

The Impact of Financial Crisis on Earnings Management Activities: Evidence from Jordan

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ABSTRACT

This study examined empirically the earnings management practices of Jordanian firms during the financial crisis. The study used a sample of 568 observations (firm-year) related to 71 non-financial firms listed in Amman Stock Exchange (ASE) over the 8-year period (2005-2012). Correlation and OLS regression analyses are used to test the study's predictions. The study reports a negative, but statistically insignificant, association between earnings management activities and the financial crisis. This result does not provide sufficient support for the study's predictions and most prior studies' findings which report a decrease in earning-management practices during the financial crisis. Consistent with most prior related studies, the study findings indicate that firm's size and CFO are inversely related to earnings management activities, while leverage is positively related to earnings management. Failure to detect a significant relationship between the financial crisis and earnings management activities by this study could be primarily due to the minimal impact of the financial crisis on Jordanian firms compared to firms operating in well-developed economies documented by prior studies. The study's findings could be useful for policy makers, regulators, managers, investors and other capital providers within the Jordanian environment.

Keywords: Earnings management, Financial crisis, Discretionary accruals, Jordan.

JEL Classification: G01, M41

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Received on 27/2/2021 and Accepted for Publication on 26/9/2021.

أثر الأزمة المالية على أنشطة إدارة الأرباح: دليل من الأردن

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ملخص

فحصت هذه الدراسة بشكل تجريبي ممارسات إدارة الأرباح للشركات الأردنية خلال الأزمة المالية. استخدمت الدراسة عينة من 568 مشاهدة (شركة - سنة) تتعلق بـ 71 شركة غير مالية مدرجة في بورصة عمان خلال فترة ثماني سنوات (2005-2012). تم استخدام تحليلات الارتباط والانحدار المتعدد لاختبار تنبؤات الدراسة. تشير الدراسة إلى وجود علاقة سلبية، لكنها غير ذات دلالة إحصائية، بين أنشطة إدارة الأرباح والأزمة المالية. ولا تقدم هذه النتيجة دعماً كافياً لتوقعات الدراسة ومعظم نتائج الدراسات السابقة التي تشير إلى انخفاض في ممارسات إدارة الأرباح في أثناء الأزمة المالية. وانسجاماً مع معظم الدراسات السابقة ذات الصلة، تشير نتائج الدراسة إلى أن حجم الشركة والتدفق النقدي من الأنشطة التشغيلية يرتبطان عكسياً بأنشطة إدارة الأرباح، في حين أن الرافعة المالية مرتبطة بشكل إيجابي بإدارة الأرباح. وقد تكون نتائج الدراسة مفيدة للمديرين والمستثمرين وواضعي السياسات في البيئة الأردنية.

الكلمات الدالة: إدارة الأرباح، الأزمة المالية، المستحقات التقديرية، الأردن.

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* تاريخ استلام البحث 2021/2/27 وتاريخ قبوله 2021/9/26.

1. INTRODUCTION

The purpose of this study is to examine the impact of the financial crisis on earnings management activities by Jordanian companies. Earnings management has been a topic of interest to accounting researchers for more than two decades. Theoretical and empirical literature tried to link earnings management to a different set of explanatory variables, including firm attributes, industry attributes as well as economic conditions. The quality of financial reports has been of great interest after revealing a series of corporate scams, like Enron (2001) and WorldCom (2002). More recently, academic researchers paid attention and considered it among the most important issues to investigate, especially after the global financial crisis and the adoption of IFRS (Kousenidis et al., 2013).

A financial-crisis period probably increases the likelihood of managers behaving opportunistically to achieve their particular interests, achieve the firm's targets and at the same time avoid the communication of bad earnings news to markets through managing earnings. However, this opportunistic behavior may be minimized during the financial-crisis period for several reasons. Scholars (e.g. Cimini, 2015; Filip and Raffournier, 2014) argued that earnings management decreases during the financial-crisis period. As investors expect greater earnings management, management has fewer incentives to engage in earnings management, as firms are likely to be subject to more external monitoring from creditors, auditors and other stakeholders during the financial crisis.

