The Seybold Report

ISSN 1533-9211

DOI 10.5281/zenodo.7441941

THE TRADE-OFF BETWEEN ACCRUALS AND REAL ACTIVITIES EARNINGS MANAGEMENT IN JORDAN

MOHAMMED IDRIS

Accounting Department, Applied Science Private University, Amman, Jordan. Email: m.idris@asu.edu.jo

ABDELRAHIM NASSOURA

Accounting Department, Aldar University College, Ajman, United Arab Emirates. Email: nassoura@aldar.ac.ae

MARIAM AMMAR

Accounting Department, Gharyan University, Gharyan, Libya. Email: maryam.amar2012@yahoo.com

Abstract

This research examines the trade-off between accruals and real activities earnings management using a sample of manufacturing firms listed on Amman Stock Exchange between 2017 and 2021 the findings obtained from the recursive model show a positive relationship between unexpected levels of real earnings manipulations and abnormal accruals. This suggests that managers in Jordan use both types of earnings management simultaneously to arrive at target levels of earnings, which is unlike the US where there is evidence consistent with the trade-off between accruals and real activities earnings management. Further, the results suggest that managers of Jordanian firms manipulate earnings using both types of earnings management regardless of the scrutiny from controlling shareholders.

Keywords: earnings management, abnormal accruals, abnormal production costs, abnormal discretionary expenses, trade-off

1. Introduction

Park and Shin (2004, p.432) state that "high ownership concentration is a norm rather than an exception around the world". While ownership in publicly traded firms in the UK and the US is highly dispersed, ownership in other countries such as Canada, Spain, Denmark, Singapore, and Jordan are highly concentrated. In such contexts, Dechow et al. (2010) posit that agency problem exists primarily between controlling and minority shareholders. The main concern is that dominant shareholders may expropriate the interest of minority shareholders for their own private advantage (Yunos et al., 2010; Dechow et al., 2010). Yet the overall effect of ownership concentration on earnings management is indeterminate. On the one hand, controlling shareholders need not to be concerned about reported earnings because their interests are completely protected in such closely held firms (Klassen, 1997). On the other hand, controlling shareholders may have strong incentives for earnings manipulation to appropriate wealth from the public firms they control at the expense of minority shareholders (Burghleh, and Al-Okdeh, 2020). Based on this reasoning, Zang (2012) explores whether costs that managers bear, and constraints they face, for manipulating accruals would affect their decisions about real activities manipulations.

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.7441941

In Jordan, if firms were wary of the enforcement of corporate governance law in 2017, then they would be more likely to substitute real earnings management for accrual-based earnings management. Research examining the substitutive effect between the accruals and real activities earnings management is still young. With little research investigating issue, this research is the first to investigate the substitutive effect in Jordan by employing the model developed in Zang (2012) that is based on costs associated with each type of manipulation. Therefore, this research contributes to existing research by investigating the impact of the enhanced scrutiny of controlling shareholders on the substitutive relationship between both types of earnings management in the developing market of Jordan.

2. Literature Review

It is articulated that costs of each type of earnings management represent an important factor that might affect managers decisions concerning the extent to which each type is used to arrive at the desired levels of earnings. Moreover, the timing of each type of manipulation is also another important factor. On the one hand, accruals earnings management takes place at the end of the fiscal year. However, if the accruals available for manipulation have been constrained by the manipulation in prior periods and/or the scrutiny of the various corporate governance mechanisms, firms might run at the risk of a shortfall on meeting target earnings (Gunny, 2010). On the other hand, the manipulation of real activities must take place during a fiscal period because such manipulation would not affect reported earnings if practiced at the end of the financial period. Therefore, Zang (2012) concludes that managers use accruals and real activities manipulation strategies in a sequential order. Zang (2012) finds evidence supportive, in one part, to the findings of Cohen and Zarowin (2010), and to the findings of Graven (2009) in another part. First, the results show a significant positive relationship between big 8 auditors and abnormal production costs. This is consistent with big auditors reducing accruals earnings management which in turn leads firms to substitute the reduction in the use of discretionary accruals with an increase in the use of the real manipulation of production costs. Second, she finds no significant relationship between auditor size and the use of discretionary expenses manipulation, which indicates that managers do not resort to discretionary expenses manipulation due to the scrutiny of big 8 auditors. Similar evidence is found in Mnif and Hamouda (2021) as oil and gas companies in Saudi Arabia may substitute between earnings management strategies and tend to shift from accruals to real activities earnings management when audited by an industry expert.

