

Alhebri, Adeeb Abdulwahab; Al-Duais, Shaker Dahan

**Article**

## Family businesses restrict accrual and real earnings management: Case study in Saudi Arabia

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\*Corresponding author: Shaker Dahan Al-Duais, Accounting Department, Faculty of Administrative Sciences, Ibb University, Ibb, Yemen  
E-mail: [shakeralduais@gmail.com](mailto:shakeralduais@gmail.com)

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Collins G. Ntim, Accounting,  
University of Southampton, United  
Kingdom

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

# Family businesses restrict accrual and real earnings management: Case study in Saudi Arabia

Adeeb Abdulwahab Alhebbri<sup>1,2</sup> and Shaker Dahan Al-Duais<sup>1\*</sup>

**Abstract:** This paper investigates accrual earnings management (AEM) and real earnings management (REM) in family businesses (FB) in Saudi Arabia. Current literature indicates that minority rights are confiscated by the controlling shareholders in a business environment weak to protect investors. Based on this argument, considering the various implications of AEM and REM on family businesses, the results show evidence that family businesses in Saudi Arabia engaged in both types of earnings management during the period 2014–2018, with a positive and significant effect on both AEM and REM. This evidence supports the entrenchment hypothesis that FB have lower earnings quality due to manipulation in accruals and real activities. The results therefore indicate that earnings announced in Saudi family businesses' financial statements are less reliable. These findings, that family-controlled firms are able to manipulate earnings, should be considered by regulators and policy makers.

**Subjects:** Family Policy; Auditing; Financial Accounting; Corporate Governance; International Business

**Keywords:** family businesses; real earnings management; accrual earnings management

### ABOUT THE AUTHOR

Adeeb Abdulwahab Alhebbri is an Assistant Professor at King Khalid University, Abha, Saudi Arabia and Ibb University, Ibb, Yemen. His research interests include cost management, firm performance measurement and evaluation, accounting education and financial reporting quality.

Shaker Dahan AL-Duais is an Assistant Professor of Accounting and Auditing at Faculty of Administrative Science, Ibb University, Yemen. His research interests include earnings management, financial accounting and reporting, corporate governance, and auditing.

### PUBLIC INTEREST STATEMENT

This paper examines the effect of family businesses on accruals and real earnings management in the Saudi Arabia market. Family businesses are spread widely there, and the practice of earnings management is also prevalent in the Saudi market. Inconsistent empirical results regarding the impact of family control on the quality of financial reporting motivate this research. Therefore, the study seeks to determine whether the entrenchment theory or alignment theory is appropriate in the Saudi market. The study uses secondary panel data that were collected manually from annual reports and Thomson Reuters Datastream. The findings revealed a positive and significant relationship between family businesses and both AEM and REM, supporting the entrenchment theory. The results of this study may benefit policymakers, regulators, and investors interested in family businesses.

## 1. Introduction

The issue of earnings quality (EQ) has drawn the interest of academics and regulators worldwide. In fact, the 1997–1998 financial crisis in South East Asia and the subsequent financial scandals at Enron in 2001 and WorldCom in 2002 attracted public attention towards managers' opportunistic behaviour and raised concerns about the quality of financial reporting and the effectiveness of corporate governance in protecting shareholders' interests (Rezaee et al., 2003). Indeed, Saudi Arabia was not immune to such misconduct, and there have been several high-profile cases such as Anaam International Holding Group, Bishah Agriculture Development Company, Etihad Etisalat (Mobily) and Mohammad Al Mojil Group (MMG) (Al-Moghawli, 2010; Zerban & Madani, 2018). These scandals have raised concerns on the quality of the financial reporting process and the effectiveness of corporate governance (CG) in protecting shareholders' interests (Alzoubi, 2019; Bajra & Cadez, 2018), and on the pervasiveness of earnings management in Saudi Arabia (Al-Moghawli, 2010).

