

Aburishah, Khaled Erieh; Dahiyat, Ahmad Abdelrahim; Owais, Walid Omar

**Article**

## Impact of cash flow on earnings management in Jordan

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\*Corresponding author: Khaled Erieh Aburishesh, Department of Accounting and Accounting Information System, Amman University College, Al-Balqa Applied University  
E-mail: [Aburishesh@bau.edu.jo](mailto:Aburishesh@bau.edu.jo)

Reviewing editor:  
Collins G. Ntim, Accounting,  
University of Southampton,  
Southampton, United Kingdom

Additional information is available at  
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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Impact of cash flow on earnings management in Jordan

Khaled Erieh Aburishesh<sup>1\*</sup>, Ahmad Abdelrahim Dahiyat<sup>1</sup> and Walid Omar Owais<sup>1</sup>

**Abstract:** This article aimed to examine what do operate cash flow and free cash flow are to reveal the effect on earnings management? Evidence: industrial companies listed on the Amman stock exchange during the period from 2011 to 2020. Several control variables were used to examine the relationships. The survey method adopted was employed in the choosing of a sample of 56 industrial firms. The information has been extracted from the available financial reports through the use of panel data regression. The findings from the study showed that, as independent factors, free cash flow, operating cash flow, and control variables including managerial ownership and financial leverage have an impact on earnings management. However, firm size as the control variable has no impact on earnings management.

**Subjects:** Accounting; Financial Accounting; Financial Management

**Keywords:** free cash flow; operating cash flow; managerial ownership; financial leverage; firm size; earnings management

### 1. Introduction

The financial report can be considered the primary instrument that executives use within a business for demonstrating performance in the accomplishment of goals and for the conducting of accountable duties including earnings management (Laily, 2017). Financial reports become a medium through which companies can communicate their financing founded upon the accountability of top management in meeting needs from expectations of external entities, i.e., acquisition of information regarding the performance of the company. Earnings, as shown within the income statement, are a kind of financial statement metric that is employed in estimating the success of management (Taipaleenmäki & Ikäheimo, 2013). Earnings data, then, are a metric employed in assessing the responsibility of a manager in the attainment of operational goals and the support of business owners in the projection of the potential earnings ability of the firm. Nowadays, earnings have become a barometer for the modification of management due to their opportunity activity for the achievement of maximum fulfillment (Vukšić et al., 2013). This opportunistic activity is undertaken through a selection of a particular accounting strategy in order to control, boost or diminish earnings as required.

The term “earnings management” is in reference to the actions of executives in the management of earnings based on their interests and requirements (Sohn, 2016). Earnings management has been described as a choice of accountancy strategy for increasing or lowering the earnings that executives state in order to fulfill the goal of the firm. Earnings management can be achieved through the regulation of true accruals or accruals with no direct impact on cash flow. Prepayments of earnings management are elements of accrual for executives. Accruals can result

from management strategies (Badertscher, 2011; Zang, 2012; Sáenz and García-Meca, 2014). There are numerous examples of practices of earnings management, such as those of World Com, Enron, Merck, and a majority of corporations in the US (Muda et al., 2018). The purpose of this company has similarities with other companies, i.e., it aims at the maximization of profits (Levillain & Segrestin, 2019). Jordan can be considered an excellent type of case study for the investigation of earnings management efficacy, operational cash flow, and free cash flow since urgent concerns have been shown regarding an improvement to corporate governance pillars in order to boost earnings. Moreover, unlike numerous other wealthy nations, economic power is concentrated significantly in Jordan. There is a heavy reliance in Jordan on foreign finance because its financial market is limited. So, the narrow market and lower liquidity result in foreign investors being exposed to greater risk. Due to geographic isolation, the likelihood of information being asymmetric is significant, along with the increased expenses of agencies for investments. Finally, larger Jordanian management-ownership corporations let the management recalibrate the decisions of managers and exclude minority investors.

