



Managerial Finance

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Article information:

To cite this document:

Lokman Tutuncu, (2019) "Earnings management and performance of management buyouts", Managerial Finance, <https://doi.org/10.1108/MF-01-2018-0007>

Permanent link to this document:

<https://doi.org/10.1108/MF-01-2018-0007>

Downloaded on: 21 March 2019, At: 06:30 (PT)

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Earnings management and performance of management buyouts

Performance of
management
buyouts

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Received 8 January 2018
Revised 7 April 2018
Accepted 1 June 2018

Abstract

Purpose – The purpose of this paper is to examine the effect of pre-acquisition earnings management on the performance of private firm management buyouts.

Design/methodology/approach – The study examines 291 UK private firms acquired by their managers between 2004 and 2012. Earnings management is investigated by means of cross-sectional discretionary accruals models, and estimated discretionary accruals are regressed on performance changes in the three years following acquisition.

Findings – Management buyouts of private firms are preceded by earnings overstatement and followed by performance deterioration. Private equity sponsored firms engage less in earnings management and remain more profitable than non-sponsored buyouts. Upward earnings managers cease to outperform industry after second post-buyout year, while aggressive earnings managers do not outperform industry at all. Discretionary total accruals are inversely associated with performance changes in the three years after buyout, and explain over 4 per cent of the changes in performance.

Research limitations/implications – Pertinent to the utilisation of private firms and their exemption from publishing cash flow statement, the study relies on accrual-based models for tests of earnings management.

Originality/value – The paper contributes to the mergers and acquisitions literature and value creation debate in buyouts by providing the first tests of earnings management and post-acquisition performance in private firm management buyouts.

Keywords Earnings management, Performance, Mergers and acquisitions, Management buyout

Paper type Research paper

1. Introduction

Existing literature shows widespread earnings management before going private acquisitions (Perry and Williams, 1994; Wu, 1997; Fischer and Louis, 2008; Mao and Renneboog, 2015). The managerial self-interest inherent to MBO acquisitions provides sufficient incentives and forms an ideal setting for managers to exercise their discretion over accruals and understate earnings to pay an undervalued equity price. However, the current research has an exclusive focus on going private buyouts. This study investigates earnings management preceding private firm MBOs and follows up with post-acquisition performance investigation. The private firm choice is motivated by the fact that private firms are the largest source of buyouts worldwide (Strömberg, 2008). In the UK, private firms are subject to the same reporting requirements as public firms as they file annual reports with the registrar. EU fourth Directive Article 47(1) and 51(1), respectively, state that companies must make their annual reports publicly accessible and have their financial accounts audited. The fourth Directive also clarifies that member states can lighten publication requirements of annual accounts for small and medium sized companies and auditing exemptions can be introduced for small companies. In particular, private firms are exempt from publishing cash flow statement. These regulations enable us to utilise a fairly large sample of private firms for tests. Another motivating factor is the lack of event-based studies for private firms. Past research is either based on case studies (Howorth *et al.*, 2004), or multi-country private firm populations (Burgstahler *et al.*, 2006) absent a major corporate event.



Past research investigates relevance of an MBO acquisition to firm performance (Kaplan, 1989; Guo *et al.*, 2011; Jelic and Wright, 2011), and provides us ample evidence on earnings management around equity issues and following performance (Rangan, 1998; Teoh *et al.*, 1998a, b; Jo *et al.*, 2007). This study examines earnings management on and post-acquisition performance of MBOs. The sample comprises 291 UK private firm MBO acquisitions between 2004 and 2012. Earnings management tests are performed by means of four discretionary accruals models. Main results show that private firm managers overstate earnings prior to buyout. The year preceding acquisition coincides with large positive changes in total accruals and earnings. The performance analysis is carried out with 254 MBOs for which the data requirements are met. Performance, measured by return on assets (ROA), peaks in the first pre-acquisition year and begins to deteriorate after the first post-acquisition year. MBO firms outperform industry in the five years examined; however, performance drops to industry levels when private equity (PE) backed buyouts are excluded. On the other hand, PE sponsors invest in firms with already high levels of profitability and no significant performance improvement is observed after PE investment. Spearman correlation test and cross-sectional tests of discretionary total accruals (DTA) show that earnings management is negatively associated with performance changes and discretionary accruals is a significant determinant of changes in performance.

This study makes mainly two contributions to the existing research. First, it extends case study evidence of Howorth *et al.* (2004) and adds to the buyout literature by providing the first empirical analysis of earnings management in private firm acquisitions. It adds to the PE literature by providing an analysis of earnings management in PE-backed and non-PE-backed MBOs. Such an analysis is important to shed light on the role of PE funds in their target investments. While there is a large body of literature on corporate governance mechanisms of venture capital (VC) and PE firms relatively few studies examine their role in earnings management practices of their portfolio companies. The findings of this study are complementary to the existing evidence on earnings management in VC-backed initial public offerings (IPOs) (Morsfield and Tan, 2006; Hochberg, 2012; Wongsunwai, 2013) and the role of buyout sponsors in reverse leveraged buyouts (Chou *et al.*, 2006; Wang, 2010).

The second contribution is to the value creation debate surrounding buyouts. The negative relationship between post-acquisition performance and discretionary accruals is important in the sense that past studies might have overstated buyout performance due to their omission of earnings management factor and led to the erroneous conclusion that buyouts perform better following MBO deal. Taken in isolation, profitability ratios are not indicators of the real buyout performance and effects of earnings management must be controlled to draw conclusions. This study complements research on equity offerings, Rangan (1998) and Teoh *et al.* (1998b) in particular, and helps us develop a more insightful understanding of buyout performance.

The rest of the paper is organised as follows. Section 2 reviews the literature and develops hypotheses. Section 3 discusses data and methodology. Section 4 presents results of discretionary accruals estimations. Section 5 examines post-acquisition performance. Section 6 concludes the paper.

2. Literature and hypothesis development

2.1 Private firm management buyouts

Schulze *et al.* (2003) argue that governance mechanisms designed for public companies do not work as planned when firms are private. Private companies are often owned by a few individual blockholders in contrast with public companies where equity is dispersed across a large number of investors. This ownership concentration allows managers and shareholders to establish more personal relationships (Fama and Jensen, 1983) and to use

private communication channels to exchange information (Burgstahler *et al.*, 2006). Many private firms are run by families where the roles of managers and owners are not clearly separated. The unclarity of borders between managerial and ownership roles invalidates inferences based on the standard principal-agent relationship. However, different types of private firms might introduce different issues within the organisation. Howorth *et al.* (2004) report that information asymmetries can be strong in private non-family firms since they have separate ownership and management structures. In family firms, however, MBO acts as a viable solution to deal with succession issue, allowing the family to realise investment and maintain the independence of the company (Howorth *et al.*, 2004; Scholes *et al.*, 2008). In this case, the purchasing team is likely to have good relations with the family, which would minimise conflicts of interest. Their incentives to manage earnings for personal gain are then substantially reduced.