A considerable number of studies examined the impact of the financial crisis on financial reporting (Mollik et al., 2013; Paolone et al., 2015; Cimini, 2015; Xu and Ji, 2016). However, the review of prior studies disclosed three notable observations which provide the key motivations to carry out this study. First, most prior related studies are concentrated in well-developed economies, especially in the USA and European countries, with a limited number of studies that examined this issue in emerging markets (Kumar and Vie,

2017). Second, the findings of these studies were mixed and inconclusive. While most prior studies (e.g. Bartram and Bondar, 2009; Filip and Raffournier, 2014; Bolon et al., 2015; Kumar and Viji, 2017) reported a negative association between financial crises and earnings management activities, others reported just the opposite (e.g. Abed et al., 2012; Lisboa et al., 2016). Third, the key differences in the capital market and economic environment features between developed and developing economies limit the generalizability of these studies' findings on emerging economies. This study contributes to the existing literature by providing additional empirical evidence on this issue from a small emerging market which is different, in terms of size, reporting requirements, governance regulations, legal environment and other institutional features, from those of developed countries, in which most prior related studies were carried out. To the best of our knowledge, this study is the first to examine this issue for Jordanian firms.

The study findings indicate an insignificant decrease in earnings management activities during the crisis period. Consistent with most prior related studies, a firm's size and CFO are inversely related to earnings management activities, while leverage is positively related to earnings management. The study's findings are expected to have implications for policy makers, researchers, regulators, investors and other capital providers within the Jordanian environment. The remainder of the paper is organized as follows: Section two reviews the related literature and presents the study's hypotheses. Section three describes data and methodology. Section 4 presents the results and discussion. Summary and conclusions are reported in the final section.

2. Literature Review & Hypotheses

2.1 Literature Review: The quality of financial reports has been of great interest to accounting

researchers after revealing a series of corporate scams, like Enron (2001) and WorldCom (2002). More recently, academic researchers paid attention and considered it among the most important issues to investigate, especially after the financial crisis and the adoption of IFRS (Kousenidis et al., 2013). A considerable theoretical and empirical work in the literature has addressed the impact of economic recession, especially the late financial crisis, on earnings management practices. An early study by Mollik et al. (2013) used a sample of 149 firms that publicly traded in Australia between 2006 and 2009 and used absolute performance-adjusted discretionary accruals from the modified Jones model as a proxy for earnings management. They concluded that Australian firms engaged in a higher level of income-decreasing earnings management during the global financial crisis.

Another related study by Kousenidis et al. (2013) used European Union data of 552 non-financial listed firms. They found that the majority of firms prefer high earnings quality, which is attributed to the firm's reliance on external financing and its incentives to increase the financial reporting quality, attract prospective investors and mitigate the financial-crisis effects. However, the results reported a reduction in earnings management after the financial crisis. Filip and Raffournier (2014) examined the impact of the financial crisis on earnings management practices by listed companies in 16 European Union countries. They found that earnings management has significantly decreased during the financial-crisis period (2008-2009). Cimini (2015) used a sample of 1692 non-financial firms (11844 firm-year observations) belonging to the European Union during the period (2006-2012) and considered the years (2008-2012) as crisis years. Findings indicated that the abnormal accruals during the crisis period are more negative than in the pre-crisis period. They also concluded that results vary between financial and non-financial firms. Paolone et al. (2015) study, which covered the top 5000 non-listed Italian firms during the period (2005-2012), provides findings indicating that the probability of

manipulating earnings decreases by almost five percent (5%) between the pre-crisis period and the crisis period.

Another related study by Dimitras et al. (2015) examined the impact of the financial crisis on European companies in combination with earnings management practices. It focused on financially distressed companies that were audited by Big-4 auditors during recession years. The study provided evidence indicating that financially distressed companies that are audited by a Big-4 auditor exhibit lower discretionary accruals. The results also revealed that Greek and Spanish companies reduced earnings management manipulation during the recession. In contrast, Portuguese, Irish and Italian companies showed mixed results. They tended to reduce earnings management practices, but there were reasons that influenced managers' behavior to increase earnings.

