	-0.005	-0.34	0.369
SLSGRW	-	-0.005	-0.11	0.456
BMR	-	0.021*	1.62	0.105
LOG(AGE)	-	-0.048*	-1.83	0.034
DMYEAR	?			Yes
DMIND	?			Yes
Observations				665
Adjusted R <sup>2</sup>				0.3816
F-value				55.36
p-value				<0.001

Notes: \*\*\*, \*\*, \* Represents statistical significance at 1 percent, 5 percent, and 10 percent levels, respectively, one-tailed tests when the coefficient is predicted and two-tailed tests otherwise. Appendix 1 contains descriptions of all variables.

strategies are more likely to choose RAM. In Indonesia, business strategy typologies chosen by firms also influence the behavior of managers, especially concerning firm performance. These results also imply that the defender strategies will be superior to those in companies that consider performance and costs with prospector strategies.

#### 4.2.3. Business strategy and earnings management preference

Table 4 reports the hypothesis testing using Model 3. It tests whether prospectors have less preference for AEM and RAM concurrently than defenders. The test result finds that the STRATEGY coefficient was negative ( $\delta_1 = -0.022$ ) and is statistically significant at 1 percent (t-test = -3.59, p-value < 0.001). This test result yields a negative association between the variable STRATEGY and the PREFERENCE, indicating that firms that follow prospector strategies have a lower preference for using both AEM and RAM simultaneously than defenders. In other words, the higher (lower) the score of STRATEGY indicated by the prospector (defender) strategies, the lower (higher) the preference for the firms to engage in EM will be.

Our finding suggests that prospector strategies in Indonesia, performing these two-type earning management tools concurrently, are relatively more expensive than defender strategies. Although managers in prospector strategies can make trade-offs between AEM and RAM (Cohen & Zarowin, 2010), the overall costs of those EM tools are significantly higher than in defender strategies, and hence, managers have a lesser preference for both types of EM tools.

The test results show that the difference in focus based on these two strategies also affects the behavior of managers. For example, managers will not focus on both AEM and RAM as their strategies to attain short-term performance in prospector strategies because prospectors are more focused on selling

new products to create financial prosperity in the long run (Miles & Snow, 1978; 2003). Therefore, only industries that are consistently innovative will choose these prospector-type strategies. In addition, firms with prospector strategies will only incur higher costs if they perform AEM and RAM altogether. Firms with cost-focused defensive strategies, on the other hand, can deploy AEM and RAM to achieve short-term performance. As a result, prospector-type strategies will outperform defender strategies in terms of market share, while defender strategies will outperform prospector strategies in profitability (Hambrick, 1983).

Taken together, our findings have practical implications. Prospector-type business strategies with inherent material weaknesses and a lower likelihood of material weakness remediations, as found in the previous studies (e.g., Bentley-Goode et al., 2017; Chen et al., 2017), do not necessarily have lower earnings quality than the defenders due to their lower AEM, RAM, and preference for EM. Compared to the defenders, internal control weaknesses in the prospector strategies may have nothing to do with irregularities and merely provide management with incentives to engage in EM, resulting in lower earnings quality.

## 5. Additional analyses

### 5.1. Business strategy and individual level RAM

Because managers can perform a combination of real activities at the individual level, we perform further analyses to see the association between business strategy (STRATEGY) and RAM at the individual levels, i.e., through restructuring of sales transactions (ABNCFO), overproduction (ABNPROD), and abnormal discretionary expense (ABNDEXP) as in the Equations (5), (6), and (7). To demonstrate a positive relation between STRATEGY and both abnormal CFO and abnormal discretionary expense, the variables ABNCFO and ABNDEXP are multiplied by a negative number (-1), resulting in new variables, ABNCFO(-1) and ABNDEXP(-1).

Table 5 reports the test results of multiple regression at the individual levels. The STRATEGY coefficient is not significant for the dependent variables, ABNCFO(-1) (t-test = -0.99, p-value = 0.163) and ABNPROD (t-test = -0.41, p-value = 0.349) at 10%, respectively. In contrast, the STRATEGY coefficient is significant and negative for the dependent variable ABNDEXP(-1) at 1% (t-test = -7.57, p-value < 0.001). The results do not find evidence between strategy typology and RAM at the individual level for abnormal CFO (ABNCFO(-1)) and overproduction (ABNPROD). However, we find a negative relationship between business strategy and abnormal discretionary expense (ABNDEXP(-1)). The results indicate that prospectors are less inclined to reduce discretionary operating expenses than firms that follow defender strategies. Our additional finding is consistent with prospector characteristics in that prospectors are more reluctant than defenders to reduce marketing expenditure, and research and development (R&D) costs as discretionary operating expenses when pursuing new products and market innovations (e.g., Ballas et al., 2020).