As many other private firm, MBOs typically have concentrated ownership and their managers are not under pressure of strict capital market scrutiny. In addition to other manipulative forces, however, MBO managers are likely to have additional incentives due to their acquisition of company. In private family firms where MBO acts as an acceptable succession tool (Howorth *et al.*, 2004); the friendly nature of the deal would substantially mitigate incumbent managers' incentives to manage earnings to their benefit. On the other hand, non-family owner-managers, who typically have large ownership stakes to sell, could be sufficiently motivated and powerful to overstate earnings to at the expense of acquiring team. Note that unlike going private MBOs, none of the parties are interested in understating earnings. In general, it is conjectured that considerations related to family succession issues and managers' personal wealth will offset incentives for to understate earnings. Since this study does not differentiate between different types of private firms (e.g. family, non-family, lone founder), segregation of their earnings management practices and predicting direction of earnings management is not possible. The following hypothesis is proposed:

H1. Managers of private firms do not understate earnings prior to management buyout.

2.2 PE sponsors

The literature presents us conflicting evidence regarding the role of PE in the process leading to the buyout and after the buyout transaction. While performance improvements are documented in the post-transaction firm (Kaplan, 1989; Jelic and Wright, 2011), the evidence related to their pre-buyout involvement is less positive. Acharya and Johnson (2010) show presence of large insider trading in PE-backed buyouts. Bargeron *et al.* (2008) find that PE funds pay lower acquisition premiums than other acquirers. They argue that this could be a reflection of their limited capacity to generate synergy gains and their limited time to extract returns; nonetheless it also raises the question of whether PE firms collaborate with target management in MBOs. With managers lacking the funds to acquire the total equity, the financial assistance of PE could benefit both parties in an undervalued acquisition.

On the other hand, PE firms are known to have a positive bias for better performing firms (Jelic and Wright, 2011). The performance provisions related to PE funding might lead managers to seek better performance to attract PE investment. Fischer and Louis (2008) argue that managers' desire for personal gain might be offset by their need for external financing. Their incentives for earnings management are related to their financial independence and personal ability to finance MBO deal. If managers cannot finance transaction with their personal wealth, they might manage earnings upwards to show their firm as an attractive investment option. However, PE firms would detect earnings management practice if their screening skills allow them to extract managers' private information. Moreover, PE firms are

repeat market players who have serious reputation considerations. Collaborating with managers to understate earnings would taint their credibility in the case of detection by regulators. European private firms report audited financial statements, which would increase the probability of detection and reduce manipulative incentives related to going private.

The evidence from IPOs suggests that effective monitoring and reputation concerns of VC firms constrain earnings management around IPO. For example, VC-backed IPO firms tend to show lower abnormal accruals and exhibit more conservative earnings management than comparable non-VC-backed IPOs (Morsfield and Tan, 2006; Hochberg, 2012). In the same vein, Wang (2010) finds that presence of buyout sponsors leads to improvement in discretionary accruals in reverse leveraged buyouts. One exception is Chou *et al.* (2006) who find that buyout sponsors engage in upwards earnings management prior to IPO exit. Wongsunwai (2013) and Brau and Johnson (2009) report negative association between earnings management and VC reputation. The opposing considerations related to managers incentives for personal gain, their need for external financing and reputation concerns of PE firms are expected to temper the incentives for earnings management in either direction. Therefore, the following hypothesis is proposed:

H2. PE-backed MBOs do not exhibit earnings management prior to buyout.

3. Data and methodology

3.1 Sample selection

The sample of research is constructed by the following procedure. First, MBOs completed between 2004 and 2012 are identified from Thomson One Banker (TOB) database. Deals are selected based on three criteria: acquisition target must be registered in the UK, target must be a private company and deal must be led by an incumbent management team. The search results in 1,004 MBOs. TOB provides deal announcement and completion dates, firm industry and SIC codes, deal value where available, and deal synopsis that gives information on bidders, presence of PE investor and the origin of acquisition target. Secondary buyouts, divestments, going private buyouts and management buy-ins are identified from deal synopsis and excluded from sample. These buyouts are excluded to obtain a homogenous private firm sample since mixing with other types of buyouts might change managerial behaviour. Finally, financial firms are excluded following the standard practice in corporate finance research. A total of 144 firms are dropped in this step. For the remaining 860 firms, financial statements are collected from Fame database. After firms with missing data are dropped, the final sample contains 291 MBOs.

Table I presents the distribution of MBO transactions and their deal values across years. The TOB population holds 860 deals, of which 291 are included in the cross-sectional tests. This number is larger than any of previous related studies. There is substantial deal clustering at the time referred to as the mega buyouts period. The highest number of deals is reported in 2006. Two of the sample years (2005, 2006) collectively account for more than 40 per cent of the sample buyouts. Over 80 per cent of deals are completed between 2004 and 2008 and the number of buyouts drops after 2008. This pattern is consistent with the sharp fall in worldwide buyout activity around 2008 (Gilligan and Wright, 2010). However, the sample represents a good portion of the UK population, comprising 64 per cent of the aggregate transaction value where deal information is disclosed. In terms of total number of private firm buyouts, it represents 34 per cent of the MBO population.

3.2 Measuring accruals and model selection

This study follows the balance sheet approach where total accruals are computed as non-cash working capital minus depreciation expense. This definition is the same as in Perry and Williams (1994), Dechow *et al.* (1995) and Burgstahler *et al.* (2006). It is argued that current

| Year | Number of deals | | | Transaction value | | Sample as % of population | Performance of management buyouts |
|-------|-------------------------|---------------------|---------------------------|-------------------|--------------|---------------------------|---|
| | Population (<i>n</i>) | Sample (<i>n</i>) | Sample as % of population | Population (\$m) | Sample (\$m) | | |
| 2004 | 147 | 29 | 20 | 4,521 | 3,157 | 70 | <hr/> Table I. Distribution of deals across years and value |
| 2005 | 150 | 54 | 36 | 2,308 | 968 | 42 | |
| 2006 | 154 | 64 | 42 | 2,258 | 1,126 | 50 | |
| 2007 | 128 | 51 | 40 | 2,606 | 2,457 | 94 | |
| 2008 | 101 | 34 | 34 | 769 | 486 | 63 | |
| 2009 | 51 | 9 | 18 | 14 | ND | – | |
| 2010 | 52 | 19 | 37 | 177 | 89 | 50 | |
| 2011 | 40 | 15 | 38 | 367 | 139 | 38 | |
| 2012 | 37 | 16 | 43 | 460 | 258 | 57 | |
| Total | 860 | 291 | 34 | 13,480 | 8,681 | 64 | |

Notes: 244 MBOs in the population and 104 MBOs in the final sample disclosed deal values. ND indicates that sample MBOs in the related year did not disclose deal values

accruals are more relevant when measuring year-to-year discretion since non-current portion of discretionary accruals may not reflect the recent accounting practices (Jones, 1991; Teoh *et al.*, 1998b). Kothari *et al.*'s (2005) performance modification is also useful to correct misspecifications in cases that companies are likely to exhibit extreme financial performance. Therefore, working capital accruals (WCA) and performance-adjusted accruals are also used in the tests in addition to total accruals. Note that cash flow-based models cannot be tested since private firms are not required to publish cash flow statements. Finally, original Jones time-series model is used; however, this results in a significant drop in the number of firm observations due to extensive data requirements.