Lisboa et al. (2016) examined the impact of the financial crisis on earnings management for Portuguese listed firms through the period from 2003 to 2015, considering the period from 2003 to 2007 as the pre-crisis period and (2008-2015) as the crisis period. The results showed that firms engage more in earnings management during a crisis when the firm's financial situation is less stable. Another related study by Xu and Ji (2016) investigated the impact of the global financial crisis on earnings management of Chinese firms, using a dataset of 1392 firm-year observations from a large sample of China's top listed firms. Findings indicated that top Chinese listed firms engaged in earnings management and that the impact of the global financial crisis varies among sectors and industries. Recently, Costa (2016), using a sample of 2404 non-financial listed firms selected from 25 European Union countries throughout (2006-2014), reported a negative association of firm size, sales growth and dividends payout with earnings management. Furthermore, she found that non-

financial listed European firms tend to involve in less earnings management in periods of financial crisis than in pre -and post- crisis periods. In contrast, firms that have debts tend to manipulate earnings more in the financial crisis period. More recently, Kumar and Vij (2017) investigated the earnings management activities of Indian firms during the global financial crisis in 2008 compared with the pre -and post- crises periods. They used the financial data of S&P CNX 500 companies for the period of (2007-2012). Overall, the results showed a high level of earnings management in the sampled firms during the pre-crisis period, a significant decrease during the crisis period and an increase again in the post-crisis period.

The review of literature discloses that these studies are concentrated in well-developed economies, especially in the USA and European countries (Kumar and Vij, 2017) and provide mixed and inconclusive evidence. Limited research addressed this issue in developing economies in general and in the Jordanian market in particular. Examining earnings management in Jordan is vital due to several reasons: First, there is little known about the financial crisis and its relation to earnings management in the context of small emerging economies (Kumar and Vij, 2017), such as Jordan. Most prior related studies focused on the U.S. and other developed markets. Second, the prior studies which examined the impact of the financial crisis on earnings management reported mixed findings. While most prior studies (e.g. Bartram and Bondar, 2009; Filip and Raffournier, 2014; Bolon et al., 2015; Kumar and Vij, 2017) reported a negative association between financial crises and earning management activities, others reported just the opposite. (e.g. Abed et al., 2012; Lisboa et al., 2016). Third, the key differences in the capital market and economic environment features between developed and developing economies limit the generalizability of these studies' findings on emerging economies. This study contributes to the existing literature by providing additional empirical evidence on this issue from a small emerging market, which is different, in terms of size, reporting

requirements, governance regulations, legal environment and other institutional features, from those of developed counties, in which most prior related studies were carried out.

Monsif Azzoz and Khamees (2016) examined the impact of corporate-governance characteristics on earnings quality and earnings management. The researchers used a sample of 73 financial companies listed in the ASE from 2007 to 2012 to investigate the effect of main corporate governance characteristics, measured by board size, CEO duality, board composition, audit committee size, audit committee composition and audit committee activity, on earnings management and earnings quality. The results provided that audit committee size and audit committee activity have a relation with each of earnings quality and earnings management.

Sharf and Abu-Nassar (2021) investigated the effect of audit process quality and auditor's opinion on earnings management in industrial companies listed in Amman Stock Exchange (ASE) in Jordan, during the period from 2006 to 2015. The results revealed that when we move from unqualified opinion to disclaimer opinion, the extent of earnings management increases. The study's recommendation is to reconsider mandatory audit firm rotation by regulators and standards' setters. Al Awawda and Noor (2017) examined the extent to which Jordanian companies practice earnings management to find out the extent of the impact of earnings management practices on the reported earnings quality. The sample consisted of (20) industrial companies listed in Amman Stock Exchange during the period (2005-2015). The results in general showed decreasing earnings quality.