Free cash flow is a factor that is expected to impact earnings management. The “free cash flow” term is in reference to cash flow that is paid out in the form of dividends to all of the shareholders once the firm has managed to meet its commitments and then invested (Afiezan et al., 2020). Potential conflict of interest amongst management (agent) and investors (primary) can frequently result from free cash flow. Since it leads to increased motivation, executives wish to reinvest free cash flow hailing from income initiatives. Investors, however, often have the expectation of receiving a portion from free cash flow. The assumption contradiction leads to executives and investors having conflicts of interest (Borghesi et al., 2014). Managers that have an even greater focus upon their interests will tend to disregard the interests of stakeholders. In order to conceal such disregard for interested party welfare, cash flows would be dedicated by managers to the expansion of the earnings of financial statements (Tashman & Raelin, 2013); that perspective is consistent with research findings in the work of Setiany (2021), Toumeh et al. (2020), Astami et al. (2017), and Nekhili et al. (2016). A link of irregular accruals to increased earnings through free cash flow was revealed. As such, the greater the levels of free cash flow, then the greater are the earnings management quantities that are mostly specified by a director since such firms have greater issues with agency and vice versa.

Another factor expected to influence earnings is earnings management. A better picture related to the capacity of a company to generate sufficient cash flow for paying down debt, asset purchases and stock can potentially be provided by operating cash flow (Rusmin et al., 2014). Crucial information is provided by that operating cash flow with regard to the spending and revenue of a company during a specified period (Gupta et al., 2014). The cash flow amount that is created through operating activities serves as a measure of whether the operational activities of a company are able to generate sufficient money for its obligations to be paid, operations continued, profit to be returned and reinvestments made with reliance upon outside investment. Investors would use operating income data for analyzing the health of a company (Kisman & Krisandi, 2019).

This study examines the influence of operating cash flows and free cash flows on earnings management by determining whether or not operating cash flows and free cash flows exaggerate earnings management. A lack of appropriate research on the link between earnings management, operating cash flow, and free cash flows, as well as an increase in the number of listed enterprises in the Jordanian capital market, have motivated this study. This work adds to the literature in the following ways. For starters, the findings of the study can help to strengthen the theoretical foundations of prior studies on profit management and cash flow management in developing nations. Second, there is some evidence indicating a link between earnings management and OCF and FCF. As a scientific discovery, this problem can give helpful information to Jordan’s capital market regulatory oversight body. Third, the findings of this work can be used to generate new ideas for future research in OCF, FCF, and earnings management. As a result, the primary goal of this study is to determine how OCF and FCF

affect earnings management. Furthermore, the major purpose is to give OCF and FCF determinants for industrial enterprises' analysts, investors, creditors, managers, and other consumers of financial information, accounting regulators, and stock exchange organization organizations.

To illustrate its role in identifying earnings management operations in Jordan, this study is an extension to expand and enhance the career path of an accountant, as well as build stronger its contribution to improving the quality of financial statements via analysis of OCF and FCF measures, that also appears to work to evaluate the occurrence of earning management and to prevent financial implodes in the Jordanian industrial sector corporate environment. In addition to those primary variables, several other parameters are covered in this study as control variables for investigating their impact upon earnings management. The analysis includes those control variables because previous research has shown they impact upon earnings management. The control variables of the study were FS, FL and MO, to accord with the work of Toumeh et al. (2020) and Hastuti et al. (2018). As such, this study has the purpose of looking at what operating cash flow and free cash flow reveal the effect on earnings management. Evidence: industrial companies listed on the ASE. This document, then, has the following structure. Theoretical groundwork is laid down in Section 2 in relation to the variable connection, with a description of the investigation model described within Section 3. Section 4 introduces the design of the study, and Section 5 has an examination of the data through the use of a descriptive-analytical type of approach for the validation of hypotheses and the drawing of conclusions. The findings are explored within Section 6 with the potential practical and theoretical implications put forward and the shortcomings of the study acknowledged.

## **2. The review of literature review and the development of the hypotheses**

First of all, earnings management refers to the set of accounting procedures used by managers to reduce or enhance their reported earnings in order to achieve their goals. Management may lower earnings when profits are abnormally high and increase earnings when profits are unusually low. According to the company's compensation theory, managers can raise their pay by choosing cash flows. As a result, when net income affects their remuneration, managers will want to increase net income. When a corporation encounters government pressure, managers have an incentive to control earnings in order to reduce net income, according to the political cost theory (Ferentinou & Anagnostopoulou, 2016).