Tests are conducted for the two years preceding buyout. For cross-sectional tests, portfolios of private industry firms matched on two-digit SIC codes are used to estimate parameters. The sample contains 52 unique two-digit industries. The top three two-digit industry groups with the largest number of MBOs (SIC code 50 (whole sale-durable goods), SIC code 73 (business services) and SIC code 87 (engineering, accounting, research, management and related services)) account for about one-third of the sample. In total, 225 unique regressions are performed to obtain parameters. In the DTA model, total accruals are a function of inverse lagged assets, revenues and tangible assets:

$$\frac{TA_{ijt}}{Assets_{ijt-1}} = \beta_{1jt} \left(\frac{1}{Assets_{ijt-1}} \right) + \beta_{2jt} \left(\frac{\Delta REV_{ijt}}{Assets_{ijt-1}} \right) + \beta_{3jt} \left(\frac{PPE_{ijt}}{Assets_{ijt-1}} \right) + \varepsilon_{ijt}. \quad (1)$$

This model is estimated with OLS regression on the portfolios of control firms. Obtained parameters serve to compute MBO discretionary accruals as follows:

$$DTA_{jt} = \frac{TA_{jt}}{Assets_{jt-1}} \left[\beta_{1jt} \left(\frac{1}{Assets_{jt-1}} \right) + \beta_{2jt} \left(\frac{\Delta REV_{jt}}{Assets_{jt-1}} \right) + \beta_{3jt} \left(\frac{PPE_{jt}}{Assets_{jt-1}} \right) \right]. \quad (2)$$

WCA are computed as non-cash working capital, and can be obtained by subtracting depreciation from total accruals. Since depreciation represents a long-term accrual, its removal leaves current accruals in the equation. PPE variable is dropped because it is associated with depreciation. The model used to estimate parameters is as follows:

$$\frac{WCA_{ijt}}{Assets_{ijt-1}} = \beta_{1jt} \left(\frac{1}{Assets_{ijt-1}} \right) + \beta_{2jt} \left(\frac{\Delta REV_{ijt}}{Assets_{ijt-1}} \right) + \varepsilon_{ijt}. \quad (3)$$

Kothari *et al.* (2005) suggest two ways of performance adjustment. The first one involves matching each MBO on a firm with the same industry and nearest profitability. The second one is carried out by augmenting the original regression by an additional profitability (ROA) variable. This study uses augmented cross-sectional regression:

$$\frac{TA_{ijt}}{Assets_{ijt-1}} = \beta_{1jt} \left(\frac{1}{Assets_{ijt-1}} \right) + \beta_{2jt} \left(\frac{\Delta REV_{ijt}}{Assets_{ijt-1}} \right) + \beta_{3jt} \left(\frac{PPE_{ijt}}{Assets_{ijt-1}} \right) + \beta_{4jt} ROA_{ijt} + \varepsilon_{ijt}. \quad (4)$$

Finally, DTA are re-estimated by Jones' (1991) pooled time-series model. This model utilises 101 MBOs and their estimation period ranges from 4 to 8 years.

4. Tests of earnings management

4.1 Cross-sectional and time-series tests

The results of discretionary accruals tests are presented in Table II. Mean and median discretionary accruals in year -1 are positive and significant, with the exception of median time-series accruals. Discretionary accruals in year -2 are generally negative, smaller in magnitude and insignificant. The drop in significance for the time-series model can be attributed to the short estimation windows used in the model as well as the low observation count in accruals tests due to data limitations. The results show strong upward management preceding private firm MBOs, indicating that private firm managers have stronger incentives to make upward adjustment than their potential wealth benefits from downward adjustment. This result is consistent with *H1*. A possible explanation for this pattern could be such that private firm owner-managers can reap higher benefits by overstating earnings, especially if they are selling their shares in the acquisition.

To examine the effect of PE involvement in earnings management, the sample is stratified based on PE sponsor status. Slightly less than half of the sample firms has PE sponsors. Table III displays the results of cross-sectional tests for PE-backed and non-PE-backed subsamples. Time-series tests are not presented due to insufficient number of observations and powerless test statistics resulting from short parameter estimation windows. Consistent with *H2*, PE-backed buyouts do not show significant earnings management in year -1 . Only mean DTA and median discretionary WCA are weakly significant. The non-PE-backed sample, on the other hand, shows significant upwards management in all models, with the exception of performance-adjusted mean discretionary accruals. The results lend support for *H2* that PE-backed buyouts do not engage in earnings management, highlighting the differences in motivations, PE firms' continuing involvement in the markets and their reputation concerns. The findings also support existing evidence from IPOs that PE firms constrain earnings management (Morsfield and Tan, 2006; Wongsunwai, 2013).

4.2 Additional accruals tests

There might be concerns associated with private company regulations that previous results might not be extrapolated. For example, EU member states might introduce disclosure and audit exemptions for small and medium sized firms. Since previous studies examine going private MBOs that do not face such exemptions, it might be useful to repeat the tests excluding these firms. In addition, there might be concerns about the large differences between the firm observations of control portfolios. Finally, a difference-in-differences (DID) estimation is used to address the potentially false hypothesis that discretionary accruals must be statistically equal to zero to show no earnings management. DID estimation enables us to control for the non-buyout firm discretionary accruals and show the margin of the sample relative to firms in the same year and industry. The results of the experiments are presented in Table IV.

| | Year - 1 | | | Year - 2 | | | | |
|----------|------------------|------------------|-----------------|----------------|-----------------|------------------|-----------------|-----------------|
| | DTA | WCA | PADJ | TIMS | DTA | WCA | PADJ | TIMS |
| Mean | 0.538*** (3.485) | 0.032** (2.345) | 0.024** (2.268) | 0.059* (1.944) | 0.622** (2.486) | -0.121* (-1.885) | -0.008 (-0.168) | -0.002 (-0.043) |
| Median | 0.037*** (3.126) | 0.022*** (2.986) | 0.012** (2.435) | 0.034 (1.358) | -0.032 (-0.986) | -0.001 (-0.958) | -0.016 (-0.132) | -0.024 (-0.459) |
| SD | 2.164 | 0.296 | 0.193 | 0.311 | 3.582 | 1.024 | 0.223 | 0.339 |
| Min. | -3.739 | -0.944 | -0.937 | -0.679 | -4.488 | -5.098 | -1.031 | -1.041 |
| Max. | 13.051 | 2.886 | 0.956 | 1.091 | 24.485 | 6.329 | 1.717 | 1.428 |
| <i>n</i> | 291 | 291 | 291 | 101 | 207 | 207 | 206 | 63 |

Notes: DTA, WCA, PADJ, and TIMS stand for discretionary total accruals, working capital accruals, performance-adjusted accruals, and time-series accruals, respectively. Significance is tested by two-tailed *t*-test and Wilcoxon sign rank test. *t* and *z* values are in parentheses. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively

Performance of
management
buyoutsTable II.
Discretionary accruals

MF

| | DTA | Year - 1 WCA | PADJ | DTA | Year - 2 WCA | PADJ |
|------------------|------------------|-----------------|----------------|-----------------|-----------------|-------------------|
| <i>PE-backed</i> | | | | | | |
| Mean | 0.305* (1.924) | 0.046 (1.268) | 0.031 (1.427) | 0.328 (1.121) | -0.007 (-0.051) | -0.267** (-1.982) |
| Median | 0.016 (1.322) | 0.021* (1.896) | 0.01 (0.458) | -0.034 (-0.896) | -0.032 (-0.752) | -0.002 (-0.562) |
| <i>n</i> | 140 | 140 | 140 | 106 | 106 | 106 |
| <i>Non-PE</i> | | | | | | |
| Mean | 0.753*** (3.568) | 0.017** (2.324) | 0.018 (1.142) | 0.931** (2.121) | -0.009 (-0.251) | 0.031 (0.956) |
| Median | 0.072*** (3.284) | 0.013** (2.205) | 0.025* (1.786) | -0.031 (-1.027) | 0.001 (0.214) | 0.003 (0.286) |
| <i>n</i> | 151 | 151 | 151 | 101 | 101 | 100 |

Table III.
Discretionary
accruals by private
equity status

Notes: *t* and *z* values are in parentheses. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively

| | Total accruals | Working capital | Perf. adjusted |
|--|----------------|-----------------|----------------|
| <i>Panel A: excluding MBOs with audit exemption</i> | | | |
| Mean | 0.542*** | 0.032* | 0.025** |
| Median | 0.038*** | 0.022*** | 0.012** |
| <i>n</i> | 289 | 289 | 289 |
| <i>Panel B: MBOs registered as full accounts disclosure</i> | | | |
| Mean | 0.675*** | 0.032* | 0.029** |
| Median | 0.045*** | 0.028*** | 0.012** |
| <i>n</i> | 226 | 226 | 226 |
| <i>Panel C: excluding portfolios with fewer than 50 observations</i> | | | |
| Mean | 0.540*** | 0.031* | 0.023** |
| Median | 0.037*** | 0.022*** | 0.012** |
| <i>n</i> | 289 | 289 | 289 |
| <i>Panel D: excluding bottom and top portfolio observation deciles</i> | | | |
| Mean | 0.636*** | 0.046** | 0.032** |
| Median | 0.047*** | 0.026*** | 0.021*** |
| <i>n</i> | 231 | 231 | 231 |
| <i>Panel E: difference-in-differences estimation</i> | | | |
| Mean | -0.031 | 0.054* | 0.012 |
| Median | 0.021** | 0.010** | 0.024** |
| <i>n</i> | 291 | 291 | 291 |

Table IV.
Additional
accruals tests

Notes: Statistics are for year - 1. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively

Panel A reports the statistics for MBOs filing audited accounts. Panel B reports statistics for MBOs that report full accounts from the date of buyout to the last year they filed accounts. This aims to obtain a more homogenous sample in terms of audit and disclosure. Panel C excludes the MBOs matched on smallest portfolios that are likely to yield weak tests and Panel D presents the results excluding the bottom and top portfolio deciles. DID results are presented in Panel E. Since prior tests do not show earnings management in year -2, only results for year -1 are presented. Consistent with the previous findings, all models yield positive and significant discretionary accruals suggesting that private firm MBOs are preceded by upwards earnings management. DID estimation also shows that private buyouts have larger median discretionary accruals relative to non-buyout firms. However, DID discretionary accruals are noticeably smaller than previous estimations, and DID mean discretionary accruals are insignificant at conventional levels.

Finally, propensity score matching (PSM) method is used to estimate earnings management. Contrary to dimension-to-dimension matching applied in the previous cross-sectional models, PSM controls for multiple dimensions to select a matching firm with similar characteristics (Li and Prabhala, 2005). The procedure involves estimation of a probit regression to predict the likelihood of becoming a buyout target, where dependent variable is a dummy that equals 1 for sample MBOs and 0 for non-buyouts, and independent variables are sales growth, size (natural logarithm of assets), ROA and asset turnover (sales/assets). The regression is executed in each calendar year instead of pooling the data. After the balancing property of regression is satisfied, for each MBO firm a non-buyout with the nearest propensity score is selected with replication. The PSM discretionary accruals are calculated as MBO firm DTA minus PSM matched firm DTA. The results presented in Table V show that MBOs overstate earnings prior to transaction. The results related to the provision of PE backing also suggest that PE-backed MBOs engage in less earnings management relative to non-PE-backed MBOs. Overall, findings are consistent with prior estimations and private firm MBOs conclusively exhibit upwards earnings management.

5. Earnings management and MBO performance

The performance dimension is important to demonstrate that buyouts can create value and offer an above-market return to their investors. Prior buyout studies do not investigate the link between earnings management and performance. However the research on IPOs and seasoned equity offerings (SEO) documents that earnings management around equity issues has substantial impact on subsequent firm performance (Teoh *et al.*, 1998a, b; Rangan, 1998; Li *et al.*, 2006; Jo *et al.*, 2007). The negative association between discretionary accruals and performance is well documented (Rangan, 1998; Teoh *et al.*, 1998b). The income-increasing earnings management around share issues results in post-issue accrual reversals and leads to the deterioration of operating performance and returns in the following periods. The effects of earnings manipulation are also manifested in the subsequent delisting method, where IPOs associated with conservative earnings management are more likely to be merged or acquired, and IPOs associated with aggressive earnings management are more likely to delist involuntarily from markets (Li *et al.*, 2006). In line with the studies above, earnings management is expected to be inversely related to subsequent buyout performance. Since accrual management effectively means shifting income from one period to another, a sample of firms inflating earnings should underperform in the following periods. Hence, it is hypothesized that:

H3. Aggressive earnings management results in performance deterioration.

H4. Discretionary accruals are negatively associated with performance changes after buyout.