Saudi Arabia's empirical accounting literature shows that earnings management conduct exists among listed Saudi businesses. Alsehali (2006) examined the relationship between aggregate accruals and motivations for earnings management. He observed that managers of 40 Saudi firms manipulated accruals during the period 2001–2004 in order to achieve specific benchmarks in the amount of reported earnings and to underestimate any real unfavourable earnings. Al-Moghawli (2010) focused on intentional earnings management and provided empirical evidence from 46 Saudi-listed companies during 2005–2007 for the relationship between the ratio of foreign employees and opportunities to manage earnings to avert possible political costs. Al-Thuneibat et al. (2016) tested the relationship between corporate governance and earnings management; they found that the internal audit scope of the work and independence of the audit committee had a slight negative impact on earnings management. One of the important areas of focus regarding earnings management is the association between family businesses and earnings management levels. Family businesses play a significant role in global economic growth, whether in developed or developing countries. One study estimated that more than two-thirds of all businesses globally are owned or controlled by families and account for around half of gross domestic product (GDP) economic activity (Shanker & Astrachan, 1996). In the US, Anderson et al. (2003) showed that family-controlled companies represent one-third of S&P 500 companies, holding 19% of the companies' equity share on average. Family-controlled firms represent close to 90% of incorporated companies (Poza, 2007). Family businesses contributed 30–60% of the GDP of local economic activities in Europe (IFERA, 2003). A study conducted by Andres (2008) found that 63% of shares are in the possession of family members in the German market.

Saudi Arabia is an interesting area for research into family businesses and financial reporting quality, due to its high levels of ownership concentration in the hand of families (Al-Dubai et al., 2012; Qobo & Soko, 2010; Trinidad, 2020) and because it is considered a dominant economy in the Gulf Cooperation Council (GCC) countries (Espinoza & Senhadji, 2011). The vast majority of businesses in Saudi Arabia are either family-owned or family-controlled (Qobo & Soko, 2010); in the Forbes 2020 ranking of the ten most powerful family firms in Saudi Arabia, the Olayan Group is at the top of the list, followed by Rashid Abdul Rahman Al-Rashed and Sons Group, and in tenth place Al-Zahid Group. Conflicts of interest between minority and majority shareholders could be a major Type II agency problem (Claessens et al., 2002). Chi et al. (2015) indicated that the concentration of ownership, ineffective corporate governance, insufficient transparency, and a less rigid legal system provide a greater opportunity to the controlling shareholders to manipulate earnings. Thus, the concentration of family businesses is expected to significantly influence the quality of financial reporting in Saudi Arabia.

Despite the importance of family businesses, there is still little research in the area of family firms (Amran & Che Ahmad, 2009; Ibrahim & Abdul Samad, 2011), and limited empirical evidence linking family-controlled ownership with earnings management (Al-Duais et al., 2019a; Al-Duais et al., 2019b; Ishak et al., 2011). To the researchers' knowledge, this study is the first to examine the direct effect of FB on AEM and REM in the Saudi context. It employs data from a large sample over five years to answer the research question. Further, contrary to major earnings management

research that uses a single measure of earnings management (AEM), we study the effect of family control on REM as an alternative technique of earnings manipulation, especially in Saudi Arabia. That is, the current study investigates whether family-controlled businesses in the Saudi Arabia market mitigate or exacerbate AEM and REM. Using a sample of 106 publicly listed non-financial companies in Saudi Arabia between 2014 and 2018 (giving 530 firm-year observations), the findings show that family businesses engage in both AEM and REM. These findings include empirical evidence for REM in family businesses in an emerging economy and might be generalised in contexts similar to Saudi Arabia in terms of insufficient investor protection and institutional weaknesses. The rest of the paper is structured as follows. Section 2 reviews the literature and develops the study's hypotheses, while Section 3 describes the research design. The empirical results are analysed in Section 4 and the article is concluded in Section 5.

