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PRE-LISTING YEAR EARNINGS MANAGEMENT AND LISTING REQUIREMENTS: EVIDENCE FROM KUWAIT

Key Words

***Discretionary Accruals;
Earning Management;
Kuwait Stock Exchange
(KSE); KSE Listing
requirements***

Abstract

This study investigates whether new listing Kuwaiti Shareholding Closed Companies (KSCCs) engage in opportunistic earnings management in the year before listing. Six discretionary accruals models are used to estimate the earnings management for 68 listing firms. Results based on parametric and non-parametric tests found some evidence to support the idea that earnings management had been exercised by KSCCs issuers in the pre-listing financial year. This conclusion was based on the existence of significant positive discretionary accruals of the means and medians generated by models based on current accruals.

Introduction

The objective in this study is to determine whether listing Kuwaiti Closed Shareholding Companies (KSCCs)⁽¹⁾ manage their earnings in the pre-listing period. The earnings management literature provides a range of incentives to explain why managers engage in opportunistic or “bad” earnings-management practices. Management-compensation contracts, debt

covenants, capital-markets and political and governmental regulatory incentives are the most frequently identified in the literature and are discussed by Healy and Wahlen (1999). This paper focuses on capital market issues and, specifically, earnings-management incentives before listing. Prior research discusses the practice of earnings management in the contexts of initial public offerings

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- (1) KSCCs, Kuwait Shareholding Closing Companies may be either listed or unlisted. KSCCs are incorporated by an official document issued by the promoters, of whom there must be at least five. Shares of KSCCs are freely transferable, subject to the requirement of Kuwaiti ownership of at least 51% (Law No. 15 1960).

(IPOs) and seasoned equity offerings (SEOs) in developed and emerging markets. Evidence from Kuwait can be an important contribution to the IPO earnings management literature because testing in this unique institutional setting provides, as explained below, the capacity to further explore the impact of institutional features on earnings management behaviour.

In effect since 1997, all companies pursuing listing on the Kuwait Stock Exchange (KSE) are required to achieve a minimum profit level for at least two years prior to listing. Further, since 2004, three stages of lockup restrictions⁽²⁾ on strategic shareholders⁽³⁾ have been required for listing KSCCs. An interesting institutional feature of the KSE is the lockup restriction. To guarantee the continuing participation of insiders in the firm even after going public, the lockup restriction was first imposed in November 2005. In Resolution no. 7 of 2005, all listing KSCCs were required to retain 25% of the company's

capital, specifically the strategic shareholders' stock. There are three fixed expiration periods after which strategic shareholders may dispose of shares. The first such period is after the first year of the listing, the second period is after the second year of the listing, and the third is after the third year of listing. A specific percentage of these shares may be sold in each period: 50% of the total restricted shares may be sold in the first expiration period, 25% in the second period, and the remaining 25% can be sold in the third period.

Another unique institutional setting of the Kuwaiti market that all companies listed on the KSE are required to have not less than two auditors, who must be from separate firms and act as joint auditors (Law No. 51 1994). Therefore, the unique combination of the pre-listing profit requirement, the three-stage lockup regulation and the two external auditors' requirement for listed KSCCs make the Kuwaiti context an excellent

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- (2) Lockup contracts are agreements that prevent the initial shareholders of listing firms from selling a specific percentage of their shares over a certain period following the admission to the stock exchange and are frequently voluntary arrangements (Goergen *et al.*, 2006). In the US, lockup contracts are called "lock-up agreements" and most use a 180 day period. In the UK, the contracts are called "lock-in" agreements but most of them have no specific expiry date and tie the expiration to a specific event such as the issuance of the financial statements or the firm's results with an average duration to be about 600 days (Espanlaub *et al.*, 2001). In Kuwait, lockups are imposed by law for all KSCCs going public and have standardised expiration periods and the same percentage of the lockup shares. Therefore, in this study, the term "lockup restriction" is used rather than "lockup agreement" (Resolution No. 1 2007; Resolution No. 3 2004).
- (3) A strategic shareholder is defined as one who owns, directly or indirectly 5% or more of the company's capital (Resolution No. 3 2004).

one for examining earnings management behaviour around listing.

Listing on the KSE

While it is classified as an emerging market (Dow Jones, 2011), the Kuwait Stock Exchange (KSE) is one of the best-developed stock markets in the region, second in size only to Saudi Arabia's, and well ahead of other regional markets (Oxford Business Group 2006b). The KSE ranks second in the Arab world in stock-value traded, and third in market capitalization (Aldaihani & Aldeehani 2008). Kuwait does, however, have a relatively less transparent system, weak accounting regulations and relatively few institutional investors compared with developed markets (El-Temtamy & Chaudhry 2009).

There are two kinds of shareholding companies listed on the KSE: public and closed. Commercial Companies Law No. 15 (1960) identifies KSCs as public offerings securities companies (IPOs). A public company can generally list on the exchange one year after its establishment, specifically after its first audited financial statement (Law No. 15 1960). The Commercial Companies Law No. 15 of 1960 identifies KSCs (public companies) as listed once their first set of

financial statements are issued. As KSCs are not required to provide two published annual reports prior to listing they cannot form part of the sample for this research.

