Do stock-for-stock merger acquirers manage earnings?  
Evidence from Japan

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Abstract

This paper examines the earnings management behavior of Japanese merger acquirers on the Tokyo Stock Exchange. Most Japanese mergers are transacted via stock swaps, when acquirers have incentive to manage pre-merger earnings to reduce the cost of acquisition. Consistent with this incentive, Japanese acquirers have significantly positive long-term abnormal accruals in the year prior to the merger announcement. Further analyses suggest that acquirers’ extent of earnings management is an increasing function of their economic benefit at stake, and a decreasing function of monitoring by banks and foreign investors.

Keywords: Mergers, Earnings Management, Japan, Banks, Keiretsu, Monitoring
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1 Introduction

Mergers and acquisitions are important events associated with the creation, destruction, and redistribution of wealth. Previous research documents negative returns earned by acquirers who use stock payment, which suggests overvaluation of acquirer stock upon the merger announcement. The question whether acquiring firms manage earnings has been investigated as an explanation for this overvaluation. A stream of recent studies gives evidence suggesting that acquirers in stock-for-stock mergers manage earnings ahead of their planned acquisitions (Erickson and Wang, 1999; Louis, 2004; Gong, Louis and Sun, 2008; and Botsari and Meeks, 2008). Earnings management by acquirers is consistent with acquiring firms’ attempting to increase the valuation of acquirer stock pre-merger.

The incentive for earnings management by a merger acquirer is elaborated by Erickson and Wang (1999). In a stock-for-stock merger, the shares of the acquiring firm (acquirer) are exchanged for the shares of the target firm (target). Target shareholders receive a specified number of acquirer shares for each of the target shares. In one of the first steps in the merger transaction, the acquirer and the target agree on a purchase price. The number of acquirer shares to be issued and exchanged for each target share, or the share exchange ratio, is then determined by the price of the acquirer stock when the merger agreement is reached, given the agreed upon purchase price. As a result, the higher is the price of acquirer stock on the agreement date, the smaller is the number of acquirer shares required by the target (i.e., the share exchange ratio). The relation between acquirer stock price and share exchange ratio...
provides an incentive for the acquirer to manage earnings to increase its share price pre-merger. A smaller share exchange ratio minimizes earnings dilution, stock dilution, and the overall acquisition cost to the acquirer. Acquirers are not given free reins to manage earnings, because their financial reports are subject to scrutiny by auditors, regulators, activist investors, and other monitors who create a disincentive for earnings management. Therefore, it is an empirical question whether merger acquirers manage earnings.

With regard to prior research, Erickson and Wang (1999) find that acquiring firms in the U.S. manage earnings prior to a stock-for-stock merger, and the degree of income increasing earnings management, is positively related to the relative size of the merger. Louis (2004), who also bases his research on U.S. data, documents strong evidence suggesting that acquiring firms overstate their earnings in the quarter preceding a stock swap announcement. Gong et al. (2008) find a positive association between stock-for-stock pre-merger earnings announcement and post-merger lawsuits in the U.S. Furthermore, Botsari and Meeks (2008) examine bidders in share for share mergers on the London Stock Exchange, and find that bidders manage earnings ahead of share-financed bids. On the contrary, other authors argue that the accrual estimation technique is an alternative explanation for some of these above results (Heron and Lie, 2002; and Pungaliya and Vijh, 2009). Both Heron and Lie (2002) and Pungaliya and Vijh (2009), who claim better estimation methods than the prior studies, find no evidence of earnings management. Overall, prior literature finds debatable evidence of earnings management by stock-for-stock merger acquirers, with the key point of contention being the method for capturing discretionary current accruals.
This paper performs the investigation in the context of Japan, where most mergers are transacted via stock swaps. The mechanism by which stock-for-stock acquisitions create incentive for earnings management is the same in Japan as in the U.S. and the U.K. Therefore, Japanese stock acquirers may manage earnings like their U.S. and U.K. counterparts, however it is not known a-priori whether they actually do due to the high cost of earnings management in Japan.

On the one hand, earnings management is relatively more costly in Japan than in the U.S. and the U.K. due to Japan’s ownership and regulatory structures. Ownership of large blocks of shares by banks allows Japanese managers to take long-term perspectives without pressure for reporting high earnings. Further, banks’ control over firms via share ownership, debt holdings, and bank personnel on the board allows banks to scrutinize the firms’ finances closely, making it more difficult for Japanese managers to manage earnings. With regards to regulations, a high level of conformity between financial and tax regulations in Japan are likely to influence accounting choices for reporting smaller earnings, because higher earnings incur larger taxes. Further, complex merger regulations in Japan lead to a high likelihood of detection, which also increases the cost of earnings management.

1 The Japanese Commercial Code has provisions for a second type of merger, where two merging firms can negotiate to be both liquidated and come together as a new company. The merging firms agree on the merger ratios, or the percentages of a share of the new company that each of the merging firms’ shares will be equivalent to. A higher merger ratio results in a larger stake in the new company, which conveys a stronger voice in governance. For example, a stake of at least 33.4% in the new company usually conveys the veto power over future takeovers and other major decisions. In this study, I exclude this merger structure because it is typically impossible to distinguish which firm is the acquirer and which is the target, as both merger firms are delisted following the merger, and the press often refers to the merger as of equals. This type of merger is costly and rare (Kester, 1991). Less than 10% of mergers in Japan are of this type during the examination period.
On the other hand, the high cost of earnings management does not imply that Japanese managers have no incentive or no desire to report high profitability. Clearly, all else being equal, managers look more competent with a higher reported net income. In fact, periodic headline scandals suggest that accounting impropriety is not rare in Japan. For example, in a most long-standing fraud, Olympus incurred huge investment losses during the 1990s, but was able to cover up the shortfall over decades by using various forms of accounting window dressing (Skinner, 2011, Business Week). In another similarly egregious example, Kanebo overstated operating results between 1995 and 2004 with the help of their auditors, who were of Japan’s second largest accountancy firm (Soble, 2006, Reuters). Other headline scandals involved other former paragons such as Sanyo Electric (Kyodo AP, 2007), Nikko Cordial (Shimizu and Takahara, 2007, Japan Times), and Livedoor (Nakamoto and Pilling, 2006, Financial Times). The scandals raise questions about Japan’s earnings management practices.