## 2. Literature review and hypothesis development

Family businesses should be more effective than other firms, as their monitoring costs are lower (Fama & Jensen, 1983). However, it is unclear whether they are strongly motivated to minimise or raise EM, and the literature provides two contradictory views. The first focuses on the entrenchment hypothesis and suggests that family businesses are associated with increasing EM (Wang, 2006). This hypothesis supports the agency problem (Jensen & Meckling, 1976) and the concept of tunnelling (Johnson et al., 2000), which is generally an indication that family control is likely to engage in transactions that shift wealth and income to themselves (Munir et al., 2013). There is information asymmetry between family members and other investors (Wang, 2006), because family members commonly hold vital positions on the board of directors (BOD) and in management, and the controlling family can pressurise managers to present manipulated performance results, with threats of further interference (Barclay & Holderness, 1991; Halioui & Jerbi, 2012; Shleifer & Vishny, 1997). Family members have therefore both the incentive and the ability to undertake EM for their own interests. The entrenchment hypothesis proposes, therefore, that a family business is likely to report positive performance with lower-quality financial reporting.

In this context, Fan and Wong (2002) investigated the link between the provision of information about earnings and the ownership structure among 977 registered companies in seven countries of East Asia (282 Hong Kong, 66 Taiwanese, 177 Malaysian, 133 Singaporean, 95 South Korean, 91 Indonesian and 133 Thai). Their findings show that concentrated ownership is linked to low EQ because this structure gives owners the power and motivation to adjust earnings for confiscation and to report unhelpful information about earnings in order to prevent detection. Similarly, in South Korea, Kim and Yi (2006) investigated the effect of majority shareholders on the extent to which opportunistic EM is practised. They found that major shareholders are prone to engage in opportunistic EM to hide their actions and prevent negative consequences. In Taiwan, Chin et al. (2006) found that companies with concentrated ownership and an associated pyramid cross-holding structure experience disputes between controlling owners and external shareholders, confirming that majority shareholders benefit from uninformed or optimistically inclined forecasts, and from a greater involvement in EM with a view to masking their opportunistic behaviour. Yang (2010) noted that the greater the insider ownership share, the higher is the EM level, providing support for an entrenchment influence of family ownership. A similar study by Chi et al. (2015) of high-tech companies listed in Taiwan shows that those owned by families are more likely to become involved in EM activities than non-family ones. A Pakistani study conducted by Kamran and Shah (2014) examined the influence of CG and ownership structure on EM, providing evidence that company directors, their children, spouses and other family members increase the level of discretionary accruals. This discovery is in line with previous results that point to the role of the dominant family in confiscating minority shareholders in Pakistan. In the context of REM, Razaque et al. (2016) found that family companies in Bangladesh engaged in REM more than non-family companies in 2006–11. They also provided evidence that REM is linked to lower future performance. Recently, Tai (2017) examined the trade-off between AEM and REM in family-controlled Taiwanese companies and presented supporting evidence that these companies were more prone to AEM than to REM.

The second view focuses on the alignment hypothesis, which says that family businesses have strong economic incentives to harmonise family interests with those of other investors and is therefore correlated with a decrease in EM (Demsetz & Lehn, 1985; Fama & Jensen, 1983; Wang, 2006). Family-controlled companies have usually invested a large part of their private wealth in the business, have undiversified investments and are involved in the company's long-term success; families are more worried about the sustainability and reputation of the business, resulting in a strong motivation to monitor management carefully (Anderson et al., 2003; Andres, 2008; Salvato & Moores, 2010). Accordingly, family members are less likely to expropriate other shareholder wealth by managing earnings according to the alignment effect.