According to Banimahd and Aliabadi (2013), the simultaneous use of cash flows and earnings was even more valuable to market players in interpreting earnings and stock valuation. They proposed that when cash flows are valuable in evaluating net income and measuring business performance, analysts are more inclined to estimate them. Gras-Gil et al. (2016) investigated the association between Korean industrial enterprises' operating performance and earnings management. They discovered that Korean manufacturing enterprises control their revenue. Their findings revealed that when operating performance was poor, company managers had an incentive to choose forms that increased profitability.

Likewise, according to Palepu et al. (2020), financial position disclosure of cash flows from operations makes it difficult for investors to judge a firm's future performance since it does not reveal particular components of these cash flows. His findings indicate that exceptional individual cash flow components have a large additive forecasting power for cash flows. He also stated that existing disclosure of cash flows from operations may mislead investors about a company's ability to generate cash, and he advocated that investors benefit from a clearer picture of operating cash flows. Rakshit and Paul (2020) researched cash flow management in Chinese enterprises and compared their findings to those of select US firms, concluding that there was a favorable association between cash flow and earnings management. He demonstrated that cash flow management habits were more frequent in China than in the United States. However, cash flow management based on analyst cash flow estimates was not as common as in the US marketplace.

Osisioma et al. (2020) consider operating cash flow a complete vindication in the measurement of the financial success of a firm for shareholders, debtors, analysts and various other stakeholders. Operating cash flow and income may be seen as being indicators for productivity and management efficiency within the administering of the resources of the firms since firm success can be considered an expression of the performance of management (Banimahd and Aliabadi, 2013). The assessment of the ability of a company to create sufficient operating cash flow for paying its debt, equity or the purchasing of assets can be done through use of operating cash flow (Andreas, 2017).

The creation of a report of operational cash flow has the purpose of providing relevant information with regard to the spending and income of a company during a particular period. That operating cash flow can be interpreted as a sign for evaluation regardless of whether company activities are able to generate the cash that may be employed in repaying loans, maintaining activities, making dividends and inventing separate incentives for investment without reliance upon an external funding source; in addition, shareholders use it as a sign of the situation and efficiency of a firm (Wang et al., 2018).

There has been use of operating cash flow in the evaluation of the productivity of a firm, with low results being indicated by insufficient levels of operating cash flow (Andreas, 2017). Osisioma et al. (2020) consider that a difficult aspect of business performance is the anticipation of operational cash flow. Operational cash flow and profits can signify the success of a company in accordance with research conclusions drawn in the work of Boujelben et al. (2020). Based upon previous principles, a management approach is adopted by the management within the income statement with efforts made in regulating operational cash flow for concealment of the poor performance of the firm whilst demonstrating its high performance. This deception has the purpose of disclosing low levels of operational cash flow, thereby indicating the performance of the firm is good so that more financial institutions are attracted that would have concern for financial performance.

Masoumi and Tirkolaei (2014) consider that businesses that have low levels of operational cash flow have greater likeliness of accruing as management will then commence discretionary accruals through the raising of earnings. The study findings put forward in the work of Banimahd and Aliabadi (2013) show that enterprises that have poor levels of operational cash flow have been alleged as having committed accruals. This view has consistency with findings in the work of Jang and Kim (2017) and Andreas (2017) that revealed earnings management was harmed by operational cash flow, with the implication that the lower the operational cash flow, then the greater is the likeliness that financials will be committed by management through increasing profits and vice versa.

*H1: Operating cash flow impacts upon earnings management for industrial firms listed upon the Amman stock exchange.*

On the other hand, Webster (2016) identified free cash flow as that of the cash flow from business operations that exceeds the cash flow required for investment in enterprises with a favorable net present value (NPV) when discounting the applicable capital costs. Other definitions describe free cash flow as well. FCF is defined by Bhandari and Adams (2017) as operating margin before degradation but after tax and dividend payouts. According to Oded (2020), FCF is the cash flow from operations plus the cash flow from capital assets. In other words, FCF refers to assets that are accessible for management to deploy but might otherwise be allocated to shareholders.