### 5.2. Business strategy and other accrual models

We perform a robustness test for Model 1 (DACC) using another accrual model, i.e., Kothari et al. (2005). The untabulated test results show that the STRATEGY coefficient is negative but not significant at 10 percent (t-test = -0.22, p-value = 0.825). Therefore, our study concludes that the robustness test results using other accrual models are sensitive to the accrual model used and do not support the main test results of hypothesis one.

### 5.3. Business strategy and earnings benchmarks

Previous studies suggest that managers employ a blend of AEM and RAM to meet earnings benchmarks (Beyer et al., 2018; Cohen et al., 2008; Cohen & Zarowin, 2010; Zang, 2012). We perform additional analysis to examine whether prospectors are less inclined to achieve earnings benchmarks using discretionary accruals and real transactions. We follow Beyer et al. (2018) to measure a dependent variable, BENCHMARKS. BENCHMARKS is a dichotomous variable, equal to 1 if one or both criteria are met, i.e., (1) net income scaled by lag total assets; and (2) changes in net

**Table 5. Regression results of individual RAM**

Variable	Pred. Sign	Dependent Variable											
		ABNCF0(-1)				ABNPROD				ABNDEXP(-1)			
		Coeff.	t-test	p-value		Coeff.	t-test	p-value		Coeff.	t-test	p-value	
Constant	?	-0.847***	-9.07	0.000	0.357*	1.69	0.091		0.081	1.02	0.309		
STRATEGY	-	-0.002	-0.99	0.163	-0.001	-0.41	0.349		-0.015***	-7.57	0.000		
BIG4	-	-0.012	-0.88	0.191	0.047	1.13	0.130		-0.008	-0.47	0.324		
LNASSETS	?	0.762***	10.10	0.000	-0.029**	-1.99	0.047		0.013***	2.75	0.006		
OCF	-	-1.167***	-17.04	0.000	-0.111**	-1.98	0.024		0.055**	1.72	0.043		
DEBTA	+	-0.023	-1.12	0.133	-0.031	-1.17	0.122		0.018	1.02	0.155		
LOSS	-	-0.013	-0.61	0.272	-0.047*	-1.31	0.096		-0.003	-0.14	0.446		
ROA	-	0.065	0.89	0.186	-0.191*	-1.57	0.059		0.040	0.66	0.254		
CHROA	-	-0.003	-0.64	0.262	0.001	0.10	0.447		0.001	0.46	0.322		
SLSGRW	-	-0.019	-1.28	0.101	0.036*	1.95	0.026		0.003	0.32	0.377		
BMR	-	-0.001	-0.00	0.499	0.013*	1.92	0.028		0.008**	2.09	0.019		
LOG(AGE)	-	-0.023***	-3.62	0.000	0.011	0.59	0.279		0.001	0.07	0.474		
DMYEAR	?			Yes			Yes				Yes		
DMIND	?			Yes			Yes				Yes		
Observations				665			665				665		
Adjusted R <sup>2</sup>				0.6671			0.0125				0.1057		
F-value				74.47			1.99				7.53		
p-value				<0.001			0.026				<0.001		

Notes: \*\*\* \*\* \* Represents statistical significance at 1 percent, 5 percent, and 10 percent levels, respectively, one-tailed tests when the coefficient is predicted and two-tailed tests otherwise. Appendix 1 contains descriptions of all variables.

income scaled by lag total assets are in the range of < 0.01 – 0.00, and 0 otherwise (Beyer et al., 2018). Thus, the BENCHMARKS variable proxies the tendency to achieve earnings benchmarks. We use a logistic regression model due to our dependent variable is a dichotomous variable, as follows:

$$\begin{aligned} \text{Pr}(\text{BENCHMARKS}) = & \zeta_0 + \zeta_1 \text{STRATEGY} + \zeta_2 \text{DACC} + \zeta_3 \text{RAM} + \zeta_4 \text{BIG4} + \zeta_5 \text{LNASSETS} + \zeta_6 \text{OCF} \\ & + \zeta_7 \text{DEBTA} + \zeta_8 \text{LOSS} + \zeta_9 \text{ROA} + \zeta_{10} \text{CHROA} + \zeta_{11} \text{SLSGRW} + \zeta_{12} \text{BMR} \\ & + \zeta_{13} \text{LOG}(\text{AGE}) + \sigma_k \text{DMYEAR} + \rho_j \text{DMIND} + e \end{aligned} \quad (8)$$

Our additional testing results (untabulated) found that the STRATEGY coefficient ( $\zeta_1 = 0.003$ ) is positive but not significant (z-test = 0.08, p-value = 0.468) at the level of 10 percent. After controlling for accrual discretionary and real transactions as the proxies for EM in the regression model, our additional test using the same number of observations finds no relationship between business strategy typologies and the likelihood of achieving the earnings benchmarks.