In contrast to Kuwaiti IPOs, closed companies (or KSCCs) do not offer new shares for public subscription (National Bank of Kuwait 2007; Oxford Business Group 2006c). For KSCCs, listing is a way for the company to transition from private to public ownership. Existing KSCCs shareholders sell shares to the public at listing and thus, the proceeds go directly to the owners of the shares rather than to the offering firm. KSCCs (closed companies) membership in the market is granted by the Market Committee only when specific requirements are met⁽⁴⁾.

Review of the literature

Pre-listing year earnings management

The earnings management literature presents substantial evidence that managers manipulate earnings around share issues, including initial public offerings (IPOs) and seasoned equity offerings (SEOs). A lack of an easily accessible historical data on pre-IPO financial statements has, however, constrained researchers from in-

(4) For reviewing the institutional setting of Kuwait, accounting and auditing requirements, major events of the KSE and the evolution of listing requirements, see (Algharaballi & Goyen 2012).

vestigating earnings management prior to listing (Armstrong *et al.*, 2009). Therefore, studies directly addressing pre-IPO earnings management tend to be based on small samples. Ball and Shivakumar (2008), for example, include 172 IPOs in the U.K., DuCharme *et al.* (2001) study 171 U.S. IPOs, while Venkaraman *et al.* (2008) use 142 U.S. IPOs. In contrast, others assess the magnitude of earnings management in the IPO year, then infer results to the pre-IPO year. Teoh *et al.* (1998b), for example, use this approach in the U.S. market while Shen *et al.* (2008) apply it to the Chinese market.

IPO earnings management in emerging markets

The majority of earnings management studies have been undertaken in highly regulated markets such as the United States, the United Kingdom and Australia. However, a growing body of recent research shows interest in earnings management in some emerging markets. Using a sample of 46 companies listed on the Saudi Stock Market, Al-Moghawli (2010) found that managers of Saudi-listed companies manage earnings around SEOs to avoid potential political costs. Based on 254 Malaysian IPOs, Ahmad-Zaluki *et al.* (2011) reported that Malaysian IPO companies in general engaged in aggressive earnings

management that occurs primarily during a period of economic crisis. Then, these IPOs demonstrated significantly worse market-based performance than their more conservative counterparts during the same period. In the Iranian context, Mashayekhi and Azar (2008) test 90 IPO Iranian firms and found these firms to engage in accrual earnings management prior to going public and in the IPO year in order to reach their voluntary earnings forecast targets. Using a sample of 57 Egyptian IPOs, results indicate that issuers manage their pre-IPO earnings to maximize their offerings proceeds from selling their shares (Kamel 2006). In contrast, Kimbro (2005) provides evidence that Chinese IPO firms use more conservative financial accounting in their prospectuses and place a greater focus on the quality of financial reporting. He argues that income-decreasing accruals are used in Chinese prospectuses to save income during the pre-IPO period and allow greater accounting flexibility in future periods.

Hypothesis development

One KSE listing requirement mandates that all companies pursuing listing must achieve a minimum profit level for at least two years prior to listing. Kuwait's Ministerial Resolution No. 18 of 1990 requires private and public companies to adopt IFRS

when preparing financial statements. Both types of companies are also required to file audited annual financial statements. Listed companies, however, are subject to greater scrutiny because under Law No. 51 these companies must have at least two auditors from separate firms serve as joint auditors. Therefore, it is likely that public companies in Kuwait will be associated with higher-quality financial reports than will private companies.

Applying the agency theory framework to this research, an agency relationship exists between the agent who represents KSCCs' existing shareholders or 'insiders', and the principal who represents future investors. According to agency theory, there are three strong incentives for KSCC insiders to manage their companies' earnings upward prior to listing. The first incentive is to meet the KSE listing requirements. The second incentive is to maximize their opportunity to sell shares to the public at the highest possible price. The third incentive is to exploit the less onerous one auditor requirement before listing as opposed to the heavier two-auditor requirement after listing.

In addition, managing pre-listing earnings upward can be viewed as a positive signal under signaling theory. Increased earnings are sometimes

viewed by investors as a positive signal of the firm's high quality and value, while decreased earnings can be viewed as a negative signal (Scott 2009; Qintao 2007; Brau & Fawcett 2006; McKee 2005).

The author was unable to identify prior research that directly tests for the use of potential signals around share issues in the Kuwaiti market. However, some studies of the Kuwaiti market are indirectly related to the signaling issue and provide insight into the reported-earnings signaling hypothesis. Al-Qenae *et al.* (2002) investigate the correlation between company earnings and stock prices on the KSE and find evidence that Kuwaiti investors consider earnings when determining share prices. They also report that the market responds quickly to new information and anticipates earnings. Consistent with this, Elshamy and Al-Qenae (2005) determine that earnings and book values, jointly and individually, have a significant effect on security prices on the KSE. Based on this extant Kuwaiti research, it is reasonable to expect that KSCC issuers may use pre-IPO earnings management to signal a firm's quality. Therefore, earnings provide a feasible potential signaling device for KSCCs to achieve, as suggested by Fan (2007), separation from lower quality firms. The above argument leads to the following hypothesis:

KSE-listing firms exhibit income-increasing earnings management in the prelisting financial year.