In line with the incentive alignment effect, Ali et al. (2007), Wang (2006), and Boonlert-U-Thai and Sen (2019) reported that family business is linked to higher EQ. Similarly, Martin et al. (2016) suggested that family businesses in the USA are less likely than non-family businesses to manage their earnings. In Spain, Sánchez et al. (2007) found that EQ occurs more among companies owned by families than non-family ones. In particular, they indicated that family companies have higher predictability of future cash flows and lower discretionary accruals. They concluded that the extent of the controlling family's voting rights has a positive influence on EQ. Hashmi et al. (2018) confirmed that family-owned companies have better EQ than non-family controlled businesses in Pakistan. San Martin Reyna (2018) used firms listed on the Mexico stock market during 2005–15 as a sample, and produced empirical evidence showing that family firms mitigate EM, although the influence differs according to firm size. Achleitner et al. (2014), investigating the German stock market during 1998–2008, produced empirical evidence showing that family-owned companies are negatively correlated with REM and AEM. However, family companies have a lower tendency to indulge in REM, perhaps because they are less prone to gambling with the long-term prospects of their investments; they may instead engage in AEM practices that assist them to keep trans-generational control. Chen et al. (2015) in Japan discovered a lower prevalence of AEM and REM in family-owned companies, although they employed AEM more often than REM to maintain their reputation and financial stability and the company brand name, and they might conduct cosmetic EM to conceal bad news. Boonlert-U-Thai and Sen (2019) provide evidence that accrual quality and the earnings stability of founding-family firms are higher than those of non-family firms. A recent study in Malaysia by Ghaleb et al. (2020) finds that family firms, under different levels of concentration, are negatively and significantly associated with REM.

In the light of this discussion, and given the corporate landscape in Saudi Arabia where family businesses are common (Al-Dubai et al., 2012; Qobo & Soko, 2010), inadequate protection of investors may enable Saudi family businesses to expropriate the wealth of minority shareholders. Further, information asymmetry among family members and other shareholders incentivises controlling shareholders to manipulate earnings for personal benefit (Fan & Wong, 2002; Shleifer & Vishny, 1997). Therefore, this study postulates that family businesses practise earnings management through accruals management. According to Zang (2012) and Cohen and Zarowin (2010), REM has greater flexibility in terms of timing and less detection risk than AEM. Thus, REM is expected to be more widespread among family businesses in Saudi Arabia. Therefore, the research hypotheses are developed as follows:

**H1:** Family business in Saudi Arabia is significantly associated with accruals earnings management.

**H2:** Family business in Saudi Arabia is significantly associated with real earnings management.

### 3. Research design

#### 3.1. Sample selection and data

The sample was composed of all firms on the Saudi stock market from 2014 to 2018. For data homogeneity, the study follows past work by excluding financially related firms that are subject to various regulatory requirements (Al-Rassas & Kamardin, 2016; Baatour et al., 2017). Firms with missing financial information, insufficient data on their board directors or whose annual statements were not available were also excluded. Finally, to ensure accuracy in the estimation of the accruals model, again as in previous studies, industries having fewer than eight observations were excluded (Baatour et al., 2017; Cohen & Zarowin, 2010). Following the completion of these exceptions, the final sample for this research was limited to 106 firms from 2014 to 2018, in six industries. The data relating to family ownership and the BIG4 data were manually extracted from Saudi Arabia's annual reports and the corporate governance report of the Saudi Arabia Listed Stock Exchange (Tadawul) website [www.tadawul.com.sa](http://www.tadawul.com.sa). Data for other variables were downloaded from Thomson Reuters DataStream.

#### 3.2. Measuring earnings management

##### 3.2.1. Accruals earnings management

Following the trend in previous AEM research, this study used discretionary accruals (DA) as a proxy for AEM, as developed by Jones (1991) and modified by Dechow et al. (1995); this method is widely used in AEM studies (see for example, Abdul Rahman & Ali, 2006; Al-Jaifi, 2017; Al-Rassas & Kamardin, 2016; Klein, 2002; Teh et al., 2017):

$$\frac{ACC_t}{TA_{t-1}} = \beta_1 \left( \frac{1}{TA_{t-1}} \right) + \beta_2 \left( \frac{\Delta REV_t - \Delta REC_t}{TA_{t-1}} \right) + \beta_3 \left( \frac{PPE_t}{TA_{t-1}} \right) + \varepsilon_t \quad (1)$$

Where:

$ACC_t$  = Total accruals calculated by net income minus cash flows from operation

$TA_{t-1}$  = Previous total assets

$\Delta REV_t$  = Change in sales or revenue

$\Delta REC_t$  = Change in accounts receivable

$PPE_t$  = Property, plant, and equipment

$t$  = Represents the year

$\varepsilon_t$  = error term.