5.1 Sample industry distribution

Table VI reports industry characteristics of the performance sample. Panel A displays detailed industry statistics and Panel B shows industries based on Gompers *et al.*'s (2008) VC classification. Both panels show that the sample is clustered by industry, i.e., computer equipment and services industries account for over 18 per cent of the sample.

| | Full Sample | PE-backed | Non-PE |
|----------|------------------|----------------|-----------------|
| Mean | 0.318*** (3.458) | 0.237* (1.725) | 0.393** (2.545) |
| Median | 0.048** (2.247) | 0.051 (1.264) | 0.043 (1.426) |
| <i>n</i> | 290 | 140 | 150 |

Notes: *t* and *z* values are in parentheses. *, **, *** Significant at 10, 5 and 1 per cent levels, respectively

Table V.
Propensity score
matched discretionary
accruals

MF

| Industry | 2-digit SIC codes | Frequency | % |
|--|--|-----------|-------|
| Oil and gas | 13 | 3 | 1.18 |
| Food products | 20 | 13 | 5.12 |
| Paper and paper products | 25, 26, 27 | 16 | 6.30 |
| Chemical products | 28 | 3 | 1.18 |
| Manufacturing | 30, 31, 32, 33, 34 | 14 | 5.51 |
| Computer equipment and services | 35, 73 | 46 | 18.11 |
| Electronic equipment | 36 | 6 | 2.36 |
| Transportation | 37, 39, 42, 45 | 15 | 5.91 |
| Scientific instruments | 38 | 7 | 2.76 |
| Communications | 48 | 4 | 1.57 |
| Electric, gas and sanitary services | 49 | 5 | 1.97 |
| Durable goods | 50 | 18 | 7.09 |
| Non-durable goods | 51 | 7 | 2.76 |
| Retail | 53, 54, 56, 57, 59 | 18 | 7.09 |
| Eating and drinking establishments | 58 | 3 | 1.18 |
| Entertainment services | 70, 78, 79 | 5 | 1.97 |
| Health | 80 | 2 | 0.78 |
| All others | 7, 8, 15, 16, 17, 22, 23, 47, 55, 65, 67, 75, 76, 82, 83, 87 | 69 | 27.16 |
| Total | | 254 | 100 |
| Table VI Panel B: industry distribution by Gompers <i>et al.</i> (2008) classification | | | |
| Industry | 2-digit SIC Codes | Frequency | % |
| Internet and Computers | 50, 73 | 11 | 4.33 |
| Biotech and Healthcare | 28, 38, 80, 83 | 11 | 4.33 |
| Communications and Electronics | 27, 36, 38, 48, 50, 73, 78, 87 | 30 | 11.82 |
| Consumer | 8, 20, 22, 23, 25, 27, 31, 32, 34, 39, 50, 51, 54–59, 73, 76 | 58 | 22.83 |
| Business and Industrial | 7, 15–17, 26, 28, 30, 32–35, 37–39, 42, 45, 50, 51, 79, 87 | 78 | 30.71 |
| Energy | 13, 36, 49 | 11 | 4.33 |
| Business Services | 45, 67, 73, 75, 82, 83, 87 | 49 | 19.29 |
| Others | 47, 65, 70, 73 | 6 | 2.36 |
| Total | | 254 | 100 |

Table VI.
Industry distribution
of management
buyouts –
performance sample

VC classification reveals clustering around three industry groups. Consumer, business and industrial, and business services industries account for over 73 per cent of the sample, compared to 65 per cent in Jelic and Wright (2011). This pattern of buyout concentration around business and service industries is consistent with the UK (Weir *et al.*, 2015; Jelic, 2011) and worldwide market trends.

5.2 Net income performance of MBOs

Since results in the previous section show an upwards earnings management pattern, the expected income-decreasing effect of future accruals reversals will pull earnings down. To examine whether upwards or downwards earnings management introduce distinct performance outcomes, sample is stratified by the direction of earnings management. Sample firms are also ranked by magnitude of discretionary accruals into aggressive and conservative quartiles. Each quartile contains 64 firms. Finally, Spearman rank correlation and cross-sectional regression tests are performed to examine the link between earnings management and post-buyout performance. Note that expected sign of relation between performance and discretionary accruals is negative without regard to the direction of earnings management.

Table VII reports net income performance in the six years around MBO transaction. Performance analysis is limited to three post-buyout years for mainly two reasons. First, most of the corporate governance and performance changes or improvements occur in the first three years following buyout (Guo *et al.*, 2011). Second, buyout sponsors are more

| Year | -2 | -1 | 0 | 1 | 2 | 3 | Performance of management buyouts |
|--|----------|----------|----------|----------|-----------|-----------|-----------------------------------|
| <i>Panel A: Performance of MBOs</i> | | | | | | | |
| Unadjusted | 0.077*** | 0.089*** | 0.105*** | 0.072*** | 0.079*** | 0.067*** | |
| Industry adjusted | -0.009 | 0.011** | 0.029*** | 0.011*** | 0.009*** | 0.012*** | |
| <i>n</i> (raw:adjusted) | 238:180 | 253:253 | 237:237 | 214:212 | 186:185 | 161:158 | |
| <i>Panel B: Performance changes in MBOs</i> | | | | | | | |
| Unadjusted | - | 0.009 | 0.011* | -0.012** | -0.014*** | -0.016*** | |
| % negative | - | 47 | 46 | 57 | 61 | 59 | |
| Industry adjusted | - | 0.021*** | 0.010** | -0.005 | -0.007** | -0.005 | |
| % negative | - | 41 | 45 | 54 | 58 | 53 | |
| <i>Panel C: Performance by PE backing</i> | | | | | | | |
| Unadjusted earnings | | | | | | | |
| PE-backed | 0.107*** | 0.108*** | 0.130*** | 0.142*** | 0.122*** | 0.092*** | |
| Non-PE-backed | 0.058*** | 0.078*** | 0.075*** | 0.058*** | 0.052*** | 0.044*** | |
| M-W <i>p</i> -value | 0.022 | 0.010 | 0.025 | 0.001 | 0.018 | 0.004 | |
| <i>n</i> (PE:non-PE) | 115:123 | 121:132 | 113:124 | 99:115 | 85:101 | 77:84 | |
| Industry-adjusted earnings | | | | | | | |
| PE-backed | 0.005 | 0.020*** | 0.059*** | 0.078*** | 0.060*** | 0.050*** | |
| Non-PE-backed | -0.015 | 0.002 | 0.012 | -0.001 | -0.002 | 0.000 | |
| M-W <i>p</i> -value | 0.179 | 0.031 | 0.023 | 0.002 | 0.036 | 0.005 | |
| <i>n</i> (PE:non-PE) | 91:89 | 121:132 | 113:124 | 98:114 | 85:100 | 76:82 | |
| <i>Panel D: performance changes by PE backing</i> | | | | | | | |
| Unadjusted earnings changes | | | | | | | |
| PE-backed | - | 0.011 | 0.027 | -0.012 | -0.032*** | -0.013 | |
| Non-PE-backed | - | 0.006 | 0.007 | -0.014** | -0.003 | -0.017*** | |
| M-W <i>p</i> -value | - | 0.751 | 0.555 | 0.528 | 0.054 | 0.569 | |
| <i>Industry-adjusted earnings changes</i> | | | | | | | |
| PE-backed | - | 0.019** | 0.021** | -0.004 | -0.028** | -0.012 | |
| Non-PE-backed | - | 0.026** | 0.004 | -0.006 | -0.002 | -0.002 | |
| M-W <i>p</i> value | - | 0.595 | 0.546 | 0.556 | 0.081 | 0.686 | |
| Notes: This table presents median net income performance of management buyouts from year -2 to year +3 relative to buyout transaction year (year 0 is acquisition year). The unadjusted performance is measured as net income divided by beginning assets. Industry-adjusted performance is measured as net income divided by beginning assets minus industry median. Performance changes are computed as year-to-year changes in unadjusted and industry-adjusted net income divided by beginning assets. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively | | | | | | | |

Table VII.
Operating performance around management buyouts

likely to exit after the first three years. Average holding period in the UK for PE-backed buyouts is around 3.5 years (Nikoskelainen and Wright, 2007; Jelic, 2011). Hence, the first three years would suffer less from survivorship bias and offer a better representation of the performance. Top two panels display medians for the entire sample and bottom two panels present performance by PE sponsor status. Year 0 is the buyout year and year -1 is the first year before buyout where earnings management activity is observed. Performance is measured in two ways: raw operating performance which is calculated as net income divided by beginning assets and industry-adjusted net income performance. Reported statistics represent median performance for the relevant samples and years. Since scaling income by lagged assets can inflate performance, tests are repeated using net income scaled by current assets, only to find similar results.