More importantly and despite the high cost of earnings management in Japan, the incentives for managing earnings prior to a stock swap as described by Erickson and Wang (1999) also apply to Japanese firms. Although Japanese managers typically have less equity-based compensation than their U.S. and U.K counterparts, they should still want to boost their firm’s share price to reduce the share exchange ratio. When fewer acquirer shares are exchanged, more wealth is preserved under acquirer management, and acquirer managers are more able to retain a leading voice in the governance of the merged firm.

To my knowledge, this paper is the first to investigate earnings management by merger acquirers outside the U.S. and the U.K. Because Japan is the world’s third largest capital
market, evidence pertaining to Japan is economically important in its own right.\(^2\) The context of Japan is interesting because Japan’s merger environment is different from the U.S. and U.K. in the fact that Japanese mergers are relatively rare. They typically involve only large acquirers and result from prolonged negotiation processes. In addition and as argued in this paper, Japanese accounting standards and practices call for a different method to capture discretionary accruals. Overall, evidence based on a different methodology under different accounting standards from a different merger environment informs the debate whether acquirers manage earnings.

This paper contributes to earnings management research because it offers insight into the advantage of using specific accruals relevant to a specific country’s accounting standards. Using specific accruals for the detection of earnings management is recommended by McNichols (2000), albeit the author focuses on specific accruals relevant to industries rather than countries. The insight into country-specific accruals offered by this paper is important for global earnings management studies. More elaborations on this issue are presented in the next two paragraphs.

The most widely used measurement for detecting earnings management in the literature is based on current accruals. As discussed by Teoh et al. (1998), current accruals involve current assets and liabilities that support the day-to-day operations of the firm. Managers can manipulate current accruals, for example, by advancing recognition of revenues with credit

\(^2\) Targets’ managers should have enough incentive and expertise to detect earnings management by acquirers, and could also manage earnings to influence the share exchange ratio to counter the effect of acquirer earnings management. However, as reported by Erickson and Wang (1999), targets’ abnormal accruals are not significantly different from zero. In this paper, targets are small firms without enough data to estimate abnormal accruals.
sales (before cash is received), by delaying recognition of expenses through assumption of a low provision for bad debts, or by deferring recognition of expenses when cash is advanced to suppliers. On the other hand, also as discussed by Teoh et al. (1998), long-term accruals involve long-term net assets, and can be manipulated upwards by decelerating depreciation, decreasing deferred taxes, or realizing unusual gains. In the U.S., long-term accruals are stringently scrutinized and costly to manipulate. Manipulations involving the liquidation of fixed assets, for example, have real disrupting economic consequences, and as a result these manipulations are subject to stringent scrutiny. Abnormal changes to depreciation and amortization accounts often denote changes to capital accounts, which also invite scrutiny.\(^3\) U.S. managers presumably prefer to manage current accruals to stay within the bounds of generally accepted accounting principles (McNichols, 2002; and Healy, 1985). Consequently, most prior studies focus on current accruals but not long-term accruals.

Rather than using current accruals, this paper articulates the advantage of using long-term accruals for detecting earnings management in Japan. As shown in Figure 1, which presents the income statement under Japanese reporting standards, depreciation and amortization are part of Item III (selling, general and administrative expenses), non-operating income and expenses are Items IV and V, and extraordinary gains and losses are Items VI and VII. Unlike in the U.S. where depreciation and extraordinary items are scrutinized stringently, they are defined broadly in Japan’s accounting standards, leaving them exploitable within the standards’ bounds. Earnings manipulations in Japan often involve the sale of assets (Herrmann et al., 2003, and anecdotal evidence under Section 8), and decreased depreciation

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\(^3\) For example, in the case of Worldcom, the U.S. Securities and Exchanges Commission brought action against the company for transferring operating costs to capital accounts to understate expenses and overstate earnings (U.S. Securities and Exchange Commission v. Worlcom, Inc. 6/27/2002).
and extraordinary items which result from the sale of assets (Pan, 2009).\footnote{In their study, Herrmann et al. (2003) document that 87\% of Japanese firms report sale of fixed assets, resulting in income averaging 16\% of total asset. They find a negative association between income from asset sale and management forecast error. Thus they conclude that Japanese managers use income from the sale of fixed assets to manage earnings. Pan (2009) also argues that Japanese managers sell assets to manage earnings.} Earnings manipulation in Japan also involves non-operating income, for example via restructuring charges and accounting changes (Herrmann et al., 2003), and income from subsidiaries and affiliates (anecdotal evidence described in Footnote 30). Prolonged economic downturn and recession since the early 1990s create pressure for Japanese companies to manipulate these long-term accruals, because they often are of larger economic significance relative to current accruals, which are mere discrepancies between cash and accrual bases in the operating cycle and are of smaller magnitudes.

The paper’s results show that Japanese merger acquirers have significantly positive long-term abnormal accruals in the fiscal year prior to merger announcement, and these abnormal accruals are larger than those of firms concurrently matched to acquirers by principal industry, size, and performance. These findings suggest that acquirers manage earnings upwards in anticipation of their mergers. Further analyses show some evidence suggesting that the degree of earnings management by acquirers is an increasing function of anticipated conflict with target creditors, consistent with the effect of economic benefit at stake to acquirers. Further analyses also yield strong evidence suggesting that the degree of earnings management is a decreasing function of the cost to acquirers that can result from their earnings management behavior, specifically monitoring by banks and foreign investors.

This paper’s methodology for capturing earnings management and its overall conclusion are supported by prior research. The notion that earnings may be managed via long-term
accruals is evidenced by Herrmann et al. (2003), who demonstrate that Japanese managers manage earnings via the sale of assets, which is a transaction that involves long-term accruals under Japanese accounting standards. In addition, this paper’s finding of earnings management is robust to an alternative measure of earnings management that is similar to the one used by Herrmann et al. (2003), but that is independent of the long-term accrual computation.