One of the most difficult agency challenges, according to Chien et al. (2020), is the distribution of free cash flow. Conflicts of interest between shareholders and managers over dividend distribution policies, according to Abughniem et al. (2020), are more severe when the firm generates big free cash flows. This is represented in the issue of motivating managers to raise dividends rather than making investments with returns below the cost of capital or losing funds via inefficiency. According to

Bhundia (2012), the operating cash flow provided demonstrates the firm's ability to create resources. He goes on to say that the operating cash flow should not only be utilized to acquire new assets to allow the firm to sustain its existing level of activity; a portion of it should also be paid as dividends. This condition of competing uses creates a conflict of interest between shareholders and management.

Conflicts of interest are more likely when there is a surplus FCF accessible, according to Jensen (1986). Managers may guarantee that future cash flows will be utilized to boost dividends. However, such assurances are flimsy since nothing exists to prohibit further dividend cuts. On the contrary, such dividend cutbacks are penalized by the capital market with significant stock price declines, which is one of the agency's problems with free cash flow. This is especially true for companies with poor dividend perspectives (low growth projections) since their ability to earn future dividends is limited. According to Allam (2018), one of the most common agency concerns is the coupling of FCF with limited investment prospects since managers might incur expenditures that lower the value of the owners.

On the other part, Jensen (1986) described this FCF expenditure on projects with negative NPV as the agency costs of FCF. Firms with low growth prospects, he claims, are more prone to invest their FCF in unproductive ventures. In the absence of strong shareholder oversight or disciplinary procedures, certain managers may choose to invest in initiatives with a negative net present value. According to Allam (2018), managers utilize accounting rules to improve the reported results to mask the consequences of investments that do not optimize earnings. This opportunistic conduct will be curtailed by effective shareholder oversight. The authors examined whether businesses with limited growth prospects and large FCF had incentives to "increase" profitability by manipulating discretionary accruals to explore the degree of this managerial discretion. There have been several studies that have used total accruals as a measure for earnings management.

When there is no longer a need for cash for asset development or capital, the free cash flow of a company may be given to investors or creditors (Toumeh et al., 2020). Astami et al. (2017) recommend that free cash flow that shareholders may find beneficial ought to be paid as preferred stock or payment. Whereas stakeholders might be helped by free cash flow, conflict of interest may frequently be caused between interested parties and the management as the manager has a preference for utilizing funds in a manner that are personally favorable. There is a requirement for strong internal controls within the organization so that free cash flow use can be monitored so that agency costs can be avoided, i.e., expenditures that investors have incurred in monitoring management.

Otherwise, Setiany (2021) notes that when supervision is poor, executives are encouraged to extend corporation scope despite it not providing return for the firm. Whilst there ought to be distribution of cash to investors in the form of a dividend, free cash flow would be used by opportunistic management for those kinds of operations in order for self-profit to be achieved (Alves, 2021). Firms listed upon the stock exchange of Indonesia were researched in the work of Fakhroni et al. (2018). The data show that a substantial association exists between earnings management and free cash flow. Corporations with plentiful free cash flow possess lots of financial progress. Within that environment, any changes to free cash flow directly impacted upon earnings management. Findings that are similar are shown within the studies undertaken by Padmini and Ratnadi (2021), Abubakar et al. (2021) and Alves (2021). The suggestion is that a higher free cash flow for a corporation, then the CEO has achieved financial progress and vice versa.

In other findings, according to Oded (2020), one of the consequences of high FCF is the formation of agency conflicts. According to Chien et al. (2020), FCF is utilized for investment, debt repayment, and repurchasing firm shares, and the management uses FCF for personal benefit. According to Bhundia (2012), FCF had a favorable influence on earnings management.

*H2: Free cash flow impacts upon earnings management for industrial firms listed upon the Amman stock exchange.*

### 3. Research method

This study's major control variables are operating cash flow and free cash flow, with control variables such as financial leverage, management ownership, and company size. The variables are analyzed to test the stated hypotheses. The population of this study comprises industrial firms that have been continuously listed on the Amman Stock Exchange from 2011 to 2020. The test results were chosen using a purposive sampling method based on criteria created by the writer, namely that the corporations were listed on the Amman Stock Exchange and were required to submit their total financial statements, and that the firms did not even have no cash flow. The number of tests decreased to 56 once the criteria were applied.