Observed patterns for the entire sample suggest improvements prior to buyout and slight deterioration after. Unadjusted performance rises from 7.7 to 8.9 per cent in year -1. Industry-adjusted performance observes a similar improvement from year -2 to -1.

MF

Performance peaks in year 0 (10.5 per cent unadjusted and 2.9 per cent industry adjusted), then begins to decline in year 1 before eventually reverting to pre-buyout levels in year 3. Performance improvements before buyout are significant as shown by industry-adjusted change of 2.1 per cent. The percentage of firms with negative performance changes rises from 41 per cent in year -1 to 58 per cent in year 2. The post-buyout changes are significant at conventional levels. Note that despite decreasing levels of net income, MBOs continue to outperform industry peers in all post-buyout years.

PE-sponsored and non-sponsored buyouts have substantial performance differences. Sponsored MBOs are more profitable throughout and about two times more profitable than non-sponsored MBOs in the post-buyout period. Unadjusted performance of PE-sponsored sample peaks at year 1 while non-PE sample performance monotonically declines following buyout. More importantly, industry-adjusted performance of PE-backed buyouts shows improvements and significantly outperforms industry from year -1 to year 3 while non-backed buyouts remain at the same industry levels. Mann-Whitney test statistics show that performance differences between medians are significant. It appears that better-than-industry performance is driven solely by PE-sponsored buyouts. The reported performance changes in the bottom panel exhibit a similar pattern. Industry-adjusted performance increases in the earnings management year by 1.9 per cent and 2.6 per cent and declines following buyout. The differences in performance changes between PE-backed and non-backed samples are not significant at conventional levels. In sum, PE sponsorship is associated with higher performance; however it does not prevent the deterioration of performance in post-buyout period.

The performance of MBOs stratified by the direction and magnitude of earnings management are reported in Table VIII. The results are based on DTA; however, similar patterns are observed in unreported tests based on WCA and performance-adjusted accruals. Panel A suggests that upwards earnings managers tend to be more profitable prior to buyout and less profitable afterwards. The opposite pattern is true for the downwards earnings managers. The downwards subsample registers significant performance improvements from

| Year | -2 | -1 | 0 | 1 | 2 | 3 |
|--|----------|----------|----------|----------|----------|----------|
| <i>Panel A: performance around management buyout</i> | | | | | | |
| Unadjusted earnings | | | | | | |
| Downward | 0.047*** | 0.071*** | 0.107*** | 0.068*** | 0.099*** | 0.073*** |
| Upward | 0.103*** | 0.101*** | 0.092*** | 0.077*** | 0.065*** | 0.061*** |
| M-W <i>p</i> -value | 0.002 | 0.056 | 0.917 | 0.962 | 0.204 | 0.392 |
| Industry-adjusted earnings | | | | | | |
| Downward | -0.028* | 0.001 | 0.042*** | 0.012** | 0.039*** | 0.030*** |
| Upward | 0.014* | 0.028*** | 0.025*** | 0.010*** | 0.004** | 0.004 |
| M-W <i>p</i> -value | 0.016 | 0.031 | 0.938 | 0.925 | 0.329 | 0.298 |
| <i>Panel B: Performance of aggressive and conservative quartiles</i> | | | | | | |
| Unadjusted earnings | | | | | | |
| Conservative | 0.069*** | 0.067*** | 0.083*** | 0.077*** | 0.102*** | 0.081*** |
| Aggressive | 0.101*** | 0.101*** | 0.142*** | 0.061*** | 0.076*** | 0.062*** |
| M-W <i>p</i> -value | 0.453 | 0.424 | 0.161 | 0.081 | 0.263 | 0.422 |
| Industry-adjusted earnings | | | | | | |
| Conservative | 0.003 | 0.012 | 0.027** | 0.023*** | 0.051** | 0.028*** |
| Aggressive | 0.001 | -0.002 | 0.032*** | -0.007 | 0.001 | 0.006 |
| M-W <i>p</i> -value | 0.745 | 0.277 | 0.943 | 0.021 | 0.012 | 0.123 |

Table VIII.

Performance by direction and magnitude of earnings management

Notes: MBOs with negative discretionary total accruals are classified as downwards and MBOs with positive discretionary total accruals are classified as upwards earnings managers. Conservative and aggressive quartiles contain MBOs with the smallest and largest absolute discretionary total accruals in year -1, respectively. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively

pre- to post-buyout period. While they underperform industry by a median of 2.8 per cent two years before buyout, by the end of year 3 they outperform industry by a median of 3 per cent. Upwards subsample performance, on the other hand, declines to industry levels in year 3. The results presented in Panel B for aggressive and conservative earnings management quartiles are consistent with prior evidence that aggressive earnings managers subsequently experience performance deterioration (Teoh *et al.*, 1998b). Unadjusted earnings for aggressive quartile MBOs are around 10 per cent of assets which is then reduced to just over 6 per cent in the year 3. In contrast, conservative quartile MBOs register higher earnings in all post-buyout years. More importantly, aggressive earnings managers fail to perform better than industry after buyout while conservative earnings managers outperform the industry in all post-buyout years. The performance differences between aggressive and conservative quartiles are significant in year 1 and year 2.

Overall, the performance analysis offers support to the proposition that earnings management prior to buyout influences performance after buyout. In the specific context of private firm MBOs, accrual reversals following upwards earnings management give result to the deterioration in performance. *H3* is also supported. Upwards earnings managers outperform industry only for two years while aggressive earnings managers do not outperform the industry at all. The results so far imply a negative relationship between earnings management and performance. OLS regressions are conducted in the next sub-section to examine this relationship (*H4*).

5.3 Regression of post-buyout performance and discretionary accruals

Spearman rank correlations between discretionary accruals and performance changes (ΔROA) are reported in Table IX. Panels A and B display unadjusted and industry-adjusted correlations, respectively. Correlations in both panels are consistent, discretionary accruals are negatively correlated with performance changes in all years; with varying degrees of significance. The correlations with DTA are significant in all years, while correlations with performance-adjusted discretionary total accruals (PADJ) are only significant in year 1 and correlations with WCA are not significant. Therefore, it is concluded that only DTA predict the long-term buyout performance.