This paper proceeds as follows. Section 2 reviews the merger environment in Japan. Section 3 develops the paper’s hypotheses. Section 4 describes the method for estimating acquirer earnings management. Section 5 describes the research design, sample, and data. Section 6 presents the main results. Section 7 provides additional discussions. Section 8 reports some anecdotal evidence. Section 9 concludes the paper and points out policy and research implications.

2 Japan’s merger environment

Merger activity in Japan is mostly motivated by strategic considerations (Kester, 1991). The most important class of mergers in Japan is for taking over firms in trouble, which implies a program to rescue them (Horiuchi and Okazaki, 1994). The announced reasons for selling by the acquired firm are overwhelmingly connected with the need to improve unsatisfactory performance (Kester, 1991). Most Japanese mergers are friendly, and occur with the sponsorship of the government and major share-owning banks. There is generally an on-going business relationship between the merger firms, often participation in the same industrial group, cross-ownership between the merger parties, and partial ownership by common banks. The tendency has been to combine weaker firms with stronger ones. The banking sector acts as a substitute for the capital market in disciplining corporate managers,
but this can be mitigated by banks’ tendency to renegotiate financial commitments with firms and to rescue failing firms (Sheard, 2002).

The merger process in Japan is described by Kester (1991). Once the two parties have agreed in principle to merge, then a bank acts as advisor simultaneously to both sides in the transaction. The bank often has equity and debt interests in both. Besides offering technical expertise, the bank assumes the role of go-between or arbiter in the process of completing the deal. It also acts as price-setter by suggesting the value to be paid for the target. The agreed-upon price determines the share exchange ratio, which creates incentive for the acquirer to manage earnings.

In Japan, the regulation of mergers and acquisitions (M&As) is achieved through the combination of a relatively complex set of rules (Ezaki et al., 2009; and Kojima, 2005). Since the legislation of the Japanese Anti-Monopoly Act in 1947, its principle for regulating M&As is that companies may not effectuate mergers to restrain competition in a field of trade. The Act is enforced by Japan’s Fair Trade Commission (JFTC), which mandates that the merger parties submit their proposals to the JFTC for review. Despite having exclusive jurisdiction over the enforcement of merger control, the JFTC regularly consults with other ministries and sector-specific regulators to consider relevant public and industrial policies. As a result, the merger parties must comply with many legislative and non-legislative rules.

Due to complex regulatory control, there is a waiting time before a merger proposal may be approved. Under the enforcement system created by the JFTC, the merging parties beyond a certain asset or turnover threshold (generally speaking one billion yens) cannot effectuate the merger for at least 30 days following notification, during which time the JFTC performs its merger review. This waiting period remains the same after many amendments to
the Act over the years. When a detailed investigation is necessary, the JFTC requests additional materials and, upon their receipts, begins the second stage of investigation which may take up to 90 days.

Besides the formal review process described above, the JFTC also receives requests for prior consultations from parties, especially those planning large-scale mergers, in advance of their formal notifications. Although prior consultations are informal procedures, they undergo the same review process as that of the formal merger investigations and can take as long.

Due to the complex regulatory environment, the merger parties must take time to consider the impacts of all regulatory requirements before reaching a merger agreement, which contributes to their prolonged negotiation process. Kester (1991) adds that the slowly-measured pace of Japanese merger negotiations is really due to a consensus decision-making style. With ownership of a company comes a large and cross-held coalition of stakeholders, a coalition that most Japanese managers feel obliged to represent in its entirety in their negotiations with a potential buyer or seller. Overall, the complex regulatory environment suggests little earnings management, due to the high likelihood of detection.

3 Hypotheses development

3.1 Acquirer earnings management

Prior research based on the U.S. and U.K. examines the abnormal accruals of acquiring firms and finds them to be significantly higher in stock acquisitions, where there is an incentive to inflate stock prices, than in cash acquisitions, where there is little incentive (Erickson and Wang, 1999; Louis, 2004; Gong, Louis and Sun, 2008; and Botsari and Meeks, 2008). When an acquisition is effected via stock swaps, inflated acquirer stock price
reduces earnings dilution, stock dilution, and the cost of target acquisition (Erickson and Wang, 1999). Thus, it is generally thought that stock acquirers want to manage earnings ahead of their planned acquisitions to reduce the cost of the acquisition transaction. Most Japanese acquirers are stock acquirers, so they should have incentive to manage earnings as acquirers in the U.S. and U.K. Although most Japanese managers do not have stock-based compensation schemes like their U.S. and some of their U.K counterparts, Japanese managers generally have loyalty and overall responsibility for their firms. Therefore, they should want to reduce the acquisition cost to preserve the economic wealth under their management. Another reason for which Japanese managers should desire to manage earnings is to reduce the share exchange ratio, which reduces the number of acquirer shares issued to target shareholders, and thus helps acquirer management retain a leading voice in the governance of the merged firm.\footnote{A larger stake in the merged firm conveys a stronger voice in its governance. For example, a stake of at least 33.4% in the merged firm usually conveys the veto power over future takeovers and other major decisions.}

H1: Acquirers manage earnings upward in the period prior to a merger.

3.2 Acquirer earnings management and economic benefit at stake

The incentive for an acquirer to manage earnings prior to the merger agreement should be an increasing function of the economic benefit at stake, i.e., economic benefit that can be created from such behavior. Economic benefit at stake is discussed by Erickson and Wang (1999), who assess the economic benefit from earnings management to the acquirer via the significance of the transaction to the acquirer. They argue that generally, if the size of target is relatively small compared to the size of the acquirer, the economic benefit from increasing stock price via manipulated earnings will also be relatively small to the acquirer. Since earnings management is
not costless, when the economic benefit is reduced, the acquirer is less inclined to manage earnings. Vice versa, when the target size is relatively large, the economic benefit at stake is relatively large, so the acquirer is more inclined to manage earnings.

**H2:** Acquirer earnings management is an increasing function of the significance of the acquisition transaction to the acquirer, all else being equal.