In other words, scientific research studies strive to generalize the outcomes of the topic under investigation to a set of terminology and elements that comprise society, and so the study community is harmed by the industrial businesses registered on the Amman Stock Exchange, which number 56 and are the source (report of the ASE for the year 2021). To choose the research sample, all Jordanian industrial businesses were exposed to a complete survey, which provided all of the required data to assess the variables of the present study from (2011–2020). The industrial business sector was chosen due to its economic standing and as a critical supporting pillar to facilitate the growth of other sectors. Jordanian industrial businesses are among the most famous and successful sectors of the Jordanian economy. Despite Jordan's economic woes, the efficacy of this reduction has been demonstrated over time.

The panel data regression analysis approach was applied in this investigation. According to Zulfikar and STp (2018), there are three approaches for estimating regression models in panel data: pooling least squares (common effect), fixed effect, and random effect. To determine the optimum strategy in panel data regression analysis, certain tests may be run. Pearson's chi-squared test and its variants are statistical hypothesis tests that may be used when the test statistic is chi-squared distributed under the null hypothesis. The second test is the linear regression analysis test, which allows you to pick between unpredictable and regular effects.

The following formula for regression analysis, which consists of both pass and time information, is as follows and shown in Table 1:

$$DPS_{it} = \alpha + \beta_1 FFC_{it} + \beta_2 OCF_{it} + \beta_3 MO_{it} + \beta_4 FL_{it} + \beta_5 FS_{it} + \epsilon_{it}$$

### 4. Results and discussion

In this study, the independent variables are operating cash and flow-free cash flow. The dependent variable in this study is earnings management. Descriptive statistics are used in studies to provide information on variables such as the average (mean), minimum, maximum, and standard deviation for each variable proxy. This study's descriptive data is presented in the table below.

Table 2 shows that the mean firm size is 3.8850 with the standard deviation of (.18344) indicating the minimum of (3.45) and a maximum of (4.11). For the operational cash flow of the 10 years among industrial companies, it is shown that the mean is (.3050) with a standard deviation of (.12466). It is also shown that the minimum is (.12) and the maximum is (.57). The mean of managerial ownership is (.0660) with the standard deviation of (.00516) indicating the minimum as (.09) and the maximum as (.07). Regarding the free cash flow, it is demonstrated that the mean is (.2590) with the standard deviation of (.12749) and the minimum is (.06) and the maximum is (.54). This table also presents that the financial leverage is with the mean of (.3723) and standard deviation of (.04926), it also presents the minimum is (.31) and the maximum is (.47). The earnings management was also illustrated as follows: the mean is (.1760) with the standard deviation of (.05604) illustrating the minimum to be (.11) and the maximum to be (.30).



**Table 1. The model equation for the study variables**

Acronyms	Target
EMit	Earnings management of the firm
$\alpha$	Regression coefficient
FCFit	Free cash flow of the firm
OCFit	Operating cash flow of the firm
MOit	Managerial ownership of the firm
FLit	Leverage of the firm
FSit	The size of the firm
ti	Industrial
t	Time
e	The influence of other variable or residual.

**Table 2. The analysis of descriptive statistics for the study variables**

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Firm size	10	3.45	4.11	3.8850	.18344
Operational cash flow	10	.12	.57	.3050	.12466
Managerial ownership	10	.06	.07	.0660	.00516
Free cash flow	10	.06	.54	.2590	.12749
Financial leverage	10	.31	.47	.3723	.04926
Earnings management	10	.11	.30	.1760	.05604
Valid N (listwise)	10				

Pearson's chi-squared test and variations are statistical hypothesis tests that are legitimate to execute when the test statistic is chi-squared distributed under the null hypothesis. Table 3 shows the test's results indicating the absence of the problem of heterogeneity of the error that might be included in the residual data based on the value of  $\chi^2$  when testing the null hypothesis, as it reached the minimum value of variables (.231) with statistical significance at the level (0.999) indicating that there is no statistical distribution at (.05).

Table 4 indicates the Pearson correlation, which shows the directions of the correlation between variables, the independent variables and dependent variables by looking at the relationship with the control variables. It is illustrated that there is a positive correlation between earnings management as dependent variables and the following variables: firm size, operational cash flow, managerial ownership, free cash flow, and financial leverage.