Yet the findings of Cohen et al. (2008), Demers and Wang (2010) and Garven (2015) reject that the enhanced scrutiny of external audit quality over accruals earnings management would tempt managers to engage in real activities earnings management. The insignificant results of the latter studies are due to their use of pre- Sarbanes-Oxley data whereas the findings of Cohen and Zarowin (2010) are significant because of the use of post-Sarbanes-Oxley data. This contradiction might suggest that there is a high correlation between Sarbanes-Oxley act and big 4 auditors. As such, the positive relationship between big 4 and real activities earnings management found in Cohen and Zarowin (2010) is a result of the Sarbanes-Oxley act as suggested by Graham et al. (2005), rather than enhanced scrutiny over accruals by big 4

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.7441941

auditors. Following Graham's et al. (2005) reasoning, if Jordanian firms were wary of the enforcement of corporate governance law in 2017, then they would be more likely to substitute real earnings management for accrual-based earnings management. This is due to the regulated compositions of boards and ownership structure impeded in the act.

3. Methodology

3.1. Population and Sample

The data set of the current study comprises all manufacturing firms, the second largest sector (Junidi and Warrad, 2022), listed on Amman Stock exchange (ASE) for four consecutive years of reporting periods from 2017 to 2021. The study period is restricted to those four years in particular due to the date of good corporate governance act enforcement.

3.2. Measurement Variables:

In this research, four measures in total are developed as proxies for earnings management. Typically, managed earnings are measured as the residuals from an expectation model. Afterwards, each measure of earnings management becomes a dependent variable when research hypotheses are formulated and tested. In detail, the first measure is abnormal accruals. This measure is the estimated residual from the Kothari et al. (2005) model that solely proxies for accruals earnings management. The second, third and fourth measures are estimated using the Roychowdhury (2006) model to proxy for real activities earnings management. These measures are: abnormal cash flow from operating activities, abnormal production costs and abnormal discretionary expenses, respectively.

3.2.1. Estimation of Accruals Earnings Management:

The Kothari et al. (2005) model is adopted in this research as the appropriate measure of discretionary accruals. This model is regarded as an extension to the widely used Modified Jones model as it maintains all of the three original explanatory variables as follows,

$$TA_{it}/A_{it-1} = \alpha_0 + \alpha_i\,[1/A_{it-1}] + \beta_{1i}\,[(\Delta REV_{it} - \Delta REC_{it})/A_{it-1}] + \beta_{2i}\,[PPE_{it}/A_{it-1}] + \beta_{3i}\,ROA_{it(or\ it-1)} + \varepsilon_{it}$$

Where,

TA_{it} : total accruals in year t for firm i

A_{it-1} : total assets in year t – 1 for firm i

α_0 : Intercept

ΔREV : revenues in year t less revenues in year t-1 for firm i

ΔREC : revenues in year t less revenues in year t-1 for firm i

PPE : net property, plant, and equipment in year t for firm i

ROA : Rate of return on assets

ε_{it} : error term in year t for firm i

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.7441941

Therefore, absolute value of discretionary accruals is used in this research as the first dependent variable for two main reasons. First, following prior research mentioned above. Second, because absolute value of discretionary accruals is the best measure of the extent to which firms use accruals to manage earnings in the absence of a particular direction (Issa and Abu Siam, 2020).

3.2.2. Estimation of Real Activities Earnings Management:

The Roychowdhury (2006) model is used in this research to estimate the second, third and fourth measures of real activities earnings management. These measures are: abnormal cash flow from operating activities, abnormal production costs and abnormal discretionary expenses. Each measure is obtained by employing a separate cross-sectional regression as follows,

$$CFO_t / A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (S_t / A_{t-1}) + \beta_2 (\Delta S_t / A_{t-1}) + \varepsilon_t$$

$$PROD_t / A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (S_t / A_{t-1}) + \beta_2 (\Delta S_t / A_{t-1}) + \beta_3 (\Delta S_{t-1} / A_{t-1}) + \varepsilon_t$$

$$DISEXP_t / A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (S_{t-1} / A_{t-1}) + \varepsilon_t$$

Where,

CFO_t : current cash flow from operation

$PROD_t$: production costs

$DISEXP_t$: discretionary expenses

S_t : current sales

ΔS_t : change in current sales

S_{t-1} : lagged sales

ΔS_{t-1} : change in lagged sales

A_{t-1} : lagged total assets

Accordingly, each amount of managed earnings is measured as the residuals from the expectation model. It is important here to highlight that the data set of Roychowdhury (2006) is based on firms that report earnings greater or equal to zero. In other words, his data includes firms that are suspect of practicing real activities manipulations to avoid losses. Hence, his hypotheses are constructed to solely investigate income-increasing real activities earnings management which in turn has led to the use of signed residuals.