## 6. Conclusions

This study investigates the association between business strategies using the typology of Miles and Snow (2003; 1978) and EM. The study uses accrual-based EM (AEM) and real activities manipulation (RAM) as proxies of EM. We also use a combined magnitude of AEM and RAM as our new construct to measure EM preference. Our empirical test results of a sample of publicly listed firms in Indonesia find that prospectors engage AEM and RAM less than defenders. Furthermore, our study finds that prospectors have a lower likelihood of EM preference using a combined AEM and RAM than defenders.

Prior studies found that prospector strategies are more likely than defenders to have material weaknesses, less likely to remediate material weaknesses, and more likely to engage in irregularities resulting in lower earnings quality. In contrast, our study finds that prospectors do not necessarily have lower earnings quality than defenders due to lower AEM, RAM, and preference for using both EM tools concurrently. These results correspond to Hennes et al. (2008), who assert that internal control weaknesses in prospector strategies that result in financial statement misstatements and restatements may have nothing to do with fraud and irregularities. Our research also demonstrates a linkage between business strategy typologies in organizational theory and earnings management literature by identifying the preference for EM in each strategy typology setting.

This study is not without a caveat. First, the results of this study should be interpreted with caution since the measurement of each business strategy's component score is based on a rolling three-year average. In contrast, firms' business strategies are usually set for longer periods. Second, this study cannot isolate other EM tools used by the manager in each firm. We only use AEM and RAM in operating activities as proxies for EM tools. Meanwhile, managers can use various EM tools, such as real transactions in financing and investing activities (e.g., Vorst, 2016; Xu et al., 2007). Further research must address the limitations of this study.

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### Note

1. Considering the above observations in our sample selection, we are aware of a potential bias in our



inferential statistics because not all listed firms in the Indonesia Stock Exchange have production activities.

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## Appendix 1. Variable definitions

Variables used in the model (1), (2), and (3)	
DACC	= Accrual EM is proxied by discretionary accruals (DACC).
RAM	= Real EM. RAM is the sum of abnormal cash flows from operation (ABNCFO), abnormal production (ABNPROD), and abnormal discretionary expense (ABNDEXP) (Kim & Park, 2014).
PREFERENCE	= The sum of standardized value of discretionary accruals (DACC) and real transactions (RAM).
STRATEGY	= The score of business strategy. Following Bentley et al. (2013) and Chen et al. (2017), the score of business strategy is computed using six measures. Each measure is computed using a three-year rolling average value and then ranked into quintiles for each industry-year. Observation in the highest quintile is given a score of 5, and those in the lower quintile are given a 4, and so on, except for capital intensity is given the reverse score. For example, a prospector-type business strategy has a score range of 24-30; analyzer 13-23; and defender 6-12.
BIG4	= Dummy variable, 1 if the firm is audited by one of the big4 audit firms, and 0 otherwise
LNASSETS	= Total assets in natural logarithm
DEBTA	= Debt to total assets ratio
LOSS	= Dummy variable, 1 if a firm reports loss in the year t; and 0 otherwise
OCF	= Operating cash flows scaled by lag total assets
SLSGRW	= Sales growth, i.e., changes in sales from the previous year's sales
BMR	= Book to market ratio
ROA	= Return on assets
CHROA	= Changes in return on assets
LOG(AGE)	= Log number of years since the firm's IPO
TACC	= Total accruals, i.e., operating income minus cash flows from operating activities
DMYEAR	= Dummy variable for year
DMIND	= Dummy variable for sub-industry in the manufacturing industry
Component of business strategy	
RDS	= The ratio of R&D expense to sales as a measure of the firm's propensity to search for new products
EMP	= The ratio of employees to sales as a measure of production and distribution efficiency
REV	= Percentage change in sales revenue as a measure of firm growth
SGA	= The ratio of SG&A expense to total sales as a measure of firm focus on exploiting new products and services
$\sigma(\text{EMP})$	= The standard deviation of the number of employees computed over a three-year as a measure of organizational stability
CAP	= Net PP&E scaled by total assets as a measure of capital intensity
Equation (4)	
TACC	= Total accruals, i.e., operating income minus cash flows from operating activities
A	= Total assets
PPE	= Property, plant, and assets in a gross amount
$\Delta\text{REV}$	= Changes in revenues, i.e., sales t- sales t-1
ROA	= Return on assets
Equations (5), (6), (7)	

(Continued)

(Continued)

**Variables used in the model (1), (2), and (3)**

CFO	=	Cash flows from operating activities
A	=	Total assets
S	=	Sales
$\Delta S$	=	Changes in sales, i.e., sales $t$ - sales $t-1$
PROD	=	The sum of the cost of goods sold and changes in inventory
DISEXP	=	The sum of R&D costs, promotion costs, and SG&A
RAM	=	The aggregate value of real activities, i.e. (ABNPROD - ABNCFO - ABNDEXP)



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