2.2 Hypotheses Development: Financial-crisis period probably increases the likelihood of managers behaving opportunistically to achieve their particular

interests, achieve the firm's targets and at the same time avoid the communication of bad earnings news to markets through managing earnings. However, it has been argued that as investors expect greater earnings management during the financial crisis, the management has less incentives to engage in earnings management (Cimini, 2015). Moreover, the increase of external monitoring from creditors, auditors and other stakeholders during a financial crisis may impact the discretion to manage earnings (Filip & Raffournier, 2014). However, prior studies which addressed this issue provided mixed results. While most prior studies reported a negative association between financial crisis and earning management activities (e.g. Bartram and Bondar, 2009; Filip and Raffournier, 2014; Bolon et al., 2015; Cimini, 2015; Kumar and Vij, 2017), others reported just the opposite (e.g. Abed et al., 2012; Lisboa et al., 2016). On the other hand, several studies have proposed that earnings management activities are affected by industry type and provided supporting evidence. For example, Cimmi (2015) concluded that the impact of financial crises on earnings management varies between financial and non-financial firms. Xu and Ji (2016) found that the impact of the financial crisis on earnings management practices by top Chinese firms varies across sectors and industries. Based on the above discussion, the study hypotheses are formulated as follows:

H1: There is a significant effect of the financial crisis on earnings management practices by non-financial companies listed in Amman Stock Exchange.

H2: The impact of the financial crisis on earnings management by non-financial companies varies across industries.

3. Data and Methodology

3.1 Sample & Data: The study sample consists of all non-financial firms (manufacturing & service firms) listed in Amman Stock Exchange during the eight-year period from 2005 to 2012, for which all the data needed to compute the study's variables is available. After deleting

outliers and extreme observations, we ended up with a final sample of 568 observations (firm-year) belonging to 71 companies. Data is obtained from the companys' annual reports and Amman Stock Exchange website.

3.2 Test Model: To model earnings management as a function of the global financial crisis and the control variables, an approach similar to that of Mollik et al. (2013) is used:

$$|DAL|_{it} = \beta_0 + \beta_1 CRIS_{it} + \beta_2 OCF_{it} + \beta_3 SIZE_{it} + \beta_4 NEG_{it} + \beta_5 LEV_{it} + \beta_6 D_i + \epsilon_{it}$$

where,

$|DAL|_{it}$: is the absolute value of discretionary accruals for firm i at time t, measured by unexpected accruals.

$CRIS_{it}$: is a dummy variable that takes the value one during the financial crisis (years 2008 and 2009) and zero otherwise.

CFO_{it} : is the cash flow from operation for a firm deflated by the book value of lagged total assets.

$SIZE_{it}$: is firm size measured by the natural log of total assets at the end of year t.

NEG_{it} : is a proxy of firm financial health, measured by a dummy variable that takes the value of one for the year of negative income (loss) and zero otherwise.

LEV_{it} : is the firm leverage ratio, measured by total debt to total assets.

D_{it} : is a dummy variable equal to 1 if the firm belongs to the manufacturing sector and zero otherwise,

ϵ : is the error term.

β_1, \dots, β_6 : are regression coefficients, t is the time subscript and i is the firm subscript.

Following several prior related studies (e.g. Mollik et al., 2013), the OLS regression is fitted to a pooled cross-sectional and time-series data over the study's period (2005-2012).

3.3 Measurement and Definitions of Variables

The Dependent Variable: The study dependent variable, earnings management, is measured by discretionary accruals (DAs). Following most prior related studies (e.g. Bartov et al., 2001; Mollik et al., 2013; Xu and Ji, 2016; Costa, 2016), the Jones model (1991) as modified by Dechow et al. (1995) is used to estimate the discretionary accruals. Following Dechow et al. (1995), the starting point to measure the discretionary accruals (DAs) is to compute total accruals (TAs). In the literature, two methods have been used to measure total accruals: the cash flow approach and the balance sheet approach. Several scholars (e.g. Collins and Hribar, 2002) argued that using the balance sheet approach to compute total accruals is inferior in certain circumstances to the cash flow approach. Therefore, this study used the cash flow approach to compute total accruals (TAs) by subtracting operating cash flow (CFO) from earnings before extraordinary items (EIBX) as follows:

$$TA_{it} = EIBX - CFO \dots\dots\dots (1)$$

A particular model (Jones, 1991) as modified by Dechow et al. (1995) is then used in generating the non-discretionary component of total accruals, enabling total accruals to be decomposed into discretionary (DA) and non-discretionary (NDA) components.

$$TA_{it} / A_{it-1} = \beta_1 (1 / A_{it-1}) + \beta_2 (\Delta REV_{it} / A_{it-1}) + \beta_3 (PPE_{it} / A_{it-1}) + e_{it} \dots\dots (2)$$

where,
 TA_{it} : is total accrual of firm i in year t.
 A_{it-1} : is lagged total assets.