3.3.Empirical Model:

After the estimation of abnormal levels of real activities (accruals) manipulation according to Roychowdhury's (modified Jones) model, she creates a measure (ABRM) that aggregates the abnormal levels of production costs and discretionary expenses. That is, abnormal discretionary expenses are multiplied by negative one (so that higher values indicate income-increasing practices) then added to abnormal production costs. As such, she excludes abnormal operating

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.7441941

cash flow from the aggregate measure because of the ambiguous net effect of abnormal production costs and abnormal discretionary expenses on abnormal operating cash flow. Afterwards, she fashions a recursive model based on costs, timing and constraints associated with both types of earnings management. Symbolically,

$$ABRM = \beta_0 + \sum \beta_{1,k} \text{ cost of } ABRM_k + \sum \beta_{2,L} \text{ cost of } ABAC_L + \sum \beta_{3,m} \text{ control variables} + \mu$$

$$ABAC = \gamma_0 + \sum \gamma_{1,k} \text{ cost of } ABAC_k + \sum \gamma_{2,L} \text{ cost of } ABRM_L + \gamma_3 \text{ Unexpected RM} + \sum \gamma_{4,m} \text{ control variables} + \eta$$

The recursive model aims to capture the sequential relationship between accruals and real activities earnings management. Therefore, the residual values from the first equation (Unexpected RM) are included in the second equation because the extent of accruals earnings management is determined by the unexpected amount of real activities manipulation realized along with the costs associated with earnings management activities.

Zang's (2012) model is employed in the current research with minor changes. The costs associated with real activities manipulations that are included in this research are market share (M_SHARE) and Altman's Z-score for emerging markets (EM_Z-score). The former is measured as the ratio of a firm's sales to the total sales of its industry which captures the inverse of the costs associated with real activities manipulation. The latter is a measure of a firm's financial health where higher values of Z-score indicate a healthier financial condition and a lower cost associated with real activities manipulation. The costs associated with accruals earnings management that are included in this research are net operating assets (NOA) and the length of operating cycle (CYCLE). The former measure is aimed to proxy for abnormal accruals in previous periods. As such the cost of accruals earnings management in the current period would increase if NOA was overstated at the beginning of the period. NOA is proxied by a dummy variable that equals one if $NOA_{(t-1)}$ / lagged sales is above the median of the corresponding industry-year, and zero otherwise. The second measure aims to proxy for the firm's flexibility for accruals earnings management as firms with longer operating cycles have greater flexibility for accruals manipulations. CYCLE is measured as day's inventory plus day's receivable minus day's payable at the beginning of the year.

Along with leverage (LEV), growth (GRWTH) and size (SIZE), three more control variables are included in this model. First, return on assets (ROA) is included to control for performance only in the regression of RM because ABCA has already been estimated through Kothari et al.'s model that includes ROA as a driver. Second, managerial ownership or controlling shareholders (CNTRL) is included in both models as the results obtained from previous analyses provide evidence concerning its effectiveness in constraining both types of earnings management. Finally, following Zang (2012), the predicted amount of real activities manipulation (Pred_RM) is included only in ABCA model to control for the extent of real manipulations.

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.7441941

4. Results and Discussion

4.1. Regression Statistics:

Table (1) exhibits the results of the recursive model to measure the trade-off between accruals and real activities earnings management in Jordan. F-statistic and adjusted R^2 for ABRM regression are 4.837, which is statistically significant at 0.01 levels, and 28.35%, respectively. F-statistic and adjusted R^2 for ABAC regression are 6.087, which is statistically significant at 0.01 levels, and 42.06%, respectively.

The first result is the one that directly relates to the trade-off effect. The coefficient of Unexpected RM is significant and positive. This is opposite to the negative relationship found in Zang's study which indicates that unexpectedly high (low) real activities manipulation realized is offset by lower (higher) amount of accrual earnings management, and hence supports the substitutive effect in US market. Therefore, unlike the US, the positive relationship shows that managers in Jordan use both types of earnings management simultaneously to arrive at target levels of earnings. This is consistent with the argument proposed by Fields et al. (2001). Further, the result substantiates the findings in the previous analyses where levels of real activities manipulations are found not to be affected by the enhance scrutiny of external auditors over abnormal accruals. That is, managers in Jordanian firms manipulate earnings using both types of earnings management regardless of the scrutiny from regulatory bodies and external audit.