#### 4.1. Hypothesis test

Table 5 shows that the coefficient of dependency is  $R^2 = .033$ , indicating that the explanatory variables explained (.03%) of the variance in earnings management while holding the other components constant. It was also demonstrated that the value of (F) was attained (.274). This table also demonstrates that there is an insignificant connection at p. value (0.615), which is more than (0.05).

It is shown in the Table 6 that there is a significant relationship between operating cash flow and earnings management at the P value of (0.039) which is less than ( $\alpha \leq 0.05$ ). It also indicates that

**Table 3. The values of Pearson chi-square tests**

<b>Chi-square tests</b>		
	<b>Chi (2)</b>	<b>Sig.</b>
Firm size	.231	.999
Operational cash flow	.231	.999
Managerial ownership	.350	.143
Free cash flow	.231	.999
Financial leverage	.231	.999
<b>DVs: Earnings management</b>		

The result of ( $R^2$ ) is 0.433, indicating that the explanatory variables accounted (43%) of the variation in profits management while holding the other variables remain constant. It was also demonstrated that the value of (F) was attained (6.601).

**Table 7** and **Table 8** shows a substantial association among free cash flow and earnings management at the P. The level (0.039) is smaller than (0.05). In addition, it indicates that the level of ( $R^2$ ) is 0.432, indicating that the explanatory variables accounted (43%) of the variation in earnings management while holding the other components equal. It was also demonstrated that the level of (F) was attained (6.082).

**Table 9** revealed that financial leverage and earnings management have a substantial link at the P. The level (0.028) is smaller than (0.05). It also indicates that the level of ( $R^2$ ) is 0.472, indicating that the explanatory variables accounted (47%) of the variation in earnings management while holding the other components equal. It was also demonstrated that the level of (F) had attained 7.156.

This **Table 10** shows the influence of firm size as a parameter on the connection between exogenous variables and response variable. It demonstrates that the association among company size, operational cash flow, managerial ownership, free cash flow, financial leverage, and earnings management is minimal. In addition, it indicates that the level of ( $R^2$ ) is 0.885, indicating that the explanatory variables accounted (88%) of the variation in earnings management. It also was demonstrated that the level of (F) had attained 6.17).

The operational cash flow factor has a regression line of 0.432 with such a reasonable scale of 0.039, just under 0.05 (5%), showing that between 2011 and 2020, operating cash flow harmed earnings management in industrial enterprises listed on the Amman Stock Exchange. As a consequence, it is possible to infer that the findings of this investigation support the second hypothesis (H2). This finding is in line with the observations of Osisioma et al. (2020), Banimahd and Aliabadi, (2013), Wang et al. (2018), Boujelben et al. (2020), Andreas (2017), and Jang and Kim (2017). They discovered that operational cash flow had a positive influence on earnings management, which indicates that the smaller a firm's operating cash flow, the greater the inclination for management to commit accruals by overestimating earnings, and conversely.

The regression model for free cash flow is 0.433, with a reasonable scale of 0.039, just under 0.05 (5%), showing that free cash flow significantly influences earnings management for industrial enterprises listed on the Amman Stock Exchange between 2011 and 2020. As a consequence, this finding confirms the first hypothesis (H1), according to which free cash flow drives diversity in profit management. This conclusion is consistent with the findings of Toumeh et al. (2020), Astami et al. (2017), Setiany (2021), and Alves (2021), and Abubakar et al. (2021), and Padmini and Ratnadi (2021). They discovered that free cash flow had a beneficial impact on the firm's manager's accruals.

**Table 4. Pearson correlation**

		Earnings management		Firm size		Operational cash flow		Managerial ownership		Free cash flow		Financial leverage	
Earnings management	Pearson correlation	1											
	Sig. (two-tailed)												
	N	10											
Firm size	Pearson correlation	.182	1										
	Sig. (two-tailed)	.615											
	N	10	10										
Operational cash flow	Pearson correlation	.658*	.456	1									
	Sig. (two-tailed)	.039	.185										
	N	10	10	10									
Managerial ownership	Pearson correlation	.647*	.282	.380	1								
	Sig. (two-tailed)	.043	.431	.279									
	N	10	10	10	10								
Free cash flow	Pearson correlation	.657*	.482	.995**	.331	1							
	Sig. (two-tailed)	.039	.158	.000	.351								
	N	10	10	10	10	10							
Financial leverage	Pearson correlation	-.687*	.310	-.203	-.775**	-.154	1						
	Sig. (two-tailed)	.028	.383	.573	.008	.672							
	N	10	10	10	10	10	10						

\*Correlation is significant at the 0.05 level (two-tailed).