Sample and Data

Sample Selection

The hypothesis is tested on KSCCs listing on the KSE from 1997 to the end of 2007. Three sectors: real estate, service and industry are included in the sample. Financial institutions such as banks and regulated institutions are not included as the financial reporting practices of these firms differ from other sectors as they are subject to specific reporting criteria (Central Bank of Kuwait 2009). The sample period is constrained due to the clo-

sure of the KSE from August 1990 to September 1992 during the Gulf War. Prior to 1995, the KSE was in the restructuring phase and the lack of availability of data during this period is a limitation⁽⁵⁾. The requirement that KSCCs listing on the KSE show a two-year pre-listing net profit was introduced in 1997. This two-year profit requirement generates the data necessary to examine earnings management behaviour before listing. Thus, these institutional features constrain the sample of KSCCs to those that list from 1997 onwards. The final sample contain sixty-eight firms listed on the KSE between 1997 and 2007 as in Table 1.

Table 1
Listing KSCCs by Industry and Year: Time Distribution of the Sample (1997-2007)

Sectors	Real Estate	Industrial	Service	Frequency	%
1997	0	3	1	4	5.8
1998	1	2	0	3	4.4
1999	3	0	0	3	4.4
2000	0	0	1	1	1.4
2001	0	0	0	0	0
2002	1	1	1	3	4.4
2003	0	2	1	3	4.4
2004	0	2	5	7	10.3
2005	7	1	10	18	26.5
2006	1	2	10	13	19.2
2007	4	1	8	13	19.2
Total	17	14	37	68	100.0

(5) Two years of annual reports are required to calculate the earnings management in the pre-and listing year.

Data Sources

Much of the extant earnings management research has been conducted in developed markets serviced by organized online databases and data archives. No comparable facilities exist in Kuwait. Prior to the onerous hand collection of data for this sample, merely obtaining the required data, especially the pre-listing financial statements, was a time-consuming task requiring a substantial amount of paperwork and gaining permission from officials to access the data. Pre-listing annual reports were obtained from two different sources: the prospectuses and the Ministry of Commerce and Industry (MoCI). The prospectuses were requested directly from each listing KSCC in the sample period. Prospectuses for around 40% of the sample were obtained directly from the listing firm. The MoCI archive was the source for the pre-listing annual reports of the remaining sample firms.

Time line

Following prior research, Fiscal Year 0 is considered as the fiscal year ending immediately after listing. Thus, Fiscal Year 0 financial statements are the first reported after listing and include both pre- and post-listing months. Similarly, Fiscal Year -1 ends prior to the listing date and represents the most recent set of financial statements available to market

participants (e.g., investors and regulators) prior to listing. Fiscal Year -2 refers to the financial statements issued two years prior to listing.

Discretionary Accruals

The primary measure used to test the hypothesis of positive earnings management is the discretionary accruals of Year -1, the pre-listing fiscal year. Testing involves two steps. The first step is to estimate the discretionary accruals using six different models as explained in the next section. The second step is to examine whether the means and medians of the discretionary accruals are significantly different to zero using Wilcoxon signed-rank tests and two-tailed *t*-tests.

Estimation of Discretionary Accruals

As earnings management cannot be directly measured, the extant literature presents a number of models to approximate and detect potential earnings management. In the absence of a clearly superior model, six discretionary accruals models are applied to estimate earnings management in this research. Three models based on total accruals: The modified Jones Model Dechow *et al.* (1995); the cash flow model Kasznik (1999); and the adjusted-performance discretionary accruals model Kothari *et al.* (2005) are applied here. Similarly, three models based on current accruals: the current

accrual model Teoh *et al.* (1998a); the cash flow model Kasznik (1999); and the adjusted-performance discretionary accruals Kothari *et al.* (2005) are also employed.

The modified Jones model tends to be the most powerful in detecting earnings management as compared with the five alternative discretionary accrual models tested by Dechow *et al.* (1995). Although the modified Jones (1995) model has sufficient power to justify its widespread use (Kothari 2001), it has been criticized by Kang and Shivaramakrishnan (1995) and by Guay *et al.* (1996) for its limited control of working capital accrual activities where managers may have more discretion over long-term accruals. Given this restriction, the Teoh *et al.* (1998a) current accrual model is also used to predict earnings management. The Jones model and its modified versions may also suffer from model mis-specification when applied to firms with extreme financial performance (Kothari *et al.* 2005; Kasznik 1999). Thus, to control for such mis-specification and to improve the reliability of the discretionary accruals measures, the Kasznik (1999) cash flow model and the Kothari *et al.* (2005) adjusted-performance discretionary accrual model are also applied.

Discretionary Accruals Models

Models based on total accruals

1- The Modified Jones Model

$$\frac{TA_{j,t}}{A_{j,(t-1+t)/2}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,(t-1+t)/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t}}{A_{j,(t-1+t)/2}} \right] + \alpha_3 \left[\frac{PPE_{j,t}}{A_{j,(t-1+t)/2}} \right] + \sum_{i=1}^3 + \varepsilon_{j,t}$$

2- The cash flow model based on total accruals

$$\frac{TA_{j,t}}{A_{j,(t-1+t)/2}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,(t-1+t)/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t}}{A_{j,(t-1+t)/2}} \right] + \alpha_3 \left[\frac{PPE_{j,t}}{A_{j,(t-1+t)/2}} \right] + \alpha_4 \left[\frac{\Delta CFO_{j,t}}{A_{j,(t-1+t)/2}} \right] + \sum_{i=1}^3 + \varepsilon_{j,t}$$