Coefficients of Market share (M_SHARE) are not statistically significant in both regressions implying that costs associated with real activities manipulation do not prevent firms in Jordan from engaging in the costly real earnings management, and similarly, in the less costly accruals earnings management. As for financial health condition, the coefficients of EM Z-score are positive and statistically significant at 0.01 levels. This indicates that firms in Jordan with healthy financial conditions manipulate their earnings more than other firms because costs associated with both types of earnings management are less for financially healthy firms. In terms of net operating assets, the coefficient of NOA is negative in both regressions. Yet it is insignificant in ABRM regression and significant in ABAC regression. The difference in significances validates the finding of no substitutive effect in Jordan. The fact that both types are practiced simultaneously in Jordan supports this result which suggests that real activities earnings management are not affected by prior period's abnormal accruals. But because prior period's accruals earnings management reverses in the current period, the coefficient of NOA is significant in the ABAC regression. The coefficients of CYCLE are statistically insignificant in both regressions which are suggestive of the simultaneous engagement in both types of earnings management. Further, firms with longer operating cycles do not have greater flexibility for accruals manipulations than firms with shorter operating cycles (i.e. the greater flexibility does not affect accruals manipulations).

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.7441941

Table (2) The Substitutive Relation between Real Activities-based and Accruals-based Earnings Management

Variable	ABRM		ABAC	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	-0.097	-2.325**	-0.046	0.786
Unexpected RM	-	-	0.257	2.328**
Costs associated with real activities manipulation:				
M_SHARE	0.021	0.414	-0.019	-0.491
EM_Z-Score	0.011	3.078***	0.018	3.212***
Costs associated with accruals earnings management:				
NOA	-0.006	-0.479	-0.052	-2.347**
CYCLE	0.005	-0.996	0.006	-0.820
Control variables:				
ROA	-0.543	-4.009***	-	-
CNTRL	-0.081	-3.663***	-0.092	-3.657***
Pred_RM	-	-	-0.549	-1.306
LEV	0.123	3.682***	0.175	2.758***
GRWTH	0.171	3.486***	0.507	5.890***
SIZE	0.044	1.307	-0.042	-0.511
Adjusted R2	28.35%		42.06%	
F-Statistic	4.837***		6.087***	

*** Correlation is significant at the 0.01 level.
** Correlation is significant at the 0.05 level.
ABRM = abnormal production costs plus negative one multiplied by abnormal discretionary accruals; ABAC = abnormal accruals; Unexpected RM = the estimated residual from ABRM regression; M_SHARE = the percentage of a firm's sales to total sales in its industry-year; EM_Z-score = Altman's Z-score for emerging markets; NOA = dummy variable that equals one if net operating assets divided by lagged sales is above the median of the corresponding industry-year, and zero otherwise; CYCLE = receivable days plus inventory days minus payable days; ROA = rate of return of assets; CNTRL = a dummy variable that equals 1 if the largest shareholder and his/her relatives are in control of the firm, and 0 otherwise; Pred_RM = the predicted value from ABRM regression; LEV = total liabilities scaled by total assets; GRWTH = the change in total assets scaled by lagged total assets; SIZE = natural logarithm of total assets.

As for control variables, the significant coefficient of return on assets (ROA) highlights the importance for controlling for performance in real activities model like accruals model. Managerial ownership (CNTRL) is as expected have an inverse relationship with both types of earnings management. The coefficient of the control variable (Pred_RM) is statistically insignificant contrast to that in Zang's (2012). This result is also suggestive of the simultaneous effect in Jordan as levels of real activities manipulations are not affected by levels of abnormal accruals. As such, it could be concluded that both types of earnings manipulations are not

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.7441941

determined sequentially. The coefficients of leverage (LEV) and growth (GRWTH) are positive and statistically significant and hence these results provide confirmatory evidence of the findings obtained from previous analyses. That is, managers of financially distressed firms in Jordan manipulate earnings to either avoid violating debt covenants or renegotiate lending contracts, and to avoid reporting negative growth rates that might affect their bonuses. The coefficient of firm size (SIZE) appears insignificantly associated with real activities earnings management regression which is generally consistent with previous analyses' findings. Yet unlike previous findings, the coefficient appears insignificant in abnormal accruals model. This might be due to controlling for the costs of real activities earnings management. Moreover, the additional results obtained from employing Zang's (2012) model also confirm the inexistence of a substitution between accruals and real activities earnings management in Jordan. Rather, the results show that managers in Jordan engage in both types of manipulations simultaneously.