ΔREV_{it}: is the change in operating revenue of firm i in year t.

Δ REC: is the change in net receivables.

PPE_{it}: is the gross plant and equipment property of firm i in year t.

All these variables are deflated by lagged total assets (TA_{it-1}) to reduce heteroscedasticity (Hoglund, 2010). The third step is to calculate the expected accruals (DAs) using the following model (4). However, the original Jones (1991) model treats revenues as entirely expected accruals. However, if earnings are managed by shifting revenues from future periods, then (ΔREV_{it}) would be endogenous to the model. In order to control for this indigeneity bias, Dechow et al. (1995) proposed the modified Jones model that provides the most powerful test of earnings management, in which the expected accruals are computed as follows:

Then, in the third step, non-discretionary accruals (NDAs) are computed using the following equation:

$$NDA_{it} / A_{it-1} = \beta^*_1 (1 / A_{it-1}) + \beta^*_2 (\Delta REV_{it} / A_{it-1} - \Delta REC_{it}) + \beta^*_3 (PPE_{it} / A_{it-1}) \dots\dots (3)$$

where,
 NDA_{it}: is the non-discretionary accruals of firm i in year t. All other variables are as defined above.
 β^{*}₁, β^{*}₂, and β^{*}₃: are the estimated parameters from the above regression model (2) parameters.

The final step is to compute DA using the following formula:

$$DA_{it} = TA_{it} - NDA_{it} \dots\dots\dots (4)$$

where, DA_{it} is the absolute value of discretionary accruals of firm i in year t.

Independent Variables

Control Variables: Following most prior related studies (e.g, Mollik et al., 2013), four control variables are added to the model specifications; these include firm size, leverage, negative earnings and cash flow from operation as proxies for firm performance. Prior empirical studies provided findings which indicate that earnings management activities are affected by firm size, leverage, firm performance and the existence of negative earnings.

Cash Flow from Operation: It is expected that more cash flows from operating activities reduce earnings management. Leuz et al (2003) argued that managers can use their accounting discretion to conceal economic shocks to the firm's operating cash flow; they may accelerate the reporting of future revenues or delay the reporting of current costs to hide poor current performance. Moreover, they found that accounting accruals buffer cash flow shocks and result in a negative correlation between changes in accruals and operating cash flows.

Firm Size: Firm size is widely used as a control variable when it comes to detecting earnings management. Abed et al. (2012) found that firm size is negatively related to earnings management. They argued that smaller firms are subject to fewer governors and directors; so, executives tend to involve in earnings management practices. Therefore, it is expected that larger firms are less involved in earnings management practices compared to smaller firms.

Negative Earnings: Burgstahler and Dichev (1997) concluded that U.S. managers use accounting discretion to avoid reporting small losses. While one may argue that managers have incentives to avoid losses of any magnitude, they only have limited reporting discretion and are consequently unable to report profits in the presence of large losses. Similarly, Roy Chowdhury (2006) found evidence that firms use multiple real earnings management tools in order to meet certain financial reporting benchmarks to avoid reporting annual losses. In particular, his evidence suggests that managers are providing price

discounts to temporarily boost sales, reducing discretionary expenditures in order to improve reported margins and overproducing to lower the cost of goods sold. Therefore, it is expected that the firm's negative earnings are positively associated with earnings management.