3- The adjusted-performance model based on total accruals

$$\frac{TA_{j,t}}{A_{j,(t-1+t)/2}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,(t-1+t)/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t} - \Delta TR_{j,t}}{A_{j,(t-1+t)/2}} \right] + \alpha_3 \left[\frac{PPE_{j,t}}{A_{j,(t-1+t)/2}} \right] + ROA_{j,t} + \sum_{i=1}^3 + \varepsilon_{j,t}$$

Models based on current accruals

1- Current Accruals Model

$$\frac{CA_{j,t}}{A_{j,t-1}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,(t-1+t)/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t}}{A_{j,(t-1+t)/2}} \right] + \sum_{i=1}^3 + \varepsilon_{j,t}$$

2- The cash flow model based on current accruals

$$\begin{aligned} \frac{CA_{j,t}}{A_{j,t-1}} &= \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,(t-1+t)/2}} \right] \\ &+ \alpha_2 \left[\frac{\Delta REV_{j,t}}{A_{j,(t-1+t)/2}} \right] + \alpha_3 \left[\frac{\Delta CFO_{j,t}}{A_{j,(t-1+t)/2}} \right] \\ &+ \sum_{i=1}^3 \varepsilon_{j,t} \end{aligned}$$

3- The Adjusted-performance model based on current accruals

$$\begin{aligned} \frac{CA_{j,t}}{A_{j,(t-1+t)/2}} &= \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,(t-1+t)/2}} \right] \\ &+ \alpha_2 \left[\frac{\Delta REV_{j,t} - \Delta TR_{j,t}}{A_{j,(t-1+t)/2}} \right] + ROA_{j,t} + \sum_{i=1}^3 \varepsilon_{j,t} \end{aligned}$$

Where:

$TA_{(j,t)}$ = total accruals for estimation portfolio firm j in year t;

$CA_{(j,t)}$ = current accruals for estimation portfolio firm j in year t;⁽⁶⁾

$A_{j,(t-1+t)/2}$ = average of the beginning and end of year total assets for estimation portfolio firm j in year t;

$\Delta REV_{(j,t)}$ = change in revenues for estimation portfolio firm j in year t;

$\Delta TR_{(j,t)}$ = change in trade receivables for KSCC sample firm j in year t;

$PPE_{(j,t)}$ = gross property, plant, and equipment for estimation portfolio firm j in year t;

$\Delta CFO_{(j,t)}$ = the change in cash flow from operation for KSCC sample firm j in year t;

$ROA_{(j,t)}$ = return on assets of the current year for estimation portfolio firm j in year t;

$\sum_{i=1}^3$ = series of industry dummies where the variable equals one when the company is of the sector described by it and 0 otherwise;

$\varepsilon_{(j,t)}$ = error term for estimation portfolio firm j in year t;

All variables are scaled by average total assets to mitigate heteroscedasticity.

The initial regressions are estimated from out-of-sample listed KSCCs trading on the KSE in the real estate, industry and service sectors during the period 1997 to 2007. Only KSCCs that have been listed for more than three years are included in these initial regressions⁽⁷⁾. Thirteen year-

(6) Following Teoh *et al.*, (1998a) a measure of current accruals can be obtained as follows:

$$CA_{j,t} = \Delta CA_{j,t} - \Delta Cash_{j,t} - \Delta CL_{j,t} + STD_{j,t}$$

Where:

$CA_{(j,t)}$ = current accruals;

$CA_{(j,t)}$ = change in current assets from year t – 1 to year t;

$Cash_{(j,t)}$ = change in cash and cash equivalent t – 1 to year t;

$CL_{(j,t)}$ = change in current liabilities from year t – 1 to year t;

$STD_{(j,t)}$ = change in debt included in current liabilities from year t – 1 to year t;

The variables j and t are estimate portfolio firm j and time subscripts.

(7) The three-year condition is imposed to ensure the KSCCs have had time to clean their books of any opportunistic earnings management behaviour around lockup expiration periods.

by-year portfolios (1996-2008) are formed to estimate the nondiscretionary accruals. Portfolios vary in size across time with the number of firms in portfolios ranging from a minimum of 19 in 1996 to a maximum of 77 in 2008. A cross-sectional regression was performed separately in each year for each portfolio to estimate the coefficients of the discretionary accruals models. Sample firms are assigned to the portfolios based on the sample firm's year of listing⁽⁸⁾.

Consistent with the extant literature, all firm-year observations lacking sufficient data to calculate earnings management proxies are deleted (Kothari *et al.*, 2005). In addition, all firm-year observations where accounting items are exactly equal to zero are eliminated (Burghstahler *et al.*, 2006). To mitigate the influence of outliers, specific observations were deleted at three standard deviations from the mean (Xie *et al.*, 2003). A case wise diagnostics table was also inspected for any standardised residual values above 3.0 or below -3.0. These cases are investigated to ensure that they represent genuine scores, not data errors (Cotter 1996)⁽⁹⁾. The results of the regression coefficients and descriptive statistics are shown in Table 2.