The Dechow model was run cross-sectionally to estimate non-discretionary and discretionary accruals based on the industry-year groups. The estimated residuals (RE\_ACC), capturing discretionary accruals, are our proxy for AEM.

##### 3.2.2. Real earnings management

This study is based on work which developed REM proxies. Following Cohen et al. (2008), Cohen and Zarowin (2010), and Roychowdhury (2006), REM intensity proxies focus on three ways to manipulate real activities: abnormal discretionary expenses (ADISEXP), abnormal levels of operating cash flows (ACFO) and abnormal production costs (APROD). The abnormal levels in these real activities are achieved by applying separate cross-sectional regression by industry and year:

$$\frac{CFO_t}{TA_{t-1}} = \beta_1 \left( \frac{1}{TA_{t-1}} \right) + \beta_2 \left( \frac{Sales_t}{TA_{t-1}} \right) + \beta_3 \left( \frac{\Delta Sales_t}{TA_{t-1}} \right) + \varepsilon_t \quad (4)$$

$$\frac{DISEXP_t}{TA_{t-1}} = \beta_1 \left( \frac{1}{TA_{t-1}} \right) + \beta_2 \left( \frac{Sales_{t-1}}{TA_{t-1}} \right) + \varepsilon_t \quad (5)$$

$$\frac{PROD_t}{TA_{t-1}} = \beta_1 \left( \frac{1}{TA_{t-1}} \right) + \beta_2 \left( \frac{Sales_{it}}{TA_{t-1}} \right) + \beta_3 \left( \frac{\Delta Sales_t}{TA_{t-1}} \right) + \beta_4 \left( \frac{\Delta Sales_{t-1}}{TA_{t-1}} \right) + \varepsilon_t \quad (6)$$

Where  $CFO_t$  is operating cash flow in period  $t$ .  $DISEXP_t$  is discretionary expenditure, defined as a sum of SG&A, R&D and advertising expenditure.  $PROD_t$  is the cost of production in period  $t$ , defined as the sum of cost of goods sold and the inventory changes.  $Sales_t$  is current sales,  $\Delta Sales_t$  is change in current sales,  $Sales_{t-1}$  is lagged sales,  $\Delta Sales_{t-1}$  is change in lagged sales and  $TA_{t-1}$  is lagged total assets. The above regressions produce the residuals of abnormal operating cash flow (ACFO), abnormal discretionary expenditure (ADISEX) and abnormal cost of production (APROD). To capture the effect of REM in a comprehensive measure through all these three variables, in this study we are using aggregate REM measures. We define a REM aggregate measure as a sum of standardised variables, ACFO, ADISEX and APROD, in line with Cohen et al. (2008) and Braam et al. (2015).

### 3.3. Regression model and variables definition

In the following regression equation, the proposed hypotheses between family businesses and earnings management (AEM and REM) are examined, with terms defined in Table 1:

$$EM = \beta_0 + \beta_1 FAMOWN + \beta_2 BIG4 + \beta_3 ROA + \beta_4 FSIZE + \beta_4 LEV + \beta_5 SGROWTH + e.$$

## 4. Empirical results

### 4.1. Descriptive analysis and correlations

Table 2 shows the descriptive statistics of the main variables, for family and non-family businesses. Over a third of the companies in the sample are family businesses (36.8%). The average share of family-owned common stock is about 8.9%. The average absolute accruals (AEM) of family businesses are 0.049 (median 0.044), and of non-family businesses 0.043 (median 0.052). This divergence is very significant and gives us an initial indicator that Saudi family-owned businesses have higher AEM levels than their non-family counterparts. In terms of total assets (FSIZE), family businesses tend to be slightly smaller than non-family firms, but with higher asset returns (ROA) and higher leverage ratio (LEV). They have lower sales growth (SGROWTH) than non-family businesses. In terms of the audit quality (BIG4), more family firms are audited by Big4 audit firms than non-family firms, suggesting that in recent years more non-family firms have started to depend on non-Big4 auditors in Saudi Arabia.