\*\*Correlation is significant at the 0.01 level (two-tailed).

**Table 5. Linear regression analysis testing the relationship between firm size and earnings management**

**Coefficients<sup>a</sup>**

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	-.040	.413		-.096	.926
	Firm size	.056	.106	.182	.523	.615
F				.274		
R square				.033		
Adjusted R square				-.088		

a. Dependent variable: Earnings management

**Table 6. Linear regression analysis testing the relationship between operational cash flow and earnings management**

**Coefficients<sup>a</sup>**

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.086	.039		2.191	.060
	Operational cash flow	.296	.120	.658	2.471	.039
F				6.601		
R square				.433		
Adjusted R square				.362		

a. Dependent variable: Earnings management

**Table 7. Linear regression analysis testing the relationship between managerial ownership and earnings management**

**Coefficients<sup>a</sup>**

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.288	.194		-1.487	.175
	Managerial ownership	7.026	2.924	.647	2.403	.043
F				5.773		
R square				.419		
Adjusted R square				.347		

a. Dependent variable: Earnings management

**Table 8. Linear regression analysis testing the relationship between free cash flow and earnings management**

**Coefficients<sup>a</sup>**

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	
		B	Std. Error	Beta			
1	(Constant)	.101	.033		3.022	.017	
	Free cash flow	.289	.117	.657	2.466	.039	
F						6.082	
R square						.432	
Adjusted R square						.361	

a. Dependent variable: Earnings management

**Table 9. Linear regression analysis testing the relationship between financial leverage and earnings management**

**Coefficients<sup>a</sup>**

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	
		B	Std. Error	Beta			
1	(Constant)	.467	.110		4.260	.003	
	Financial leverage	-.782	.292	-.687	-2.675	.028	
F						7.156	
R square						.472	
Adjusted R square						.406	

a. Dependent variable: Earnings management

The first control variable, managerial ownership, has a reasonable scale of 0.419 and a significance level of 0.043, just under 0.05 (5%). This demonstrated that managerial ownership had no effect on earnings management for Amman Stock Exchange-listed industrial enterprises between 2011 and 2020. This implies that managerial ownership has no effect on variety in earnings management, and so the value of earnings management remains intact. This finding is consistent with the findings of studies undertaken by O’Callaghan et al. (2018), Suartama and Sukartha (2020), and Popoola et al. (2016) which discovered that managerial ownership influenced earnings management. The results show that experimental evidence does not support the notion that managerial ownership influences earnings management practices. In other words, managerial ownership cannot limit earnings management.

Financial leverage is the second control variable, with a reasonable scale of 0.472 and a significance level of 0.028, just under 0.05 (5%). This indicates that from 2011 to 2020, financial leverage has a beneficial impact on earnings management in industrial enterprises listed on the Amman Stock Exchange. As a result, variations in earnings management are driven by changes in financial leverage. The positive effect of financial leverage on earnings management demonstrates that the more a firm’s financial leverage, the greater the inclination to commit accruals. This finding is similar to the findings of previous studies by Vaklifard and Mortazavi (2016), Hoang and Phung (2019), and Padmini and Ratnadi (2021). They determined that the higher the financial leverage ratio, the more driven management is to use accruals.