Leverage: Leverage may be associated with discretionary accruals. High leverage is associated with closeness to the violation of debt covenants (Press and Winthrop, 1990). To avoid debt covenant violation, managers of highly leveraged firms have incentives to make income-increasing discretionary accruals. According to Deangelo and Skinner (1994), troubled firms have large negative accruals related to contractual renegotiations that provide incentives to reduce earnings. Therefore, it is expected that a high leverage ratio increases earnings management.

The expected relations between the dependent variable (DA) and independent variables in the regression are as follows: If the financial crisis is associated with more effective monitoring, β_1 is likely to be negative. β_2 is expected to be negative due to the assumption that managers can use their accounting discretion to conceal economic shocks or hide poor current performance. Therefore, it is expected that more cash flows from operating activities reduce earnings management. β_3 is predicted to be negative, because larger firms are expected to be less involved in earnings management practices compared to smaller firms. β_4 is expected to be positively related to the absolute value of discretionary accruals, since managers of firms with negative earnings have stronger incentives to manipulate their financial statements in order to present a more favorable financial picture of the firm performance. Finally, β_5 is expected to be positive, because debt influences the incentives to manage earnings, in order to show a margin of safety to the creditors. β_6 is likely to be significant if earnings

management activities are affected by industry tape.

4. Results and Discussion

This section presents and discusses the empirical results. The results presented include descriptive statistics,

correlation and regression analysis.

4.1 Descriptive Statistics: Table 1 presents the descriptive statistics for the study variables for the whole sample consisting of non-financial firms listed in ASE from 2005 to 2012 by sector.

Table (1)
Descriptive statistics for study's variables

Variables	Min.	Max.	Mean	S. D.
 DA 	0.000	2.117	0.097	0.147
CRIS	0	1	0.250	0.433
OCF	- 1.797	1.555	0.0563	0.175
SIZE	13.060	21.152	16.978	1.427
NEG	0	1	0.210	0.411
LEV	0.000	0.975	0.320	0.218

|DA| is the absolute value of discretionary accruals. CRIS is a dummy variable that equals 1 during the financial crisis and 0 otherwise. OCF is cash flow from operating activities scaled by the book value of lagged total assets. SIZE is the natural log of the firm's fiscal year-end total assets. NEG is a dummy variable that equals 1 if loss occurred in the current year and 0 otherwise. LEV is total debt to total asset. D is a dummy variable that equals 1 if the firm belongs to the manufacturing sector and zero otherwise.

Table (1) shows that the discretionary accruals range from a minimum of almost 0 to a maximum of 2.117 with a reported average value of 0.097. The reported standard deviation of discretionary accruals of 0.147 substantially exceeds the reported mean, indicating a high variation in earnings practices across observations. The reported mean for DA is lower, but close to that reported in a recent related study carried out on Jordanian firms (Al-Mohareb and Alkhalailah, 2019) which reported an average (standard deviation) for discretionary accruals of 0.10 (0.088).

The financial crisis dummy variable, as depicted by the selected sample, has an average of 0.25, indicating that 25% of the observations belong to the financial-crisis

period (2008-2009). The operating cash flow has an average of 0.056 and ranges from a minimum of - 1.797 to a maximum of 1.555. Cash flow from operation could be negative due to several reasons, such as high cost of sales, decrease in revenues, changes in non-cash items (i.e., depreciation and deferred taxes) and changes in working capital (i.e., inventory, unearned revenues, accounts' receivables and accounts payable). The range of leverage ratio varies from a minimum of zero to a maximum of 0.975, with a standard deviation of 0.218. The reported average value for the leverage of 0.32 indicates that sample firms are moderately leveraged;

approximately 32% of sample firms' assets are financed by debt. An early study by Al-Mohareb & Alkhalaileh (2019) reported an average leverage of 30% for Jordanian firms. The reported average value of current-year losses (negative income) dummy variable of 0.21 indicates that in more than 20% of the study's observations (firm-year), sample

companies reported a loss.

