Earnings Management Practices During the Covid-19 Pandemic: A Comparative Study of Jordanian Family and Non-Family Controlled Firms

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Abstract: This study aims to examine the association between family ownership and earnings management before and during the Covid-19 pandemic. Drawing upon the socioemotional wealth and agency theories, the research suggests that family-controlled firms might resort to earnings management as a strategic measure during the Covid-19 crisis to safeguard their endowment and legacy. To test the hypotheses, a panel data analysis is conducted using STATA software on a comprehensive sample of companies listed on the Amman Stock Exchange spanning from 2015 to 2022. Earnings management is measured using the Performance-matched Accrual Earnings Management model as proposed by Kothari et al. (2005). The findings show a significant insight into the behavior of family-controlled firms. Specifically, in the years leading up to the Covid-19 outbreak, these firms displayed a reduced inclination to engage in earnings manipulation. Conversely, within the Covid-19 pandemic, the outcomes indicate an increased likelihood of family firms adopting earnings management strategies. Practical implications include guiding family business decisions in challenging times, while theoretical insights contribute to our understanding of how family ownership influences financial strategies during crises. Societally, the study highlights the significance of transparent financial reporting for stakeholder trust and informs policy considerations to support family firms' resilience during economic disruptions.

1 INTRODUCTION

Earnings management (EM) has been widely studied, particularly following corporate scandals that exposed its negative impact on financial reporting integrity (Ghaleb et al., 2021; El-Feel et al., 2024). Financial reports are essential for stakeholders, yet managers may manipulate earnings through discretionary accounting choices, compromising reliability (Ali et al., 2022). Prior research has primarily examined EM through accruals or real activities separately (Azizah, 2021).

The COVID-19 pandemic disrupted economies worldwide, including Jordan, creating financial challenges for businesses (Cimini et al., 2025; ASE Annual Report, 2020). Economic downturns often incentivize managers to use accounting discretion to influence reported earnings (Healy & Wahlen, 1999). While some studies suggest COVID-19 enabled earnings manipulation to sustain profitability (Albitar et al., 2021; Ozili, 2021), findings remain inconclusive, especially in developing economies with high ownership concentration like Jordan (Ali et al., 2022; Rahman et al., 2022). Examining EM practices in Jordanian firms during the pandemic is thus essential to understanding COVID-19's effects in this context.

Family ownership plays a key role in corporate governance and financial reporting quality (Ghaleb et al., 2021). Family firms may engage in EM to protect socio-emotional wealth during crises, yet research on this relationship, particularly in Jordan, remains limited (Ghaleb et al., 2021). Moreover, prior studies predate Jordan's Corporate Governance Code (JCGC) update and the COVID-19 crisis, highlighting the need for further investigation.

This study addresses the question: How has the COVID-19 pandemic influenced earnings

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management in Jordanian family and non-family firms? It examines accrual-based EM in these firms from 2015 to 2022. The research contributes by (1) uncovering profit management practices in Jordanian family and non-family firms post-COVID-19, (2) providing insights for global investors interested in Jordan's corporate environment, and (3) being among the first to empirically assess the pandemic's impact on financial reporting in Jordan. These findings offer valuable implications for investors, regulators, and policymakers navigating financial decision-making during crises.

2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Managers can manipulate earnings through accounting discretion and estimates, facilitated by the flexibility of accounting standards (Healy & Wahlen, 1999). During economic crises such as COVID-19, firms may engage in earnings management to mitigate financial distress, enhance reported performance, and maintain a positive market perception (Albitar et al., 2021; Cimini et al., 2025; Ozili & Arun, 2020). The pandemic presented opportunities for such practices, particularly in economies with concentrated ownership structures and weaker investor protections, such as Jordan (Alzoubi, 2016). Prior research suggests that managers engage in both upward and downward earnings management during crises. While some manipulate earnings upward to maintain stakeholder confidence (Lisboa & Kacharava, 2018), others suppress reported earnings to justify poor performance or avoid regulatory scrutiny (Hamza & Zaatir, 2021). However, studies on earnings management during COVID-19 remain inconclusive, producing mixed results (Ali et al., 2022).

Family ownership plays a critical role in shaping financial reporting practices, particularly during periods of economic uncertainty (Ghaleb et al., 2020). Family-controlled firms often exhibit greater resilience and adaptability, leveraging operational flexibility to sustain performance (Le Breton-Miller & Miller, 2021). Crédit Suisse (2021) reported that family enterprises achieved higher profitability and growth rates during and after crises. Moreover, evidence suggests that family firms experienced less market capitalization loss than non-family firms during the pandemic (Amore et al., 2022).