Table 3 shows the coefficients of Pearson's correlation between the variables, indicating that all are less than 0.70, which means that multicollinearity is not a problem (Gujarati & Porter, 2008). Family businesses (FB) are significantly positively correlated with AEM and REM, perhaps because they tend to engage in more than one type of EM. Table 3 also demonstrates that the independent variables have some important correlations. The highest correlation is 0.427 ( $p < 0.01$ ) between FSIZE and LEV, suggesting that bigger companies have higher debt levels. Also significant is the correlation between SIZE and BIG4 (0.411) which suggests that larger firms are audited by Big4 audit firms.

### 4.2. Estimation models

Before running the regression analysis, the study tested the fitness of the sample data using statistical assumptions. Data may be considered as normal when the standard skewness score does not exceed  $\pm 3.00$ . Kurtosis should be lower than  $\pm 10.00$  (Kline, 2015). All variables used in the



**Table 1. Variables definition/measurement**

Variables	Acronym	Definition
Accrual Earnings Management	AEM	Abnormal Discretionary Accruals Jones Model (Jones, 1991) and modified by Dechow et al. (1995)
Real Earnings Management	REM	Abnormal levels of real activities (ACOF, ADISEXP and APROD)
Family Business	FB	Percentage of outstanding shares held by family members on the board, fulfilling two requirements: (1) a company in which a person or a group is related by family ties by blood (i.e., share same surname), and (2) holding directly or indirectly at least 5% of the total number of outstanding common shares.
Audit quality	BIG4	Dummy variable that equals 1 if the auditor is a Big4 and 0 otherwise
Return on assets	ROA	Ratio of earnings before interest and tax (EBIT) to the total assets
Firm size	FSIZE	Natural logarithm of the firm's total assets
Firm leverage	LEV	Ratio of debt to assets
Sales growth	SGROW	Difference between the current year's sales and the preceding year's sales over the preceding year's sales

analysis have a normal distribution, expect AEM, REM, ROA and SGROW where they are winsorised at the 1st and 99th percentiles to mitigate the presence of outliers. Moreover, based on the correlation matrix and the Variance Inflation Factor (VIF) tests, there is no evidence of multicollinearity problems. However, the data suffer from heteroscedasticity, but not from autocorrelation. Thus, this study adopted the Feasible Generalised Least Squares (FGLS) estimator because it provides more accurate estimates when heteroscedasticity is present (Alonso et al., 2017; Qasem et al., 2020; Sakawa & Watanabel, 2018; Wooldridge, 2010). To determine the robustness of the results, pooled OLS regression, GLS random-effects regression and Panel-Corrected Standard Errors (PCSE) regression were used, giving somewhat weaker but largely similar results. Therefore, the results were in line with the different specifications. A statistical data check was performed using the STATA data analysis software.

#### **4.3. Family business and accruals earnings management**

The results reported in Table 4 for the *H1* test are from the feasible Generalized Least Square Regressions (FGLS), with AEM as the dependent variable; the robust model estimation results are also reported. The model is sufficiently robust and significant at 1% level, with (Prob. (F) = 0.000, Wald Chi-square = 38.80). The results show that in the AEM regression, the significant positive coefficient of 0.036 ( $t = 3.23$ ) on FB reveals that the presence of more family members on boards may significantly reduce the attempt to mitigate AEM. Therefore, *H1* is supported.

#### **4.4. Family business and real earnings management**

Table 5 presents the estimation results using REM as the dependent variable. The level of REM is high in family businesses since the FB coefficient is 1.027 with a  $t$ -value of 4.19, implying that family businesses have higher REM practices. Additionally, the FB coefficient is positive and significant, and we infer that family businesses also have low earnings quality. Overall, *H2* is