Prior research documents a negative relation between earnings management and performance in equity issues (Rangan, 1998; Teoh *et al.*, 1998b; Jo *et al.*, 2007). Consistent with this literature, *H4* posits that earnings management is negatively associated with post-buyout performance changes. To examine this prediction, cross-sectional regressions are estimated in each of the three post-buyout years. The performance is modelled as a function of DTA and controls. Following single and multiple regression models are estimated:

$$\Delta ROA_t = \alpha + b_1 DTA + \varepsilon_{it}, \quad (5)$$

| | ΔROA_0 | ΔROA_1 | ΔROA_2 | ΔROA_3 |
|--|----------------|----------------|----------------|----------------|
| <i>Panel A: Correlations with unadjusted net income</i> | | | | |
| DTA ₋₁ | -0.0538 | -0.1388** | -0.1322* | -0.1304*** |
| WCA ₋₁ | -0.1263 | -0.0946 | -0.0477 | -0.0444 |
| PADJ ₋₁ | -0.2640*** | -0.0874* | -0.0560 | -0.0924 |
| <i>Panel B: Correlations with industry-adjusted net income</i> | | | | |
| DTA ₋₁ | -0.0384 | -0.0962** | -0.0678** | -0.0561*** |
| WCA ₋₁ | -0.1126 | -0.1049 | -0.0737 | -0.0433 |
| PADJ ₋₁ | -0.1989*** | -0.2367** | -0.0038 | -0.1105 |

Notes: *, **, ***Significant at 10, 5 and 1 per cent levels, respectively

Table IX.
Spearman rank order
correlations of
discretionary accruals

Panel A of Table X reports single regressions. The dependent variables are unadjusted and industry-adjusted changes in ROA relative to year -1 . DTA is the common independent variable in all regressions. The first and last three columns display results for unadjusted and industry-adjusted ROA changes, respectively. Consistent with previous studies, the results demonstrate that DTA is negatively associated with post-buyout performance changes. In Panel B, several other variables are controlled following the prior literature. The estimated model is:

$$\Delta ROA_t = \alpha + b_1 DTA + b_2 PE + b_3 SGRO + b_4 SIZE + b_5 g1 + b_6 g2 + b_7 g3 + \varepsilon_{it}, \quad (6)$$

where ΔROA_t = raw and industry-adjusted net income change in year t ; $t = 1, 2, 3$. DTA = discretionary total accruals in year -1 ; PE = dummy variable equals 1 if MBO is PE-backed, and 0 otherwise; SGRO = percentage growth in sales from year -2 to -1 , included following Rangan (1998); SIZE = inflation adjusted log of total sales in year -1 ; $g1$, $g2$ and $g3$ are industry dummies for buyouts in high-tech industries defined as in Gompers *et al.* (2008).

The model R^2 ranges from 7.68 to 16.7 per cent. The main variable of interest DTA maintains a negative sign and remains statistically significant in all regressions. Consistent with the findings in univariate performance analysis, PE is not significantly associated with performance changes. To assess the economic significance of results, the effect of one standard deviation change in DTA on dependent variable is calculated by multiplying its coefficient with its sample standard deviation following Rangan (1998) and Teoh *et al.* (1998b). The sample standard deviations and economic impact of DTA are presented in Table XI. The results show a consistent trend of increasing negative impact on earnings from year 1 to year 3. For example, accruals reversals are associated with a 2.66 per cent negative impact on raw performance changes in the first year following buyout, which rises to a cumulative 4.75 per cent impact in the third year. For industry-adjusted income, discretionary accruals are associated with 2.29 per cent decline in performance, rising to 4.35 per cent in the third year.

The implied economic impact of discretionary accruals in univariate and multivariate tests are consistent and quantitatively similar. These results are economically important in the sense that earnings management explains more than 4 per cent of the performance changes in the three years following MBO, which is the approximate improvement or deterioration in earnings reported by recent buyout studies (e.g. Boucly *et al.*, 2011). Prior literature also documents that most of the improvements in earnings are limited to first two or three years subsequent to buyout (Kaplan, 1989; Smith, 1990; Opler, 1992). Therefore findings provide useful insights into post-transaction performance of buyouts. In unreported multivariate regressions with changes in ROA in year 0 as the dependent variable, DTA also carries a negative sign; however, which is not significant at conventional levels. Thus the coefficients in year 0 do not have economic importance.

In sum, the results show that upwards earnings management in the immediate year before MBO coincides with increases in net income. Consistent with an accrual reversals explanation, buyout transactions are followed by deterioration in performance in the three subsequent years. Earnings management proxied by DTA is a significant determinant of post-buyout performance changes. Given the fact that prior studies document performance improvements subsequent to going private buyouts (Kaplan, 1989; Boucly *et al.*, 2011; Guo *et al.*, 2011) and earnings understatement prior (Perry and Williams, 1994), the findings suggest that income-decreasing earnings management may partly account for post-buyout performance improvements.

| Variable | ΔROA_1 | ΔROA_2 | ΔROA_3 | $\Delta IROA_1$ | $\Delta IROA_2$ | $\Delta IROA_3$ |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <i>Panel A: Univariate regressions</i> | | | | | | |
| DTA | -0.014*** (-3.32) | -0.015*** (-3.75) | -0.022*** (-2.26) | -0.012*** (-2.98) | -0.012*** (-3.32) | -0.012*** (-2.09) |
| R^2 (%) | 2.59 | 1.78 | 8 | 1.89 | 1.27 | 6.51 |
| F | 11.05*** | 14.03*** | 5.09** | 8.09*** | 11*** | 4.38** |
| n | 214 | 186 | 161 | 212 | 185 | 158 |
| <i>Panel B: Multivariate regressions</i> | | | | | | |
| Dependent variable: ΔROA | | | | | | |
| | ΔROA_1 | ΔROA_2 | ΔROA_3 | $\Delta IROA_1$ | $\Delta IROA_2$ | $\Delta IROA_3$ |
| DTA | -0.011*** (-2.83) | -0.014*** (-3.32) | -0.022*** (-2.45) | -0.010*** (-2.47) | -0.013*** (-2.98) | -0.021** (-2.33) |
| PE | 0.041* (1.71) | -0.001 (-0.01) | -0.003 (-0.12) | 0.041* (1.69) | 0.003 (0.10) | 0.002 (0.06) |
| SGRO | 0.000 (0.00) | -0.022 (-1.02) | -0.015 (-0.32) | 0.000 (0.06) | -0.020 (-0.92) | -0.007 (-0.14) |
| SIZE | -0.016 (-0.85) | -0.034 (-0.98) | -0.023 (-0.88) | -0.018 (-0.91) | -0.038 (-1.12) | -0.029 (-1.08) |
| g1 | 0.116 (1.24) | 0.111 (1.55) | 0.103 (1.60) | 0.111 (1.18) | 0.104 (1.50) | 0.107 (1.48) |
| g2 | -0.081 (-1.48) | 0.141 (0.58) | -0.099 (-1.54) | -0.089 (-1.59) | 0.119 (0.49) | -0.126* (-1.75) |
| g3 | -0.058** (-2.01) | -0.055 (-1.46) | -0.098** (-2.57) | -0.056* (-1.93) | -0.051 (-1.36) | -0.091** (-2.32) |
| Year dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| R^2 | 11.65% | 8.44% | 16.7% | 9.86% | 7.68% | 15.22% |
| n | 210 | 182 | 157 | 208 | 181 | 154 |