Acquirer economic benefit at stake also depends on conflicts with other merger stakeholders, most notably creditors of the target. When the target is leveraged or highly leveraged, the acquisition cost incurred by the acquirer is increased due to this conflict. This is because creditors’ claims to target assets have priority, and by merging acquirer and target assets together the merger effectively exposes acquirer assets to these creditors. The acquirer must contemplate the risk that the merged firm may have to liquidate acquirer assets to fulfill target financial obligations, as there is a likelihood that target assets are not of sufficient quality to fulfill its own obligations. The greater the risk of the target having insufficient assets, the larger the conflict with target creditors, and the larger the perceived cost of the merger acquisition to the acquirer. These risks increase the incentive by the acquirer to alleviate this cost via earnings management.

Vice versa, when the target is unleveraged or slightly leveraged, the risk that the merged firm may liquidate acquirer assets is smaller, therefore conflict with target creditors is smaller, which reduces the perceived cost of acquisition to the acquirer, and reduces acquirer incentive to alleviate this cost via earnings management. In essence, conflict between acquirer and target creditors increases acquirer economic benefit at stake from earnings management.

**H3:** All else being equal, acquirer earnings management is an increasing function of conflict with target creditors.
3.3 Acquirer earnings management and monitoring

The incentive for the acquirer to manage earnings should be a decreasing function of the costs to manage earnings. One such cost is the monitoring done by banks, which is the most important financing source to Japan’s corporate sectors. Banks can monitor firms because banks can use private information accessed during banking relationships to mitigate information asymmetry in firms’ activities (Diamond, 1991). Banks are at the center of Japan’s financial system, where the bank-firm relationship is tightly shaped by government regulators who instituted industrial policies for economic growth (Morck and Nakamura, 2007; Higgins, 2004; Hanazaki and Horiuchi, 2000; Aoki, 1988; and Komiya et al., 1988). In the past, the monitoring of firms was assumed principally by their main banks, however, more recently it is assumed by groups of banks instead of single main banks to manage shared risks during banking crisis (Horiuchi, 2002). Banks cumulate the roles of shareholders and debt-holders and traditionally assume the principal monitoring role of firms in Japan (Prowse, 1992; Aoki and Patrick, 1994; and Gilson and Roe, 1993). Banks’ influence is great enough to impact the borrowing firms in their daily operations as well as major corporate events. As a general rule, banks facilitate mergers while having relationships with both merger firms (Kester, 1991). Because bank personnel likely have expertise to see through earnings management, the close relationships between banks and both merger firms make it costly for either firm to manage earnings.

H4: All else being equal, acquirer earnings management is a decreasing function of acquirer bank monitoring.

A conspicuous feature of Japanese corporate monitoring systems is the keiretsu, a broad alliance of firms across diverse industrial sectors, each with a bank as a core member, where member firms are related through borrowings from that bank, mutual shareholdings, personnel
exchange, and trade in intermediate products (Berglof and Perrotti, 1994). The elaborate keiretsu network helps maintain steady relationships among keiretsu members, foster economic development among them, and protect them from hostile takeovers (Nakatani, 1984). Via access to private firm information, keiretsu cross-holdings alleviate firm information asymmetry to keiretsu shareholders (Jiang and Kim, 2000). However, cross-ownership may create conflict of interest that impedes the disciplining of incumbent managers (Matvos and Ostrovsky, 2008). Likewise, keiretsu may be a form of conspiracy to entrench and give wide latitude to them (Horiuchi and Okazaki, 1994). Because keiretsu monitoring lessens scrutiny from outside, it is expected to increase the incentive for the acquirer to manage earnings. Indeed, prior research has documented evidence consistent with keiretsus’ influencing earnings management (Chung et al., 2004; and Gramlich et al., 2005).

*H5: Acquirer earnings management is an increasing function of keiretsu monitoring, all else being equal.*

Another cost of earnings management is the monitoring which is done by foreign investors (Chung et al., 2004; and Jiang and Kim, 2002). These investors include large institutions from the U.S. and Europe which invest in Japanese companies on behalf of other investors. Unlike banks and keiretsus who can access internal information, foreign investors must rely on public information, and so have incentives to scrutinize the financial reports of firms they invest in. Foreign institutional investors also have the resources to regularly hire expert accountants/auditors for the scrutiny. Although a boost in acquirer share price resulting from earnings management also benefits these investors, it is costly for the acquirer to manage earnings against the on-going monitoring established by foreign investors.
**H6:** *All else being equal, acquirer earnings management is a decreasing function of monitoring by foreign investors.*

Managerial ownership, concentration of institutional, family and individual ownerships, and outside directors are often examined in many U.S. papers as barometers of corporate monitoring. However in Japan, managerial holdings in Japan are small (Prowse, 1992; and Kaplan, 1994), family and individual ownership is rare (Claessens et al., 2000), and outside directors are also rare (Ahmadjian, 2000). Therefore, these variables are excluded because their monitoring roles compared to banks’ remain small in large Japanese firms.

### 4 Estimation of earnings management

Earnings management via discretion is estimated via analysis of abnormal accruals. Specifically, I decompose total accruals into abnormal and normal components using a cross-sectional variation of the Jones (1991) model. Total accrual (TA) is defined as the difference between net income (NI) and operating cash flow (OCF), similar to Subramanyam (1996), Ashbaugh-Skaife et al. (2008), and Botsari and Meeks (2008). This method is different from the balance sheet method, which estimates accrual from successive balance sheets. I do not use the balance sheet method because Collins and Hribar (2002) discuss that it results in significantly biased estimates, especially in case of asset liquidation.\(^6\) The use of successive balance sheets would also mitigate data availability for this paper.

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\(^6\) The balance-sheet approach uses the period-to-period change in current asset and current liability accounts, adjusted for changes in cash and reclassifications of currently maturing portions of long-term debt, to estimate the accrual component of earnings. This approach leads to serious errors when the articulation between the changes in working capital balance sheet accounts and the accrual components of earnings is destroyed, for example via liquidation of
Total accrual is expected to be negative on average for firms with high operating cash flow and low net income. The more aggressive (conservative) the firm is in reporting net income, the more positive (negative) the accrual is expected to be. Un-scaled net income and operating cash flow are used rather than their per-share measures, because some merger-related events likely change the number of shares outstanding.