As expected, and consistent with prior research, the mean coefficient estimate on property, plant, and equipment (PPE) is negative for each of the three models based on total accruals. The negative sign of the PPE coefficient is related to an income-decreasing accrual reflecting the impact of depreciation (Jones 1991). The sign for the change in revenue coefficients was mostly negative. However, a mean positive coefficient for the change in revenue was generated by the cash flow model based on current accruals. Jones (1991) observed that the sign of change in revenue may not be as obvious as the sign of the PPE. As she explains "... a given change in revenue can cause income-increasing changes in some working capital accounts (e.g., increases in accounts receivable) and income-decreasing changes in others (e.g., increases in accounts payable)" (Jones 1991 p. 213). The percentage of positive coefficients of changes in revenue are 46% for the modified Jones model, 69% for the cash flow model based on total accruals, 31% for the adjusted performance model based on total accruals, 62% for the current accruals model, 78% for the cash flow model based on

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- (8) Forming portfolios was considered based on year and industry but these portfolios contained too few firms for meaningful analysis.
- (9) Multiple regressions are very sensitive to outliers (Pallant 2011). All thirteen year-by-year portfolios were screened out for outliers and some cases were deleted. This step was part of the initial data screening process.

current accruals and 54% for the adjusted performance model based on current accruals. Consistent with Dechow and Dichev (2002), DuCharme *et al.* (2001) and Kasznik (1999), both cash flow models-based on total accruals or on current accruals-generate negative signs for cash flow from operation (CFO), reflecting the negative association between accruals and CFO. Models using the total accruals method have more explanatory power than models using the current accrual method. The cash flow model based on total accruals provides the highest explanatory power at 58.6%, as compared with the adjusted performance model based on total accruals and the modified Jones model, which generate adjusted- R^2 s of 48.27% and 29.17% respectively. Both current accruals models-the cash flow model and the adjusted performance model-show similarly low explanatory powers of 10.8% and 10.2%. The accruals model has the lowest explanatory power with an adjusted- R^2 of only 1.4%.

Peasnell *et al.* (2000) also generated relatively poor-fitting R^2 numbers for the cross-sectional expectations models used in their study.⁽¹⁰⁾ They argue that relatively high R^2 statistics do not certify

that a particular model is sufficiently capable of partitioning accruals into discretionary and nondiscretionary components. Further, they note that "... the precise reasons why the models fit well in some settings and poorly in others remain unclear" (p. 321).

Results

Table 3 presents descriptive statistics for discretionary accruals and results based on the six discretionary accrual models. The statistical tests in this paper are intended to investigate the pre-listing year earnings management. However, for comparability, the discretionary accruals are estimated for three periods, the prelisting year (Year -1), the listing year (Year 0), and the post-listing year (Year +1). Details for the statistical tests and results that were undertaken to investigate the listing year earnings management (year 0) vs. the pre-listing year earnings management are reported in the study of Algharaballi (2012).

The magnitude of means and medians of discretionary accruals are positive in Year -1 for all models except the modified Jones model. As shown in Panel A of Table 3, the modified Jones model generates a negative median of

(10) The majority of the adjusted- R^2 s reported by Peasnell *et al.* (2000) for their current accruals model are less than 5%. Habib and Hossain (2008), in the Australian market, report 12% R^2 for the modified Jones model. In the Spanish context, del Mar Delgado and Lara (2001) report adjusted- R^2 of 14.5% for both the modified Jones model and for the current accrual model. Kamel (2006) reports mean adjusted- R^2 figures of 11.30% and 11.50% for the modified Jones model and for the current accrual model respectively when applied to Egyptian data.

Table 2
Estimated coefficients for the discretionary accruals models

Models based on Total Accruals				
1. Modified Jones Model				
$\frac{TA_{j,t}}{A_{j,t-1+t/2}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,t-1+t/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t}}{A_{j,t-1+t/2}} \right] + \alpha_3 \left[\frac{PPE_{j,t}}{A_{j,t-1+t/2}} \right] + \sum_{i=1}^3 + \varepsilon_{j,t}$				
Coefficients	Mean	Median	Minimum	Maximum
α_0	0.0487	0.0320	-0.04	0.25
α_1	-81333.84	-15746.26	-407014.11	13253.01
α_2	-0.0516	-0.0420	-0.55	0.18
α_3	-0.0967	-0.0860	-0.21	0.01
RE Sector	-0.0014	0.0130	-0.17	0.11
IND Sector	0.0462	0.0590	-0.10	0.18
SERV Sector	0.0055	0.0170	-0.14	0.19
Mean Adjusted R^2 29.17%				
2- Cash Flow Model				
$\frac{TA_{j,t}}{A_{j,t-1+t/2}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,t-1+t/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t}}{A_{j,t-1+t/2}} \right] + \alpha_3 \left[\frac{PPE_{j,t}}{A_{j,t-1+t/2}} \right] + \alpha_4 \left[\frac{\Delta CFO_{j,t}}{A_{j,t-1+t/2}} \right] + \sum_{i=1}^3 + \varepsilon_{j,t}$				
Coefficients	Mean	Median	Minimum	Maximum
α_0	0.0293	0.0050	-0.08	0.27
α_1	-58026.90	-9287.22	-409639.87	145385.33
α_2	-0.0094	0.0390	-0.54	0.19
α_3	-0.0892	-0.0740	-0.28	-0.01
ΔCFO	-0.4661	-0.4630	-1.15	0.05
RE Sector	0.0177	0.0230	-0.18	0.13
IND Sector	0.0617	0.0700	-0.11	0.20
SERV Sector	0.0161	0.0360	-0.15	0.18
Mean Adjusted R^2 58.6%				
3- Adjusted Performance Model				
$\frac{TA_{j,t}}{A_{j,t-1+t/2}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,t-1+t/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t} - \Delta TR_{j,t}}{A_{j,t-1+t/2}} \right] + \alpha_3 \left[\frac{PPE_{j,t}}{A_{j,t-1+t/2}} \right] + ROA_{j,t} + \sum_{i=1}^3 + \varepsilon_{j,t}$				
Coefficients	Mean	Median	Minimum	Maximum
α_0	0.0052	-0.0070	-0.15	0.19
α_1	-96387.68	-21720.06	-513839.42	76452.15
α_2	-0.0881	-0.0360	-0.64	0.13
α_3	-0.0896	-0.0890	-0.19	-0.01
ROA	0.4272	0.4210	-0.62	1.53
RE Sector	0.0043	0.0030	-0.14	0.11
IND Sector	0.0381	0.0380	-0.09	0.18
SERV Sector	0.0117	-0.0070	-0.14	0.20
Mean Adjusted R^2 48.27%				