Notes: This table reports regressions of post-buyout performance changes on earnings management and control variables. The dependent variables in regressions are changes in raw income (ΔROA) and changes in industry-adjusted income ($\Delta IROA$). Changes in net income are computed as change relative to year -1 for a given post-buyout year. All models are estimated via OLS regressions with robust standard errors. t values are displayed in parentheses. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively

Performance of
management
buyouts

Table X.
Regression of post-
buyout performance
on discretionary
accruals

| | ΔROA_1 | ΔROA_2 | ΔROA_3 | $\Delta IROA_1$ | $\Delta IROA_2$ | $\Delta IROA_3$ |
|---|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| <i>Panel A: Univariate regressions</i> | | | | | | |
| SD | 1.902 | 2.018 | 2.158 | 1.911 | 2.022 | 2.176 |
| Coefficient | -0.014*** | -0.015*** | -0.022** | -0.012*** | -0.012*** | -0.20** |
| Impact (%) | -2.66 | -3.03 | -4.75 | -2.29 | -2.42 | -4.35 |
| <i>n</i> | 214 | 186 | 161 | 212 | 185 | 158 |
| <i>Panel B: Multivariate regressions</i> | | | | | | |
| St deviation | 1.891 | 2.01 | 2.153 | 1.899 | 2.014 | 2.153 |
| Coefficient | -0.011*** | -0.014*** | -0.022** | -0.010** | -0.013*** | -0.021** |
| Impact (%) | -2.08 | -2.81 | -4.73 | -1.89 | -2.62 | -4.52 |
| <i>n</i> | 210 | 182 | 157 | 208 | 181 | 154 |
| Notes: This table reports the economic impact of discretionary accruals. SD is the sample standard deviation of discretionary total accruals (DTA). Coefficients are estimated by univariate OLS and multivariate $\Delta ROA = \alpha + b_1DTA + b_2PE + b_3SGRO + b_4SIZE + b_5g1 + b_6g2 + b_7g3$ regression, the results of which are reported in Table X. Impact is calculated by multiplying the DTA coefficient by the relevant sample standard deviation. **,***Significant at 5 and 1 per cent levels, respectively | | | | | | |

Table XI.
Economic impact of
discretionary accruals

6. Conclusion

This study tests earnings management and post-transaction performance in a unique sample of 291 private firm MBOs. It hypothesises that the different agency problems faced by private firm managers and the resulting distinct motives for undertaking buyout will affect the exercise of earnings management practices in private firm MBOs. Supportive of this hypothesis, results show significant income-increasing earnings management in the year preceding buyout. This year coincides with large increases in total accruals and earnings. Separate tests for PE-backed and non-backed subsamples show evidence of PE involvement inhibiting earnings management. Buyouts without PE sponsor, however, exhibit significant upwards earnings management behaviour. These findings are robust across three estimation models.

The performance analysis suggests that pre-buyout earnings management can explain post-buyout performance changes. The tests show significant drops in performance following buyout in aggressive earnings managers and upwards earnings managers. Aggressive earnings managers fail to outperform industry peers while upwards earnings managers cease to outperform industry after second post-buyout year. The results of univariate and multivariate regressions indicate that performance drops can be explained by upwards earnings management prior to buyout. Earnings management proxy DTA are statistically and economically significant in all regressions. Consistent with the prior evidence from equity offerings, the results suggest that earnings management is a significant determinant of post-transaction performance.

This research makes several contributions for practitioners and regulators. It shows that earnings management is not a generic phenomenon in MBOs and there is considerable heterogeneity with respect to the existence as well as direction of earnings management. The heterogeneity exists in the form of public and private firms, as well as PE-backed and non-backed acquisitions. The findings related to performance analysis underline challenges in value creation and difficulties in assessing it, as well as demonstrating that the classic agency view does not fully explain post-buyout performance in private firm buyouts.

This study does not attempt to explore earnings management practices in other types of buyouts. Therefore, a useful area for further research would be to examine earnings management in other types of buyouts, distinguishing between public and private firm governance structures (e.g. family firms, owner/manager-led firms, agent-led firms) and deal type (e.g. management buy-in, divestment, secondary buyout). Further research can

separately examine family and non-family MBOs, full MBOs and divisional MBOs to fully analyse the implied heterogeneous behaviour and shed more light on the motives of earnings management.

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| Variable | Source | Definition |
|--|-----------|--|
| MBO | TOB | A buyout acquisition led by members of incumbent management team as stated in deal synopsis provided by Thomson One Banker |
| Total Accruals | FAME | Non-cash working capital minus depreciation: $(\Delta\text{Current Assets (F48)} - \Delta\text{Cash (F42)}) - (\Delta\text{Current Liabilities (F66)} - \Delta\text{Short term debt (F52)}) - \text{Depreciation (F21)}$ |
| Working Capital Accruals | FAME | Non-cash working capital: $(\Delta\text{Current Assets (F48)} - \Delta\text{Cash (F42)}) - (\Delta\text{Current Liabilities (F66)} - \Delta\text{Short term debt (F52)})$ |
| ΔREV | FAME | Difference between sales in the year of earnings management and prior year (F1) |
| PPE | FAME | Tangible assets in the year of earnings management (F31) |
| ROA | FAME | Net income in the year of earnings management divided by lagged total assets (F18/F70) |
| ΔROA | FAME | Difference in raw ROA between relevant post-buyout year and the year prior to buyout for three years following buyout |
| ΔIROA | FAME | Difference in industry-adjusted ROA between relevant post-buyout year and the year prior to buyout for three years following buyout |
| DTA | Estimated | Discretionary total accruals obtained from Equation (2) |
| WCA | Estimated | Discretionary current accruals obtained from Equation (3) |
| PADJ | Estimated | Performance-adjusted discretionary total accruals obtained from Equation (4) |
| PE | TOB | A dummy variable that equals 1 if the transaction is PE-backed and 0 otherwise |
| SGRO | FAME | Difference between sales in the year of earnings management and prior year, divided by prior year sales |
| SIZE | FAME | Natural logarithm of inflation adjusted total sales prior to buyout |
| g_1 | TOB | A dummy variable that equals 1 if the MBO is in internet and Computers industry, 0 otherwise. Based on Gompers <i>et al.</i> (2008) |
| g_2 | TOB | A dummy variable that equals 1 if the MBO is in Biotech and Healthcare industry, 0 otherwise. Based on Gompers <i>et al.</i> (2008) |
| g_3 | TOB | A dummy variable that equals 1 if the MBO is in Communications and Electronics industry, 0 otherwise. Based on Gompers <i>et al.</i> (2008) |
| Note: Variables obtained from financial statements are presented with their Fame item code (in parentheses) | | |

Table A1.
Variable definitions

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