**Table 10. Linear regression analysis testing the relationship between firm size, operational cash flow, managerial ownership, free cash flow, financial leverage and earnings management**

Model		Unstandardized Coefficients		Standardized coefficients	t	Sig.	
		B	Std. Error	Beta			
1	(Constant)	.480	.313		1.536	.199	
	Firm size	.118	.161	.386	.731	.505	
	Operational cash flow	-1.080	1.030	-2.401	-1.048	.354	
	Managerial ownership	-4.008	7.794	-.369	-.514	.634	
	Free cash flow	1.233	1.027	2.805	1.200	.296	
	Financial leverage	-1.309	.781	-1.151	-1.676	.169	
F						6.171	
R square						.885	
Adjusted R square						.742	

a. Dependent variable: Earnings management

Firm size is the third control variable, with a reasonable scale of 0.274 and an insignificant level of 0.615, just above 0.05 (5%). This figure demonstrates that business size has no effect on earnings management for industrial firms listed on the Amman Stock Exchange between 2011 and 2020. As a result, business size has little impact on variance in earnings management. In other words, regardless of the firm's size, earnings management stays the same. These findings were congruent with those of Nalarreason et al. (2019), Kalbuana et al. (2021), and Purnama and Nurdiniah (2019), who discovered that the size of a company does not affect earnings management. The idea that the size of a company has no impact on profit management approaches could not be substantiated.

### 5. Conclusions

Based upon discussion up to this point, it can be reasonably concluded that there is a favorable impact of free cash flow upon earnings management, with the indication that a business possessing free cash flow that is strong is able to continue to pursue earnings management through investment in quasi-type initiatives, rather than its dissemination to interested stakeholders or parties. Expressed another way, the manager of the firm works hard for improvement to her or his utility whilst neglecting the wellbeing of the shareholder. Moreover, there is a favorable impact of operational cash flow upon earnings management, the suggestion being that firms with operating cash flow that is high try to control profits through increasing them or vice versa. When the performance of the firm is sufficient, earnings will be boosted within the financial report by opportunist management; there will be increased earnings, when there is excellent performance. The goal of the firm is encouraging lenders, accounting reporting customers and shareholders to put forward investment within the company. It follows, then, that an investigation of the control variable findings is undertaken. Managerial ownership and leverage had a beneficial impact upon earnings management, with the indication that the bigger the loan, the greater the effort is spent by lenders in regulation and control of the policies of the managers in reducing the likelihood of violation of loan agreements. Inspection and supervision can limit the risk of lender-harming tactics being employed by opportunistic managers, e.g., earnings management. Between the year 2010 and the year 2020, the variable control of company size did not have an impact upon earnings management within industrial enterprises that were listed upon the stock exchange of Amman, the demonstration being that the concept of MO having an impact upon the practices

of earnings management is not supported. As such, earnings management cannot be limited by MO.

The sole focus of this research is upon industrial output from public enterprises during the period from 2011 to 2020. Moreover, company earnings management is assessed in this study through utilization of the indicators OCF, FL, FS, MO and FCF; so, the study results may not be employed with regard to attempting the measurement of public corporation earnings management through use of another default gateway. Moreover, the sole model is employed in this study for the identification of earnings management. Based upon the study findings, there is the expectation that potential future research will have to include several different independent factors in relation to earnings management, with a random selection method being used for assembling a group that is much different, along with a broadening of the component of evaluation so that many other firms, both industrial and other kinds, are included. If various other sorts of business are incorporated within the analysis or other periods or other alternative types of the statistical methodology employed in the determination of profit management, then different sorts of findings could be reached.

The findings have additional significant consequences. In the Jordanian context, OCF and FCF are important variables influencing the profession of earnings management, particularly in industrial firms with low growth prospects, because executives in these firms tend to manipulate earnings to avoid reporting lower profits and to keep resources in the company rather than spreading them to common stockholders. Another significant finding is that the use of OCF and FCF increased earnings information quality by lowering income firm imbalance between managers and investors.

In closing, employing earnings management, this study throws fresh light on operational cash flow and free cash flow. It also sheds fresh light on the impact of implementing earnings management, highlighting pertinent financial findings and implying that other factors might contribute to/restrict the occurrence of earnings management in Jordan. These might be the subjects of additional research, such as the impact of auditing quality and other company governance standards that limit profit management. Furthermore, longer-term research can better indicate the impact of listing in the monetary area on profit management by accounting in Jordan.

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#### Author details

Khaled Erieh Aburishah<sup>1</sup>

E-mail: [Aburishah@bau.edu.jo](mailto:Aburishah@bau.edu.jo)

Ahmad Abdelrahim Dahiyat<sup>1</sup>

Walid Omar Owais<sup>1</sup>

<sup>1</sup> Department of Accounting and Accounting Information System, Amman University College, Al-Balqa Applied University.

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