Cont. Table 2

Models based on Current Accruals				
1- Current Accruals Model				
$\frac{CA_{j,t}}{A_{j,t-1}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,(t-1+t)/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t}}{A_{j,(t-1+t)/2}} \right] + \sum_{i=1}^3 \varepsilon_{j,t}$				
Coefficients	Mean	Median	Minimum	Maximum
α_0	0.0328	0.0200	-0.07	0.23
α_1	-6259.75	5099.78	-313083.31	502714.97
α_2	-0.0141	0.0100	-0.56	0.38
RE Sector	-0.0388	-0.0480	-0.29	0.10
IND Sector	-0.0193	0.000	-0.30	0.08
SERV Sector	-0.0162	-0.0060	-0.32	0.13
Mean Adjusted R^2 1.4%				
2- Cash Flow Model				
$\frac{CA_{j,t}}{A_{j,t-1}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,(t-1+t)/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t}}{A_{j,(t-1+t)/2}} \right] + \alpha_3 \left[\frac{\Delta CFO_{j,t}}{A_{j,(t-1+t)/2}} \right] + \sum_{i=1}^3 \varepsilon_{j,t}$				
Coefficients	Mean	Median	Minimum	Maximum
α_0	0.0264	-0.0050	-0.10	0.22
α_1	20278.51	8455.32	-238958.79	628745.91
α_2	0.0224	0.0350	-0.49	0.40
ΔCFO	-0.3045	-0.2630	-0.87	0.23
RE Sector	-0.0302	-0.0190	-0.26	0.10
IND Sector	0.0072	0.0090	-0.25	0.10
SERV Sector	0.0050	-0.0050	-0.10	0.16
Mean Adjusted R^2 10.8%				
3- Adjusted Performance Model				
$\frac{CA_{j,t}}{A_{j,(t-1+t)/2}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{j,(t-1+t)/2}} \right] + \alpha_2 \left[\frac{\Delta REV_{j,t} - \Delta TR_{j,t}}{A_{j,(t-1+t)/2}} \right] + ROA_{j,t} + \sum_{i=1}^3 \varepsilon_{j,t}$				
Coefficients	Mean	Median	Minimum	Maximum
α_0	-0.0036	-0.0260	-0.10	0.20
α_1	-71773.84	-42676.56	-368396.86	196499.48
α_2	-0.0573	0.0030	-0.74	0.34
ROA	0.5079	0.3440	0.13	1.69
RE Sector	-0.0285	-0.0360	-0.30	0.12
IND Sector	-0.0282	-0.0090	-0.35	0.08
SERV Sector	-0.0158	-0.0090	-0.34	0.14
Mean Adjusted R^2 10.2%				

$TA_{(j,t)}$ = total accruals for estimation portfolio firm j in year t;

$CA_{(j,t)}$ = current accruals for estimation portfolio firm j in year t;

$A_{j,(t-1+t)/2}$ = average of the beginning and end of year total assets for estimation portfolio firm j in year t;

$\Delta REV_{(j,t)}$ = change in revenues for estimation portfolio firm j in year t ;

$\Delta TR_{(i,t)}$ = change in trade receivables for KSCC sample firm j in year t ;

$PPE_{(j,t)}$ = gross property, plant, and equipment for estimation portfolio firm j in year t ;

$\Delta CFO_{(j,t)}$ = the change in cash flow from operation for KSCC sample firm j in year t ;

$ROA_{(j,t)}$ = return on assets of the current year for estimation portfolio firm j in year t ;

$\sum_{i=1}^3$ = The dummy equals one when the company is of the sector described by it and 0 otherwise.

$\varepsilon_{j,t}$ = error term for estimation portfolio firm j in year t ;

The variable (1/average total assets) is reported as an unstandardized value, consistent with Shen et al., (2008) in the Chinese market, Koerniadi (2007) in the New Zealand market and Bugshan (2005) and Whelan (2004) for the Australian market.

-0.39% for Year -1 while the mean is positive. Table 3 shows that discretionary accruals are lower in the listing year (Year 0) than in the prelisting year (Year -1), with the exception of the cash flow model based on total accruals.