4.2 Correlation Results: Table (2) presents the pairwise correlation coefficients between the study's variables.

Table (2)
Pearson correlation coefficients result between the study's variables

Variable	<i> DA </i>	<i>CRIS</i>	<i>OCF</i>	<i>SIZE</i>	<i>NEG</i>	<i>LEV</i>	<i>DI</i>
<i> DA </i>	1						
<i>CRIS</i>	-0.019	1					
<i>OCF</i>	-0.400**	0.023	1				
<i>SIZE</i>	-0.097*	0.019	0.135**	1			
<i>NEG</i>	0.047	0.054	-0.168**	-0.247**	1		
<i>LEV</i>	0.151**	0.010	-0.170**	0.327**	0.161**	1	

* Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

|DA| is the absolute value of discretionary accruals. *CRIS* is a dummy variable that equals 1 during financial crisis and 0 otherwise. *OCF* is cash flow from operating activities scaled by the book value of lagged total assets. *SIZE* is the natural log of the firm's fiscal year-end total assets. *NEG* is a dummy variable that equals 1 if loss occurred in the current year and 0 otherwise. *LEV* is total debt to total asset. *D* is a dummy variable that equals 1 if the firm belongs to the manufacturing sector and zero otherwise.

The results reported in Table 2 show that earnings management and financial crisis are negatively correlated. However, the related correlation coefficient of (-.019) is low and statistically insignificant at the conventional level ($\alpha = 1\%$). This result, which is inconsistent with the study's predictions and most prior studies' findings, does not provide an early indication on the proposition that firms tend to reduce earnings management activities during the financial crisis. Consistent with most prior studies' findings (e.g. Leuz et al., 2003), cash flow from operation is negatively and significantly related to earnings management. This result implies that if cash flow from operation increases, the firm's discretionary accruals decrease. As Leuz et al. (2003)

pointed out, accounting accruals buffer cash flow shocks and result in a negative correlation between changes in accruals and operating cash flows. The firm size is also negatively correlated with the value of discretionary accruals. This result, which is consistent with prior studies' findings (e.g. Mollik et al., 2013), provides initial support for the proposition that larger firms are less involved in earnings management practices compared to smaller firms, because smaller firms are subject to less governors and directors and therefore, managers tend to involve in earnings management practices. The statistically significant positive correlation between LEV and DA shows that

financially troubled firms have more incentives to manipulate earnings.

4.3 Regression Results: Table (3) reports the regression results. The reported F-value (24.948) indicates that the regression model is statistically significant at the conventional level ($\alpha = 0.01$). The reported adjusted R^2 of 0.18 suggests that approximately 18 percent of the variations in DA are explained by the model's predictors. CRIS is inversely related to DA; however, the related regression coefficient is statistically insignificant at the conventional level ($\alpha = 0.01$). This result is inconsistent with the study predictions and most prior related studies' findings (e.g. Roy Chowdhury, 2006; Kousenidis et al., 2013; Filip and Raffournier, 2014; Bolon et al., 2015; Kumar and Vij, 2017) which provided evidence that

indicates a negative association between earnings management and financial crisis. Failure to detect a significant relationship between financial crisis and earnings management activities could be due to the classification of the crisis period for Jordanian economy followed by this study or/and the minimal impact of the financial crisis on Jordanian firms compared with firms operating in well-developed economic environments as documented by prior studies. Alnajjar et al. (2010) examined the impact of the global financial crisis on the financial market and its basic sectors in Jordan and concluded that Jordan - like other countries in the world- has been affected by the financial crisis, but to a minor extent, due to the lack of modern financial instruments in the financial market.

Table (3)
The regression results

<i>Indep. Variables.</i>	<i>Coefficient</i>	<i>T-value</i>	<i>Sig.</i>	<i>VIF</i>
<i>Cons</i>	0.311	4.500	0.000	-
<i>CRIS</i>	- 0.003	- 0.277	0.782	1.005
<i>OCF</i>	- 0.319	- 10.286	0.000	1.084
<i>SIZE</i>	- 0.012	- 2.896	0.004	1.293
<i>NEG</i>	- 0.022	- 1.607	0.109	1.157
<i>LEV</i>	0.087	3.259	0.001	1.254
<i>D</i>	-0.029	-2.769	0.006	1.021
<i>Dept. Var.: DA Adj.R²= 0.180 ; F= 24.948; Sign. F = 0.00.</i>				
<i> DA is the absolute value of discretionary accruals. CRIS is a dummy variable that equals 1 during financial crisis and 0 otherwise. OCF is cash flow from operating activities scaled by the book value of lagged total assets. SIZE is the natural log of the firm's fiscal year-end total assets. NEG is a dummy variable that equals 1 if loss occurred in the current year and 0 otherwise. LEV is total debt to total asset.</i>				