OCF is measured as sales minus cost of goods sold and selling and administrative expenses exclusive of depreciation and goodwill expenses. Except for differences between the cash and accrual bases in the operating cycle (i.e., current accruals), earnings management at the OCF level is deemed difficult because this income measure is largely unaffected by accounting discretion. Therefore, accounting discretion is deemed captured in long-term accrual, from which abnormal accrual is determined and ascribed to earnings management.

This paper’s definition of long-term accrual captures manipulations via depreciation and amortization, non-operating items, and extraordinary items. Common examples of abnormal long-term accruals are decreases of depreciation/amortization expenses and extraordinary losses, and increases of extraordinary gains to inflate net income artificially. They are created when a firm engages in manipulations via the sale of assets, as is often done in Japan.\(^7\)

To understand the use of long-term accruals, let’s consider the case of extraordinary items in Japan. Japanese accounting standards (J-GAAP) and reporting practices are different from their assets, mergers, acquisitions, and divestitures. Earnings management via liquidation of assets is common in Japan. Therefore the balance-sheet approach would not be well-suited for this paper.

\(^7\) As demonstrated via the case of Worlcom (U.S. Securities and Exchange Commission v. Worldcom, Inc. 6/27/2002), another type of manipulation that dovetails with the above is by transferring line costs to capital accounts, or capitalizing instead of expensing, to inflate earnings.
U.S. counterparts with regards to depreciation and extraordinary income (Japan Company Handbooks). Unlike US GAAP, extraordinary income under J-GAAP includes gains/losses on sales of long-term investments in properties, equipment, real estates, and other-than-trading securities (JICPA, 2002; JICPA, 1991; Herrmann et al., 2000). For another stark difference, J-GAAP allows any adjustment of changes in depreciation estimates (of useful lives or salvage values) of long-lived assets to be recognized as extraordinary gains or losses during the period of adjustments. Such gains/losses and depreciation adjustments are highly discretionary and open to managers’ manipulation. Indeed, the sale of assets is systematically used for earnings management in Japan (Herrmann et al., 2003). Extraordinary income is reported by 93% of companies in Japan, versus 20% in the U.S. (Herrmann et al., 2000). Henceforth in this paper, the term accrual is used to denote long-term accruals, except when current accruals are specifically mentioned.

The basic model to estimate abnormal accrual is a cross-sectional variation of the Jones (1991) model:

\[ TA_{it} = 1/Asset_{i,t-1} + a*\Delta Rev_{it} + b*PPE_{it} + \varepsilon_{it} \]  

where \( TA_{it} \) is total accrual of firm i in year t scaled by lagged total asset, \( Asset_{i,t-1} \), \( \Delta Rev_{it} \) is change in net revenues and \( PPE_{it} \) is gross property, plant, and equipment, both scaled by \( Asset_{i,t-1} \). This model is the Jones model with lagged asset as a deflator, as deflation helps mitigate

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8 As discussed by Herrmann et al. (2002), the reporting practices for fixed assets in Japan provide ample opportunity for earnings management. Fixed assets are recorded at historical cost less accumulated depreciation. The gap between historical cost and market value remains until the assets are sold. As the market value of individual assets changes, an unrecorded holding gain or loss is created. By selecting and timing the specific assets sold, management can influence the income recognized each period.

heteroskedasticity in residuals. I do not modify the Jones model with changes in receivables as my focus is on long-term accruals. The estimation is based on a cross-sectional sample of Tokyo Stock Exchange firms for each combination of industry (two-digit General Industry Classification System developed by Standard & Poor) and year. Abnormal accrual of a firm (BAC) is the error term in the above regression after extending firm values to the coefficients estimated based on the cross-section in the concurrent year. Annual data are used instead of interim (semi-annual or quarterly) to benefit from data availability and follow the more slowly-paced merger negotiations in Japan.¹⁰

To provide additional control for what are considered “normal” accruals, I consider firm performance, because abnormal accruals may be mechanically higher for firms with higher performance (Dechow et al., 1995; and Kothari et al., 2005). Specifically, I compare between the abnormal accrual of an acquirer and that of a match firm, identified as a firm of the same principal industry, and being the closest in size and book-to-market ratio in the concurrent year to the acquirer. The book-to-market ratio serves as benchmark for performance.¹¹ The difference is termed adjusted acquirer abnormal accrual, which is a level of earnings management beyond that of a non-acquirer peer defined by principal industry, size, and performance. A possible alternative match is an acquirer that uses substantial cash instead of stock for merger consideration. However, this type of acquirer practically does not exist in the sample period.¹²

Adjusting for the match provides extra control that is not usually done in prior earnings management studies, and thus is an advantage of this paper. However, adjusted results are

¹⁰ See Footnote 16.

¹¹ I use ROA as a specific control variable in multivariate tests.

¹² This type of merger is very rare in Japan overall.
difficult to interpret. Further, because the adjusted measure is the difference between acquirer and match, its regression results may suffer from heteroscedasticity. Therefore, adjusted (and all other) results are subject to White’s diagnostics for heteroscedasticity. In sum, two measures, unadjusted abnormal accrual (UBAC), and abnormal accrual adjusted for the match (ABAC), are used as proxy for acquirer earnings management. The abnormal accruals are long-term accruals, which capture the earnings management practices allowed within the bounds of Japanese accounting standards.