Also shown in Table 3, the highest number of firms with positive discretionary accruals is 45 of a total of 68, generated by the cash flow model based on current accruals in Year -1. On the other hand, the lowest number of firms with positive discretionary accruals is 33 of a total of 68, generated by the modified Jones model in Year 0. Models based on discretionary current accruals indicate the highest level of prelisting year earnings management compared with models based on total accruals. All models except for the cash flow model based on total

accruals have their average discretionary accruals peak in Year -1, decrease in Year 0, and then inflate in Year + 1.

Given the significantly non-normal distributions of the pre-listing discretionary accruals⁽¹¹⁾, the non-parametric Wilcoxon signed-ranked test is used to determine if the medians are statistically different from zero. This approach is consistent with Armstrong *et al.* (2009) and Teoh *et al.* (1998b). However, results of the parametric *t*-test will be also reported to allow comparison with other studies (for example, Ball and Shivakumar (2008) and Roosenboom *et al.* (2003)). Descriptive statistics and results for the discretionary accrual measures classified by testing period are reported in Table 3.

(11) The Kolmogorov-Smirnov and Shapiro-Wilk tests are used to test for the normality of distributions of DA. Normality is rejected for all estimates of DA. The *p* values for the Kolmogorov-Smirnov and Shapiro-Wilk tests respectively are as follows: Modified Jones model (0.002 and 0.00); Cash Flow model based on total accruals (0.036 and 0.002); Adjusted Performance model based on total accruals (0.007 and 0.001); Current Accruals model (0.017 and 0.00); Cash Flow model based on current accruals (0.026 and 0.00); and the Adjusted Performance model based on current accruals (0.001 and 0.00).

Models based on current accruals in Panels D, E, and F yield the highest level of positive discretionary accruals (medians and means) in Year -1. The current accruals model reports medians (and means) of 5.11% (12.25%) and 4.8% (11.57%) for the cash flow model based on current accruals, and 6.84% (12.6%) for the adjusted performance model based on current accruals. Further, they are statistically different from zero at the 5% level based on both Wilcoxon signed-rank tests and *t*-tests.

Results from models based on total accruals for the pre-listing year, reported in Panels A, B, and C of Table 3, show small medians that lack significance. While mean discretionary accruals are statistically significant at the conventional level, they are influenced by outliers. When outliers (reported at the bottom of Table 3) are excluded from the sample, the means continue to be positive but are no longer statistically significant.

The high magnitude of positive earnings management in the prelisting year detected using the current accruals-based models can be explained using two interpretations from the literature. First, KSCCs listing firms use current discretionary accruals to deliberately manage earnings in the prelisting year to meet profit requirement for listing on the KSE. As a

result, discretionary accruals immediately decline in the listing year (as shown in Table 3) due to current accruals reversal (Dechow & Dichev 2002). The two-auditor requirement for public KSCCs may also have a role to play in this phenomenon. Second, managers have more discretion over current accruals and thus current accruals are the component most easily subject to successful managerial manipulation (Teoh *et al.*, 1998a). Athanasakou *et al.* (2009) justify the use of the current accruals method with three reasons. First, researchers tend to agree that working capital accruals account for most of the variation in total accruals (Dechow & Dichev 2002; Teoh *et al.* 1998b; Sloan 1996; Subramanyam 1996). Second, current accruals are more flexible than non-current accruals (e.g., depreciation, amortization, impairments) as they occur more frequently and involve a higher degree of judgment in their estimation. Third, noncurrent accruals are more visible than current accruals and require a longer lead time to manage prior to listing.

In summary, based on estimates derived using six discretionary accruals models, significant positive discretionary accruals in the pre-listing year are detected by models based on current accruals. These models yield higher positive discretionary accruals (medians and means) in Year -1 and

are statistically different from zero at the 5% level. In contrast, models based on total accruals do not exhibit means or medians that are statistically different from zero. However the models based on current accruals have a low explanatory power in comparison to the total accrual models. These results indicate that the hypothesis of pre-listing earnings management is supported only when models based on current accruals are used but more research is needed to account for the low explanatory power of the current accruals models.

Conclusion

Results of this research suggest that KSCC issuers use current accruals rather than total accruals to manage earnings in the pre-listing financial year. A possible reason for the choice of current accruals to manage earnings upward prior to listing is that vendors have greater discretion over the manipulation of current accruals (Teoh *et al.*, 1998b). Further, total accruals are more visible than current accruals and require a longer period of management before listing (Athanasakou *et al.* 2009; Dechow & Dichev 2002).

This research has a number of contributions and implications. First, this research extends the literature as the first to analyse earnings manage-

ment behaviour in Kuwaiti closed shareholding companies in the pre-listing period. This is a unique institutional setting that has not been examined in prior literature, where the focus has been on the earnings management behaviour around IPOs and SEOs. To the authors' knowledge, to date, no attention has been given to earnings management, IPOs, or offering secondary shares at listing on the KSE. There is only one study that aims to evaluate the specification and power of some discretionary accruals models in Kuwait conducted by Algharaballi and Albuloushi (2008).

Second, examining earnings management practices of listing KSCCs in Kuwait provides further evidence for the continued debate of the existence of the earnings management phenomenon in the emerging markets and contributes to knowledge on the role of the institutional setting on earnings management.