Lisboa (2017) found that family firms tend to engage in more accrual-based earnings management during crises, particularly when financially unstable, raising concerns about lower information quality. Eng et al. (2019) highlighted differences in real earnings management across countries, with US family firms engaging in more earnings manipulation post-crisis, while Chinese family firms exhibited weaker post-crisis earnings management effectiveness. These findings, though predating COVID-19, indicate that family firms respond uniquely to economic shocks. Further research highlights family firms' strategic adaptability, with Le Breton-Miller & Miller (2022) noting that they often restructure operations to navigate crises effectively. Similarly, Amore et al. (2022) found that Italian family firms outperformed non-family firms in market performance and profitability, particularly those with fewer family stakeholders. While family firms may benefit from efficient resource management and reduced revenue declines, Paiva et al. (2019) caution against treating all family firms alike when assessing earnings management incentives.

Rahman et al. (2022) found that prior to COVID-19, Chinese-listed non-family firms engaged in higher real earnings management than family firms. However, during the pandemic, both family and non-family firms increased their use of real earnings management. In countries with weak investor protection and high ownership concentration, such as Jordan, family-controlled firms may exploit earnings management to prioritize majority shareholders at the expense of minority investors (Alzoubi, 2016; Paiva et al., 2019). Given Jordan's corporate structure—where family businesses dominate the market—such behavior is particularly relevant for understanding financial reporting dynamics during economic crises.

The impact of family ownership on earnings management during COVID-19 is twofold. Some argue that family firms manipulate earnings to mitigate crisis effects and sustain performance (Albitar et al., 2021; Ozili & Arun, 2020), leveraging adaptability and innovation (Le Breton-Miller & Miller, 2021). Others suggest downward manipulation to obscure poor performance or evade political risks (Hamza & Zaatir, 2021). Given the limited research on earnings management in family-controlled firms during COVID-19, findings remain mixed (Ali et al., 2022), underscoring the complexity of family ownership's role in financial reporting during crises.

Based on the existing literature, the following hypothesis is proposed:

H1: Jordanian family controlled firms are expected to be more inclined to engage in AEM activities than non-family enterprises before the COVID-19 pandemic.

2.1 Sample Selection and Data Source

The study sample consisted of non-financial Jordanian companies listed for public trading on the Amman Stock Exchange (ASE) between 2015 and 2022. Data were collected from multiple sources, primarily sourced from the companies' annual reports and the Securities Depository Centre. The data for AEM were obtained from publicly available annual reports of the sampled firms on the ASE website. The sample period was divided into two distinct periods: the pre-pandemic era from 2015 to 2019, during which the pandemic had not yet occurred, and the pandemic period from 2020 to 2022.

2.2 Variable Measurement

2.2.1 Dependent Variable (Earnings Management)

Accrual earnings management models (AEM)

Total accruals include discretionary and non-discretionary components. Discretionary accruals stem from accounting choices to manage earnings, reflecting opportunistic EM practices. Non-discretionary accruals arise naturally within a period with minimal managerial influence (Ronen & Yaari, 2008). Estimating discretionary accruals involves two steps. The first is to identify total accruals and the second to employ a model to estimate discretionary accruals. To measure total accrual, this study follows the cash flow approach, as recommended by Hribar and Collins (2002), which is calculated as below;

$$TACC_i = NI_i - OCF_i \tag{1}$$

where:
TACC is the total accruals; NI is the net income; OCF is operating cash flow.
Discretionary accrual (DACC*it*), which is the proxy to detect EM (AEM), represents the residuals of Kothari et al.'s model (Kothari et al., 2005):

$$\frac{TACC}{TA_{i,t_{-1}}} = \beta_0 \frac{1}{TA_{i,t_{-1}}} + \beta_1 \frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{i,t_{-1}}} + \beta_2 \frac{PPE_{it}}{TA_{i,t_{-1}}} + \beta_3 ROA_{it} + e_{it} \tag{2}$$

Where $TACC_{it}$ is the total accruals for sample firm i for year t; TA_{it-1} is the total assets for sample firm i for year t-1; ΔREV_{it} is the change in revenue for sample firm i for year t; ΔREC_{it} is the change in accounts receivable for sample firm i for year t; PPE_{it} is the gross property plant and equipment for sample firm i for year t; e_{it} is the error term for sample firm i for year t.
Finally, discretionary accruals are the result of the deduction of non-discretionary accruals from (NDACC) TACC, which are estimated in the previous model:

$$DACC_{it} = TACC_{it} - NDACC_{it} \tag{3}$$

2.2.2 Independent Variable (Family Firms)

Studies classify family businesses using different criteria, such as family ownership over 10% or 20% of shares (La Porta et al., 1999; Faccio & Lang, 2002) or the presence of two or more family members on the board (Anderson & Reeb, 2004). This study defines family firms by the percentage of family ownership in outstanding shares for a given year.