5 Research methodology (Research design, sample, and data)

5.1 Research design

For H1, I assess acquirer earnings management by examining its abnormal accrual in the year prior to the merger announcement (UBAC = BAC_{Acquirer}), which I also adjust by that of a firm concurrently matched to acquirer by principal industry, size, and performance (ABAC = BAC_{Acquirer} - BAC_{Match}). Compared to UBAC, ABAC provides extra control for assessing earnings management by acquirer. I test the significance of UBAC and ABAC in univariate analyses. I also perform multivariate analyses by pooling acquirers and their matches together to regress their abnormal accruals on a dummy (ACQDUM) which equals 1 for acquirer, and 0 for match. The regressions include a host of variables known to impact earnings management, such as market capitalization (CAP), ROA, growth rate (GRO) which is measured as three-year annualized sales growth, and debt ratio (DEBT) which is measured as the ratio between total debts and total assets. Additional controls include a dummy to denote whether the merger

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13 See Kothari et al. (2005), Pungaliya and Vijh (2009), and Jaggi and Lee (2004) for discussions on the impact of ROA, sales growth, and debt, respectively, on earnings management. It should be noted that controlling for sales growth may interfere with finding evidence of earnings
announcement occurs after 1999 (POST99) to capture the potential effect of Big Bang initiatives,\textsuperscript{14} and GDP growth rate (GDPR), which is based on Japan’s real seasonally adjusted GDP. The regressions have fixed year effects and have the following structure:

\[
BAC_{it} = \beta_0 + \beta_1 ACQDUM_{it} + \beta_2 CAP_{it} + \beta_3 ROA_{it} + \beta_4 GRO_{it} + \beta_5 DEBT_{it} + \beta_6 POST99_{it} + \beta_7 GDPR_{it} + \epsilon_{it} \tag{2}
\]

For H2, the significance of the acquisition transaction to the acquirer is estimated via the deal ratio (DEALR), defined as the ratio of the target’s market capitalization and that of the acquirer in the year prior to the merger announcement. For H3, acquirer conflict with target creditors is estimated via target debt ratio (TADEBT), the target’s ratio of total debts to assets in the year prior to merger announcement, as this ratio denotes the risk that target assets may not be adequate to fulfill target obligations and acquirer assets may be liquidated to pay target creditors. For H4, banks’ monitoring of the acquirer is estimated via acquirer bank borrowings (BBOR), defined as the ratio between acquirer total borrowings from all bank sources, and acquirer total assets.\textsuperscript{15} For H5, keiretsu monitoring is estimated via keiretsu cross-holdings (KEI), defined as

management, because firms involved in accounting malfeasance often manipulate revenues. For example, revenue fraud accounted for over 60% of fraudulent financial reporting occurrences investigated by the U.S. Securities and Exchange Commission between 1-1998 and 12-2007 (COSO Report 2010). Thus, using sales growth as a control variable makes this paper’s finding of earnings management more conservative.

\textsuperscript{14} See Higgins and Beckman (2005) for a discussion on the impact of Big Bang on merger activity in Japan.

\textsuperscript{15} Another potential proxy for bank monitoring is bank ownership of the acquirer. However, following the 1977 reform of Japan’s Anti-Monopoly Act, a bank’s shareholding of a company is limited to only 5%, so that bank monitoring comes mainly through the debt-holder role. Indeed, a number of studies show evidence that Japanese banks monitor firms mostly via their debt-holders’ roles (Morck and Nakamura, 2007 and 2000; and Weinstein and Yafeh, 1998). Replications of this paper’s analyses (in Table 6) incorporating bank ownership, measured as total holdings by all banks in acquirer, as an additional monitoring variable do not show significant effect of bank ownership. These replications remain consistent with the reported
the shareholdings in the acquirer by keiretsu firms relative to the top ten shareholders of the acquirer. Finally for H6, foreign investors’ ownership is estimated via their foreign shareholdings (FOR).

To assess H2-H6, I focus on the sample of merger acquirers and use regressions where the dependent variables are acquirer abnormal accruals (UBAC / ABAC), and the independent variables are deal ratio (DEALR), target debt ratio (TADEBT), acquirer bank borrowing (BBOR), keiretsu cross-holdings (KEI), and foreign shareholdings (FOR). These regressions also use the same control variables as in (2), but without the dummy ACQDUM. The regressions have fixed year effects and the following structure:

$$ UBAC/ABAC_{it} = \beta_0 + \beta_1 \text{DEALR}_{it} + \beta_2 \text{TADEBT}_{it} + \beta_3 \text{BBOR}_{it} + \beta_4 \text{KEI}_{it} + \beta_5 \text{FOR}_{it} + \beta_6 \text{CAP}_{it} + \beta_7 \text{ROA}_{it} + \beta_8 \text{GRO}_{it} + \beta_9 \text{DEBT}_{it} + \beta_{10} \text{POST99}_t + \beta_{11} \text{GDPR}_t + \varepsilon_{it} \quad (3) $$

This analysis cannot use a pooling of acquirers and matches together because only acquirers engage in mergers and have data for deal ratio and target debt ratio.

All accounting-based variables from above are taken in the fiscal year prior to merger announcement, the fiscal period when earnings management is expected to be the most observable. Market capitalization data are taken at the end of that fiscal year. GDP growth rate results with regards to the effect of target insolvency, bank monitoring and foreign investors’ monitoring.

16 Erickson and Wang (1999) use data from the fiscal quarter prior to earnings announcement to capture pre-merger earnings management in the U.S. Rather than using quarterly interim data as Erickson and Wang (1999), I use annual data because interim data are not often used in Japanese studies, due to data availability. Quarterly reporting in Japan began only in April 2008, while semi-annual data are not widely available. The use of annual data allows a longer time lag on average between earnings management and merger announcement, which is appropriate for a longer negotiation process in Japan. Annual data also avoid complications from seasonality, which is often not addressed in prior research using interim data.
is taken in the year prior to merger announcement. All measures are in percentage, except CAP which is in billion yens. The data definitions and sources are tabulated in the Data Appendix.

5.2 Sample

I identify mergers by searching all Tokyo Stock Exchange (TSE) firms de-listed due to mergers during 1990-2004. The method for sampling mergers is as in Loughran and Vijh (1997). The examination period overlaps with Japan’s economic and banking crisis, when Japanese firms have pressure to enhance their financial reports. I reference Japan Company Handbooks and Lexis-Nexis news to gain insight for selecting mergers where the targets become totally absorbed in the acquirers without forming new entities. I exclude mergers that result in new entities because it cannot be clear which of the parties are acquirers or targets. I exclude mergers involving financial companies as commonly done in prior research because they are subject to special regulations. Mergers involving foreign firms are also excluded because of different motivations for cross-border deals. I identify a sample of 133 mergers from this search process. This sample size is advantageous since we know that statistical significance is found at the conventional levels not merely due to a large number of observations. For each merger, I search Lexis-Nexis to identify the very first announcement of the acquisition that results in target delisting.