5. Conclusion

For the first time, this research finds evidence suggestive of the simultaneous use of accruals and real activities earnings management in emerging markets. Moreover, by employing the model developed in Zang (2012), the results reject the substitutive effect in Jordan. Therefore, with little research investigating this issue in the US, this research is the first to employ these new approaches in the setting of emerging markets. The results obtained from employing the model of Zang (2012) suggest that accruals-based and real activities-based earnings management are used simultaneously in Jordan with little regard to costs associated with each type. Although more research is needed to further investigate this relationship, this finding could be considered as the first step for future research on the relationship between the two types of earnings management in emerging markets.This finding emphasizes the need for considering real activities earnings management in implementing future reforms. Specifically, managers reliant on the costly real activities manipulation does not seem to be limited by costs associated with this type of manipulation. Therefore, regulatory bodies in Jordan should ensure the effectiveness of internal monitoring mechanisms such as the role of independent directors because internal corporate governance mechanism can have a mitigating effect on real activities manipulations. Overall, the findings provide support for agency theory predictions when applied in the context of the emerging market of Jordan. Accordingly, both regulatory bodies and stakeholders in Jordan need to consider agency problems in future reforms and in the process of making contractual business decisions, respectively.

References

- Burghleh, M. & Al-Okdeh (2020). The impact of family ownership concentration on the relationship between the characteristics of board of directors and earnings management. Management Science Letters, 10(11), 969-978.
- Cohen, D, & Zarowin, P. (2010). Accrual based and real earnings management activities around seasoned equity offerings. Journal of Accounting and Economics, 50(1), 2-19.
- Cohen, D, Dey, A. & Lys, T. (2008). Real and accrual-based earnings management in the pre- and post-Sarbanes-Oxley periods. The Accounting Review, 83 (3), pp. 757-787.

The Seybold Report
ISSN 1533-9211
DOI 10.5281/zenodo.7441941

- Dechow, P., Ge, W. & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. Journal of Accounting and Economics, 50 (2-3), pp. 344-401.
- Demers, E. & Wang, C. (2010). The Impact of CEO career concerns on accruals based and real earnings management. http://ssrn.com/abstract=1562428.
- Fields, T., Lys, T. & Vicent, L. (2001). Empirical research on accounting choice. Journal of Accounting and Economics, 31 (1-3), pp. 255-307.
- Graham, J., Harvey, C. & Rajgopal, S. (2005). The economic implications of corporate financial reporting. Journal of Accounting and Economics, 40 (1-3), pp. 3-73.
- Garven S. A. (2015). The effects of board and audit committee characteristics on real earnings management: Do boards and audit committees play a role in its promotion or constraint? Academy of Accounting and Financial Studies Journal, 19(1), 67-84.
- Gunny, K. (2010). The relation between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks. Contemporary Accounting Research, 27(3), 855-888.
- Hayes, A. (2005). Statistical methods for communication science. New Jersey: Lawrence Erlbaum Associates, Inc.
- Issa, G. & Abu Siam, Y. (2020). Audit Committee characteristics, family ownership, and firm performance: Evidence from Jordan. International Journal of Innovation, Creativity and Change, 14(4), 237-251.
- Junidi, M. & Warrad, L. (2022). Strategic management accounting techniques and their effect on the capital structure. Academy of Strategic Management Journal, 21(5), 1-18.
- Klassen, K. (1997). The impact of insider ownership concentration on the trade-off between financial and tax reporting. The Accounting Review, 72 (3), pp. 455-474.
- Kothari, S, Leone, A. & Wasley, C. (2005). Performance matched discretionary accrual measures. Journal of Accounting and Economics, 39(1), 163-197.
- Mnif, Y. & Hamouda, A. (2021). Audit quality and the trade-off between real and accrual earnings management in the oil and gas industry: the GCC evidence. Journal of Applied Accounting Research, 22(2), 223-251.
- Park, Y. & Shin, H. (2004). Board composition and earnings management in Canada. Journal of Corporate Finance, 10, pp. 431- 457.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. Journal of Accounting and Economics, 42(3), 335-370.
- Yunos, R., Smith, M. & Ismail, Z. (2010). Accounting conservatism and ownership concentration: evidence from Malaysia. Journal of Business and Policy Research, 5 (2), pp. 1-15.
- Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. Accounting Review, 87(2), 675-703.