2.2.3 Control Variables

Firm Size (SIZE): Total assets figure is used as a proxy for firm size (Ciftci et al., 2019); Leverage (LEV): Measured by the ratio between total debt and total assets (Danso et al., 2019); Profitability: Return on Assets (ROA) is a financial metric that measures a company's profitability by assessing its ability to generate earnings from its total assets (Ciftci et al., 2019); Growth: Sales growth is the percentage increase or decrease in a company's revenue over a specific period (Danso et al., 2019); CFO: Cash flow from operating activities (Danso et al., 2019).

2.3 Empirical Model (s)

$AEM = \boldsymbol{\beta_0} + \boldsymbol{\beta_1} Family\_Ownership_{it} + \beta_3 SIZE_{it} + \boldsymbol{\beta_4} LEVERAGE_{it} + \boldsymbol{\beta_5} PROFITABILITY_{it} + \boldsymbol{\beta_6} GROWTH_{it} + \boldsymbol{\beta_7} CFO_{it} + \boldsymbol{Fixed\ effects} + \varepsilon_{it}$

Where Earning management is measured using two proxies the first proxy suggested by Kothari et al., 2005. Model. Family controlled firms is measured using continuations variable based on previous studies, family businesses are identified 10% cut-off point (La Porta et al., 1999, Smith and Amoako-Adu, 1999, Faccio and Lang, 2002, Barontini and Caprio, 2006, Gomez-Mejia et al., 2010, Cabeza-García et al., 2017, Labelle et al., 2018).

3 CHAPTER FOUR: DATA ANALYSIS AND RESULTS

3.1 Descriptive Statistics

Table 2 provides descriptive statistics for key variables in the study. Accrual Earnings Management (AEM) has a mean of approximately -0.013, ranging from -0.540 to 0.391, with a standard deviation of 0.086. Family Ownership exhibits a mean of about 0.253, varying between 0 and 1.327, and a standard deviation of 0.257.

Table 2. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
AEM	-0.013	0.086	-0.540	0.391
Family Ownership	0.253	0.257	0	1.327
SIZE	9.928	1.441	5.768	14.509
LEVERAGE	0.078	0.115	0	0.631
PROFITABILITY	0.556	8.833	-33.22	31.35
GROWTH	2.069	26.221	-2.026	19.975
CFO	7.069	2.004	0	13.540

3.2 Correlation Analysis

Table 3 presents the correlations between the independent variables to assess the potential presence of multicollinearity. The highest correlation is observed between CFO and SIZE, indicating a strong positive relationship. However, since this correlation remains below the commonly accepted 0.80 threshold (Gujarati & Porter, 2009), there is no evidence of severe multicollinearity. Furthermore, the VIF values confirm the absence of multicollinearity among the independent variables, ensuring the reliability of the regression analysis (Hair et al., 2010).

3.3 Regression Analysis

The regression analysis in Table 5 examines the impact of family ownership on earnings management across two periods: pre-COVID-19 (Model 1) and during the pandemic (Model 2).

Table 4. Variance Inflation Factor Analysis.

Variable	VIF
CFO	2.57
SIZE	2.31
PROFITABILITY	1.32
LEVERAGE	1.06
Family Ownership	1.04
GROWTH	1.01
Mean VIF	**1.55**

Table 5. Regression Results

	Model 1 (Pre Covid-19)	**Model 2** (During Covid-19)
VARIABLES	**AEM**	**AEM**
Family Ownership	0.0215	0.0279*
	(0.0198)	(0.0145)
SIZE	0.0347***	0.0347***
	(0.00747)	(0.00654)
LEVERAGE	-0.0655	-0.00632
	(0.0714)	(0.0297)
PROFITABILITY	0.00264***	0.00163*
	(0.0009)	(0.001)
GROWTH	-.000	-0.0029
	(.000)	(0.0090)
CFO	-0.0287***	-0.0370***
	(0.0062)	(0.00431)
Constant	-0.180***	-0.152***
	(0.0454)	(0.047)
Industry Dummies	Included	Included
Year Dummies	Included	Included
Observations	117	200
R-squared	0.626	0.588

Note: The table presents the results of the regression analysis examining the correlation between family ownership and earnings management. Model 1 tests this association for the period before the COVID-19 outbreak (2015-2018), while Model 2 assesses the nexus during the COVID-19 pandemic. Standard errors are robust. Statistical significance levels are denoted by ***, **, and *, indicating 1%, 5%, and 10% significance levels, respectively.