Table 1 describes the sample over the years. More than half of the sample occurs after 1999, consistent with increased merger activity after Big Bang reform (Higgins and Beckman, 2005).

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17 Most Japanese mergers involve small transactions involving small family enterprises (Sibbitt, 1998). Small transactions often do not have available data and are not of sufficient economic significance. As a result, the sample sizes in studies of Japanese mergers are typically small. For example, Kang et al. (Journal of Finance, 2000) obtained a sample of 154 bidders for the period between 3/31/1977 and 12/31/1993, and Higgins and Beckman (Pacific-Basin Finance Journal, 2005) obtained a sample of 85 bidders between 1990 and 2000.
The method of payment is by stock swap in 125 mergers (94% of the sample), with the remaining transacted in a combination of mostly stock swap and very little cash. 127 acquirers (95%) and 85 targets (64%) are from Section 1, while the rest are from Section 2 of the TSE.

Based on Standard & Poor industry classification, acquirers principally in the Electronics, Chemicals and Construction sectors collectively account for 38.84% of the sample in merger value approximated by target market value just prior to merger announcement. About 30% of targets are also in those same industries. Based on the principal industry classification of each merged firm, about 59% of mergers occur between firms in the same principal industry. Industry effect is controlled for specifically in analyses of ABAC, which compare the acquirer to a match of the same principal industry. However, the overall effect of industry is deemed small, because acquirers generally belong in a large number of industries. The mean number of industries per acquirer is 6.23, denoting high diversification typical of large Japanese firms.

5.3 Data

Table 2 summarizes the main data used in this paper’s analyses except measures of earnings management, which will be discussed under Section 6. The data are retrieved in Japanese currency by the data providers, on consolidated basis and without use of exchange rates. The computations of all data measures are described in the Data Appendix. All data are converted to percentage to facilitate the interpretation of the results, except for ACQDUM which is a dummy, and market capitalization which is in billion yens.

Target market capitalization averages 63.67 billion yens, resulting in a deal ratio (DEALR) of 27.5% on average, while target debt ratio averages 36.72%. Acquirer bank borrowings (BBOR) averages 31.29%, while keiretsu cross-holdings (KEI) averages 27.36%, and foreign
shareholdings (FOR) average 11.89%. Among the control variables, acquirer market
capitalization (CAP) averages 853.63 billion yens, its ROA 0.84%, its three-year annualized
sales growth (GROWTH) 2.26%, and its debt ratio (DEBT) 38.99%. The Post 1999 dummy
(POST99) averages 55.64%, while GDP growth (GDPR) points to zero percent growth on
average. Overall, acquirers are very large firms on average and relative to their targets. The bulk
of acquirer debt consists of bank borrowings, denoting acquirers’ heavy reliance on banks rather
than the capital markets for credit.\(^{18}\)

\(<\text{Table 2 about here}>\)

6 Main results

6.1 Hypothesis 1

Table 3 summarizes acquirer accrual measures to form a basis for univariate testing. Per
definition, total accrual and abnormal accrual are expected to be negative on average for high-
cash-flow and low-net-income firms, and positive abnormal accrual suggests income-increasing
earnings management. As shown, the averages of total accrual for both acquirers and matches are
negative: the average total accrual is -12.11% for acquirers, and -11.07% for matches. The small
accrual magnitudes are consistent with the lower use of accrual by these large Japanese merger
acquirers compared to typical U.S. firms.\(^ {19}\) Acquirers’ abnormal accruals (UBACs) are more

\(^{18}\) Since the late 1970s, many Japanese firms have turned to the country’s emerging capital
markets for financing and reduced their bank loans, however large firms with traditionally
stronger bank ties have relied longer on bank financing. Bank loans are still the main source of
financing, equaling about three times equity financing to Japan’s corporate sectors (this ratio is
just over 1 in the U.S.)

\(^{19}\) As reported by Kothari et al. (2005), total accrual based on just on current items averages
18.9% among U.S. firms.
positive than those of the matches: the average abnormal accrual is 1.41% for acquirers, and -0.46% for matches. Acquirer abnormal accrual (UBAC) and its adjusted measure (ABAC) are significantly positive, consistent with earnings management by acquirers and with H1.

<Table 3 about here>

For multivariate testing, Table 4 shows multiple regression results from pooling acquirers and their matches together (Equation 2). The regressions have abnormal accrual (BAC) as dependent variable, and the acquirer dummy (ACQDUM) and other controls as independent variables. The control variables have the following sign expectations. CAP is expected to have a negative sign, as larger firms should be more subject to regulation and scrutiny. ROA may be positive or negative. ROA may be positive because firms with high (low) earnings are likely to have positive (negative) shocks to earnings that include an accrual component (McNichols, 2000). But ROA may also be negative because, all else being equal, profitable firms have less pressure to manage earnings upwards than unprofitable firms. GRO is expected to be positive from prior literature (McNichols, 2000; and Pungaliya and Vijh, 2009), because high firm growth may increase management’s desire to report higher earnings. Similarly, DEBT is expected to be positive because the severity of financial distress may increase management’s desire to report high earnings (Jaggi and Lee, 2004). POST99 is expected to be positive, because accounting regulation changes introduced by Big Bang tend to depress earnings in income statements and reveal vulnerabilities in balance sheets (Higgins and Beckman, 2005), which may increase management’s desire to present a better financial situation by managing earnings upwards. GDPR is expected to be positive because macro-economic growth increases

20 The regressions are subject to diagnostics for multicollinearity and heteroscedasticity without detecting severe violations.
management’s desire to show performance, consistent with Wang et al. (2010) who show an association between corporate fraud propensity and investor optimism about business conditions.\textsuperscript{21}