**Table 2. Descriptive statistics**

	Total sample (N = 530)						Family firms (N = 195)						Non-family firms (N = 335)					
	N	Mean	Median	St.Dev	N	St.Dev	N	Mean	Median	St.Dev	N	Mean	Median	St.Dev	N	Mean	Median	St.Dev
AEM	530	0.046	0.03	0.049	195	0.049	195	0.049	0.035	0.044	335	0.043	0.028	0.052	335	0.043	0.028	0.052
REM	530	0.000	-0.039	0.976	195	0.000	195	0.000	-0.033	0.759	335	0.000	-0.081	1.121	335	0.000	-0.081	1.121
FB	530	0.089	0	0.156	195	0.243	195	0.243	0.165	0.171	335	0	0	0	335	0	0	0
BIG4	530	0.468	0	0.499	195	0.523	195	0.523	1	0.501	335	0.436	0	0.497	335	0.436	0	0.497
ROA	530	5.06	4.5	11.312	195	6.892	195	6.892	6.22	7.622	335	3.994	3.64	12.877	335	3.994	3.64	12.877
FSIZE	530	14.765	14.575	1.586	195	14.583	195	14.583	14.414	0.908	335	14.871	14.734	1.864	335	14.871	14.734	1.864
LEV	530	22.679	21.36	18.426	195	24.043	195	24.043	24.45	14.503	335	21.886	16.69	20.343	335	21.886	16.69	20.343
SGROW	530	10.909	0.25	149.729	195	-0.204	195	-0.204	-0.61	16.746	335	17.378	0.46	187.698	335	17.378	0.46	187.698

**Table 3. Correlation matrix**

	AEM	REM	FF	BIG4	ROA	FSIZE	LEV	SGRW	VIF
AEM	1								
REM	0.1469***	1							
FB	0.1187***	0.1495***	1						1.09
BIG4	-0.0909**	0.0059	0.1757***	1					1.32
ROA	-0.0333	-0.2079***	0.1353***	0.2245***	1				1.29
FSIZE	-0.1857***	-0.0294	-0.0965	0.4108***	0.1280***	1			1.54
LEV	0.0169	0.0458	0.0167	0.2080***	-0.2676***	0.4265***	1		1.45
SGROW	0.002	0.0374	0.0129	0.0495	0.1681***	0.1155***	0.0775	1	1.05

Notes: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . AEM = absolute value of the discretionary accrual earnings management, REM = the real earnings management measured, FB = family business (percentage), BIG4 = a dummy variable equal to 1 if the firm's auditor from one of big four audit firms, zero otherwise, ROA = return on assets, FSIZE = natural log of total assets, LEV = ratio of total debt to total assets, and SGROW = difference between the current year's sales and the preceding year's sales over the preceding year's sales.

Table 4. Regression results using AEM

AEM	FGLS		OLS		GLS (Random effects)		PCSE	
	Coef.	t-value	Coef.	t-value	Coef.	t-value	Coef.	z
FB	0.036	3.23***	0.030	2.01**	0.030	1.72*	0.030	2.04**
BIG4	-0.002	-0.76	-0.005	-1.17	-0.007	-1.19	-0.005	-1.16
ROA	0.000	-0.08	0.000	0.33	0.000	0.80	0.000	0.39
FSIZE	-0.004	-3.76***	-0.006	-3.65***	-0.006	-2.77***	-0.006	-3.94***
LEV	0.000	1.87*	0.000	2.22**	0.000	2.42**	0.000	2.28**
SGROW	0.000	-0.11	0.000	0.39	0.000	0.77	0.000	0.35
Constant	0.088	5.94***	0.126	5.51***	0.127	4.00***	0.126	5.80***
	No of obs	530	R <sup>2</sup>	0.057	R <sup>2</sup>	0.119	R <sup>2</sup>	0.0573
	Wald chi <sup>2</sup> (6)	38.801	F (6, 523)	5.10	Wald chi <sup>2</sup> (6)	19.90	Wald chi <sup>2</sup> (6)	32.80
	Proba> chi <sup>2</sup>	0.000	Proba> F	0.000	Proba> chi <sup>2</sup>	0.0029	Proba> F	0.000