The coefficient of operating cash flow (CFO) is negative and is statistically significant at the

conventional level ($\alpha = 0.01$). This result, which is consistent with prior related studies' findings (e.g. Leuz et al., 2003), indicates that an increase in cash flow from operation tends to reduce management to involve in earnings management. As Leuz et al. (2003) pointed out, accounting accruals buffer cash flow shocks and result in a negative correlation between changes in accruals and operating cash flows. The confidence in negative earnings is statistically insignificant at the conventional level ($\alpha = 0.01$). This result, which indicates that current-year losses have no significant influence on discretionary accruals, can be attributed to the fact that managers' rewards and compensations in Jordanian firms are, in general, not tied to the firm's financial performance. Therefore, as Shipper (1989) pointed out, managers have fewer incentives to increase the reported earnings during the financial crisis, when the firm's current period earnings are low. The coefficient of the industry dummy variable (D) is statistically significant at the conventional level ($\alpha = 0.01$). This result, which is consistent with the study's predictions and confirms prior related studies' findings (e.g. Cimini et al., 2015; Xu & Ji, 2016), indicates that earnings management activities vary across industries.

5. Conclusion and Future Research

This study examines the impact of the global financial crisis on earnings management activities for a sample of non-financial firms listed in ASE from 2005 to 2012. In general, correlation and regression analyses do not provide support for a significant association between earnings management and the financial crisis. Empirical findings indicate a negative, but an insignificant, association between earnings management and the financial crisis. This result is inconsistent with the study's predictions and most prior related studies which reported a decrease in earnings management activities during the financial crisis. A plausible interpretation of this result could be that the failure to detect a significant relationship between the financial crisis and earnings management activities by this

study could be due to the classification of the crisis period for Jordanian economy followed by this study or/and the minimal impact of the financial crisis on Jordanian firms compared to firms operating in well-developed economic environments. Alnajjar et al. (2010) examined the impact of the global financial crisis on the financial market and its basic sectors in Jordan and found that Jordan -like other countries in the world- has been affected by the financial crisis, but to a minor extent, due to the lack of modern financial instruments in the financial market.

Consistent with most prior studies' findings, firm size is negatively and significantly associated with discretionary accruals, indicating that larger firms are less likely to involve in earnings management practices compared to smaller firms. Also, the negative coefficient of operating cash flow provides support to the proposition that an increase in cash flow from operation reduces management tendency to involve in earnings management. As Leuz et al. (2003) pointed out, accounting accruals buffer cash flow shocks and result in a negative correlation between changes in accruals and operating cash flow. Leverage is found to be positively and significantly correlated with discretionary accruals. This finding indicates that managers in more leveraged firms are more likely to adopt aggressive earnings management techniques to show a margin of safety to their creditors and to avoid violation of debt covenants. Results also show that current-year losses have no significant influence on discretionary accruals.

One of this study's limitations is that it is based on a single developing country, which limits the generalizability of its findings. Another limitation is that this study considers only accrual-based earnings measure. However, the insignificant decrease in earnings management activities reported by this study does not rule out the possibility of significant decrease in real earnings management during crises,

as the management may resort to real earnings management as a substitute, as documented by prior studies (Zang, 2012). These limitations open up a scope for future research. Future studies may consider examining the impact of the financial crisis on real earnings management

activities. Future research may also consider expanding this study to include cross-sectional examination of this issue for several developing economies.

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المراجع العربية

عبد الناصر إبراهيم نور، وحنان العواودة، 2017، إدارة الأرباح وأثرها على جودة الأرباح المحاسبية: دراسة اختبارية على الشركات الصناعية الأردنية المساهمة العامة. *المصدر* 13 (2).