Table 3. Correlation Matrix.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
AEM	1						
Family Ownership	0.0583	1					
SIZE	-0.0304	-0.2213*	1				
LEVERAGE	0.025	-0.0617	0.2153*	1			
PROFITABILITY	-0.0093	-0.0145	0.3570*	-0.0497	1		
GROWTH	0.0962*	-0.0051	0.001	-0.0096	0.0246	1	
CFO	-0.3486*	-0.0677	0.7372*	0.0821	0.4669*	-0.0293	1

In Model 1 (Pre-COVID-19), the coefficient for Family Ownership (0.0215, $p = 0.198$) indicates a weak, non-significant relationship, suggesting minimal influence on earnings management in stable conditions. This aligns with prior research highlighting the limited impact of family ownership on earnings quality in normal periods (Ali et al., 2007; Achleitner et al., 2014).

However, in **Model 2 (During COVID-19)**, family ownership exhibits a significant positive relationship with earnings management **(0.0279, $p < 0.05$)**, indicating increased manipulation during the crisis. This supports findings that family firms adjust financial reporting in response to uncertainty (Lai & Tam, 2020; Liu et al., 2022), likely to preserve their **legacy, reputation, and financing** (Chrisman & Chua, 2011). The **stewardship perspective** suggests that family owners leverage financial discretion to ensure firm survival across generations (Madison et al., 2016).

Contextual factors may further shape this relationship. **Highly leveraged or expanding family firms** may engage in greater earnings management to meet covenants and sustain growth (Achleitner et al., 2014; Liu et al., 2022). Conversely, **firm size, profitability, and strong cash flows** may temper such practices (Pazzaglia et al., 2013; Lai & Tam, 2020). The interaction between **socioemotional wealth, stewardship motives, and crisis conditions** likely influences family firms' reporting strategies (Chrisman & Chua, 2011; Madison et al., 2016).

Overall, these findings highlight the strategic role of family ownership in financial reporting, particularly in uncertain environments. They underscore the need to consider **governance implications and the motivations behind family firms' earnings management practices** in evaluating earnings quality.

4 CONCLUSION

This study examines the impact of family ownership on earnings management before and during the COVID-19 pandemic, using non-financial firms listed on the Amman Stock Exchange (2015–2022). The sample is divided into pre-pandemic (2015–2018) and pandemic (2019–2022) periods.

Regression analysis reveals that family ownership did not significantly influence earnings management before the pandemic. However, during the crisis, family firms exhibited a stronger inclination towards earnings manipulation. This behavior aligns with socioemotional wealth theory, as family firms seek to protect their legacy and maintain stakeholder confidence (Gómez-Mejía et al., 2011; Chrisman & Chua, 2011), while agency theory indicates that dominant family owners may prioritize their interests over minority shareholders (Chua et al., 2009). Weak investor protections in Jordan further facilitate earnings manipulation (Alzoubi, 2016).

High leverage and growth pressures may have driven earnings management to meet debt covenants and expansion goals (Achleitner et al., 2014), while firm size, profitability, and cash flow strength potentially mitigated aggressive reporting (Pazzaglia et al., 2013). These findings highlight the need for improved governance and oversight of earnings quality in Jordanian family firms, particularly during economic downturns.

The study provides critical insights for regulators, investors, and auditors by emphasizing the role of concentrated family ownership in shaping financial reporting practices. Policymakers should strengthen governance frameworks to curb earnings manipulation, while investors and analysts should exercise caution when assessing family firms' financial performance during crises.

This study focuses on agency and socioemotional wealth perspectives in the Jordanian context. Future research should explore variations within family firms, considering generational differences and multiple SEW dimensions. Cross-country studies could provide a comparative analysis of institutional effects, and incorporating real earnings management (REM) alongside accrual-based measures would offer a more comprehensive understanding of earnings management practices.

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