**Table 5. Regression results using REM**

REM	FGLS		OLS		GLS (Random effects)		PCSE	
	Coef.	t-value	Coef.	t-value	Coef.	t-value	Coef.	z
FB	1.027	4.19***	1.027	4.16***	0.893	2.47**	1.026	3.49***
BIG4	0.057	0.67	0.057	0.67	0.104	1.07	0.057	0.68
ROA	-0.029	-5.71***	-0.029	-5.67***	-0.022	-3.78***	-0.029	-4.14***
FSIZE	0.012	0.44	0.012	0.43	-0.006	-0.15	0.012	0.73
LEV	-0.002	-1.04	-0.002	-1.03	-0.001	-0.37	-0.002	-1.49
SGROW	0.003	1.88*	0.003	1.87*	0.003	2.11**	0.003	2.46**
Constant	-0.100	-0.26	-0.100	-0.25	0.095	0.17	-0.100	-0.47
	No of obs	530	R <sup>2</sup>	0.084	R <sup>2</sup>	0.160	R <sup>2</sup>	0.084
	Wald chi <sup>2</sup> (6)	48.31	F (6, 523)	7.95	Wald chi <sup>2</sup> (6)	22.14	Wald chi <sup>2</sup> (6)	51.63
	Proba> chi <sup>2</sup>	0.000	Proba> F	0.000	Proba> chi <sup>2</sup>	0.0011	Proba> F	0.000

confirmed. By analysing the control variables, we find that large companies are correlated with lower AEM, while high-growth firms are correlated with a high level of REM.

Collectively, the findings of the regression support the two hypotheses, that Saudi Arabia's family businesses are involved in AEM and REM. This finding is aligned with the hypothesis of entrenchment and previous empirical evidence from Asian countries: family-controlled businesses are correlated with higher earnings management. According to Fan and Wong (2002), the greater the families' insider control, the greater the incentive for families to confiscate minority interests and the higher the level of EM. However, this finding differs from that of Achleitner et al. (2014) in Germany; the disparity can mainly be attributed to environmental differences. The family firm literature also includes conflicting results with respect to earnings management. Family businesses in developed economies with an effective regulatory system show a lower level of management of earnings and therefore higher-quality earnings (Ali et al., 2007; Boonlert-U-Thai & Sen, 2019; Wang, 2006). The Asian evidence, in comparison, shows that family businesses correlate with lower earnings quality (Fan & Wong, 2002), higher discretionary accruals (Chi et al., 2015; Chin et al., 2006; Ishak et al., 2011; Teh et al., 2017) and higher real earnings management (Razzaque et al., 2016).

## 5. Conclusion

This research examines the relationship between family businesses and two types of earnings management practice: AEM and REM. To explain this relationship, we use agency theory. We expect family members to be less likely to participate in REM because of its negative consequences for future value; they will be more concerned about the effects of earnings management on their business. From the sample of 106 non-financial public listed companies in Saudi Arabia during the period 2014 to 2018 (yielding 530 firm-year observations), the results demonstrate that family businesses are more likely to participate in both forms of earnings management (AEM and REM). These results are consistent with the findings of Fan and Wong (2002) who documented that the quality of earnings is low in family businesses in Asia; this may be due to the entrenchment impact of family members, or to weak legal structures and inadequate corporate governance mechanisms in Saudi family businesses where demand for earnings quality is low. The implications of the current study may be considered by policymakers and regulators, that family-controlled firms are capable of manipulating earnings. Future research might look into whether financial reporting quality is dependent on specific characteristics of family businesses. Research could investigate, for example, whether and how board compensation impacts the quality of family business earnings, or whether and how the independence of boards of directors affects the earnings management level in family businesses. Because family businesses are important for the global economy, further research should address these concerns in order to better understand family business.

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### Author details

Adeeb Abdulwahab Alhebri<sup>1,2</sup>

Shaker Dahan Al-Duais<sup>1</sup>

E-mail: [shakeralduais@gmail.com](mailto:shakeralduais@gmail.com)

<sup>1</sup> Department of Business Administration, Community College-Muhayil, King Khalid University, Saudi Arabia..

<sup>2</sup> Accounting Department, Faculty of Administrative Sciences, Ibb University, Ibb, Yemen..

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