Third, these results will inform the Kuwaiti regulators about the incidence of earnings management when KSCCs list. The existence of positive earnings management and the transfer of wealth from new shareholders to vendors may encourage regulators to improve the quality of financial reporting by more closely monitoring compliance with the accounting stan-

Table 3
Discretionary Accrual Measures

Panel A. Modified Jones Model	Median DA	Mean DA	Minimum DA	Maximum DA	Number of firms with positive DA
Prelisting year (Year -1)	-0.0039	0.0429*	-0.43	0.86	34
Listing year (Year 0)	-0.0096	0.0109	-0.22	0.65	33
Post-listing year (Year + 1)	-0.0192	0.0132	-2.26	1.85	40
Panel B. Cash Flow Model based on Total Accruals	Median DA	Mean DA	Minimum DA	Maximum DA	Number of firms with positive DA
Prelisting year (Year -1)	0.0044	0.0359*	-0.38	0.72	36
Listing year (Year 0)	0.0252	0.0343**	-0.29	0.60	42
Post-listing year (Year + 1)	0.0155	0.0098	-1.79	1.87	37
Panel C. Adjusted Performance Model based on Total Accruals	Median DA	Mean DA	Minimum DA	Maximum DA	Number of firms with positive DA
Prelisting year (Year -1)	0.0244	0.0444*	-0.39	0.86	37
Listing year (Year 0)	0.0041	-0.0099	-0.40	0.32	36
Post-listing year (Year + 1)	0.0229 ⁺	0.019	-1.82	1.54	39
Panel D. Current Accruals Model	Median DA	Mean DA	Minimum DA	Maximum DA	Number of firms with positive DA
Prelisting year (Year -1)	0.0511 ⁺⁺	0.1225**	-0.42	1.17	43
Listing year (Year 0)	0.0129	-0.0138	-0.71	0.47	35
Post-listing year (Year + 1)	0.0243 ⁺	0.0330	1.81	1.10	42
Panel E. Cash Flow Model based on Current Accruals	Median DA	Mean DA	Minimum DA	Maximum DA	Number of firms with positive DA
Prelisting year (Year -1)	0.0480 ⁺⁺	0.1157**	-0.45	1.18	45
Listing year (Year 0)	0.0292	0.0044	-0.67	0.48	42
Post-listing year (Year + 1)	0.0271	0.0283	-1.52	1.10	40
Panel F. Adjusted Performance Model based on Current Accruals	Median DA	Mean DA	Minimum DA	Maximum DA	Number of firms with positive DA
Prelisting year (Year -1)	0.0684 ⁺⁺	0.1216**	-0.39	1.13	41
Listing year (Year 0)	0.0038	-0.0298	-0.80	0.45	35
Post-listing year (Year + 1)	0.0265 ⁺⁺	0.0367	-1.27	1.12	43

- All values in the following tables are reported as a fraction of average assets.

- ** and * indicate significant difference between the means and zero at the 5% and 10% levels respectively, based on the two-tailed *t*-test. ⁺⁺ and ⁺ indicate significant difference between the medians and zero at the 5% and 10% levels respectively, based on a two-tailed Wilcoxon signed-ranks test.

- Some outliers were detected for a number of KSCCs sample firms in the prelisting year. These outliers were as follows:
- One outlier was reported by the modified Jones model for 1997 with a value of .86. Exclusion of this outlier would change the mean and median to .0307 and -.0113 respectively.

- Two outliers were reported by the current accruals model for 1998 and 2003 with values of 1.17 and .96 respectively. Exclusion of these outliers would change the means and medians to .0940** and .0487⁺⁺ respectively.

- One outlier was reported by the cash flow model using total accruals for 1997 with a value of .72. Exclusion of this outlier would change the mean and median to .0257 and -.0036 respectively.

- Four outliers were reported by the cash flow model using current accruals, one for 1998 with a value of 1.18, one for 2003 with a value of .87, and two for 2005 with values of .90 and .79 respectively. Exclusion of these outliers would change the means and medians to .0647** and .0316⁺⁺ respectively.

- One outlier was reported by the adjusted performance model using total accruals for 1997 with a value of .86. Exclusion of this outlier would change the mean and median to .0321 and .0188 respectively.

- Two outliers were reported by the adjusted performance model using current accruals for 1998 and 2003 with values of 1.13 and .96 respectively. Exclusion of these outliers would change the means and medians to .0936** and .0585⁺⁺ respectively.

dards and encourage auditors to perform high-quality audits.

The use of the discretionary accruals models as a proxy for earnings management is considered a limitation in this study. These models have been often criticised in the literature for providing biased and noisy estimates of discretionary accruals (Kothari *et al.*, 2005; Guay *et al.*, 1996; Dechow *et al.*, 1995; Kang & Sivaramakrishnan 1995). Teoh *et al.* (1999) argue that, regardless of which model is used, the discretionary ac-

crual proxy can be noisy. In spite of these criticisms, the lack of a clearly superior model justifies the use of discretionary accruals in the earnings management literature. Therefore, the superior estimation approach to detecting earnings management remains an open empirical question that is beyond the scope of this study. This research contributes to the debate on the selection of a proxy for earnings management as it facilitates comparison of the models in different institutional settings.

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