As shown, the acquirer dummy (ACQDUM) is significantly positive in all regressions, consistent with larger earnings management by acquirers and providing support for H1. The magnitude of ACQDUM suggests that on aggregate, and after controlling for other factors, acquirer abnormal accrual is larger than that of the match by 1.26\%). In other words, for each Yen of lagged asset, there is a differential of 0.0126 Yen between the acquirer’s abnormal accrual and the match’s abnormal accrual. Given that the mean lagged asset of sample acquirers is 1,527 billion yens, the differential is estimated at 19 billion yens (1,527 billion * 0.0126) on average, which seems economically significant. Further, given that the average total accrual by the acquirer is -12.11\% or -185 billion yens (-12.11\% * 1,527 billion), the differential is equivalent to about 10\% (19/185) of acquirer total accrual in magnitude.\textsuperscript{22}

Turning to the control variables, the link between ROA and abnormal accrual is significantly negative in Models 2 and 5, consistent with the expectation that earnings management in Japan

\textsuperscript{21} Wang et al. (2010) examine how a firm’s incentive to commit fraud when going public varies with investor beliefs about industry business conditions. Fraud propensity increases with the level of investor beliefs about industry prospects but decreases when beliefs are extremely high. They find that two mechanisms are at work: monitoring by investors and short-term executive compensation, both of which vary with investor beliefs about industry prospects. Their results are consistent with models of investor beliefs and corporate fraud, and suggest that regulators and auditors should be vigilant for fraud during booms.

\textsuperscript{22} This differential of 10\% is economically reasonable. For additional insight, the ratio between the modified-Jones discretionary accrual and total accrual for the sample in Kothari et al. (2003, Table 1) is = -0.29\%/-3.03\% ~ 10\%.
tends to be practiced more often by firms with low profitability.\textsuperscript{23} GDPR is significantly positive in all Models, consistent with the expectation that high macro-economic growth increases management’s desire to show performance. The GDPR results are also consistent with Wang et al. (2010) who discuss an association between corporate fraud and investor optimism.

\textless Table 4 about here\textgreater

\textbf{6.2 Economic benefit at stake (H2-H3)}

To investigate H2-H3, I examine the associations between acquirer abnormal accruals (UBAC and ABAC) and variables capturing the economic benefit at stake to the acquirer, namely deal ratio (DEALR) and target debt ratio (TADEBT). From the univariate correlations presented in Table 5, UBAC and ABAC are insignificantly correlated with DEALR, providing no support for H2. On the other hand, UBAC and ABAC are significantly correlated with TADEBT, which is consistent with H3.

\textless Table 5 about here\textgreater

Table 6 shows the results of two multiple regression (Equation 3) to assess the association between acquirer abnormal accrual (UBAC / ABAC) and proxies of economic benefit at stake to acquirer.\textsuperscript{24} The two models include the same control variables as in Table 4, with the same sign expectations.

\textsuperscript{23} This result is contrary to prior studies that report a positive link between ROA and abnormal accrual. However, this positive link is often deemed mechanical (Kothari et al., 2003), i.e., it arises more from the estimation procedure employed in those studies than from management’s discretion (McNichols, 2000).

\textsuperscript{24} The models are checked for regression assumptions, are statistically significant judging by their large F statistics, do not suffer from multicollinearity judging from low VIF statistics, and do not suffer from heteroscedasticity judging from insignificant White’s Chi-squares. The models also have satisfactory explanatory powers judging from their R-squares.
As shown, DEALR is insignificant, providing no support for H2. On the other hand, TADEBT is significant in the ABAC regression, which is consistent with H3. The overall results from Tables 5-6 provide some support for the notion that, all else being equal, target debt ratio denotes acquirer conflict with target creditors, or the risk that acquirer assets may be liquidated to pay target creditors. This risk increases economic benefit from earnings management to the acquirer, therefore increasing the incentive for the acquirer to manage earnings.

It is interesting to note that the results of DEALR is insignificant, which is different from the findings by Erickson and Wang (1999) who document that the deal ratio significantly determines the extent of earnings management by merger acquirers. A potential explanation is that due to strong credit orientation in Japan, the relative deal size does not reflect fundamental economic benefit at stake to the acquirer as adequately as target leverage.

6.3 Monitoring by corporate monitors (H4-H6)

To find support for H4-H6, the following examines the associations between acquirer abnormal accrual (UBAC and ABAC) and variables capturing acquirer monitoring, namely from banks (BBOR), keiretsus (KEI) and foreign investors (FOR). From Table 5, UBAC and ABAC are insignificantly correlated with BBOR, providing no support for H4, and insignificantly correlated with KEI, providing no support for H5. On the contrary, UBAC and ABAC are significantly negatively correlated with FOR, consistent with H5.

In multivariate tests, the multiple regression results from Table 6 show that, consistent with H4, BBOR is significantly negative in both the UBAC and ABAC regressions. In the UBAC regression, the magnitude of BBOR indicates that bank monitoring represented by one unit of the bank borrowings ratio corresponds to a multiple of -0.1704 of acquirer abnormal accrual.
Because the average bank borrowings ratio is 31.29(%), this suggests that abnormal accrual due to bank monitoring is \(-0.1704 \times 31.29\), or \(-5.33\)(%) on average. Given that the average lagged asset is 1,527 billion yens, this result could be interpreted that on average acquirers depress abnormal accrual by 81 billion yens \((-5.33\% \times 1,527\) billion) due to the monitoring of banks. KEI is not significant in either regression, consistent with ineffective monitoring by keiretsus, and providing no support for H5. Consistent with H6, FOR is significantly negative in both the UBAC and ABAC regressions. In the UBAC regression, the magnitude of FOR indicates that foreign monitoring represented by one unit of foreign ownership corresponds to a multiple of \(-0.0481\) of acquirer abnormal accrual. Because the average foreign ownership is 11.89(%), the result suggests that sample acquirers depress their abnormal accrual by 7 billion yens on average \((1,527 \times -0.0481 \times 11.89\) percent) due to the monitoring of foreign shareholders. The overall results from Tables 5-6 support the notion that all else being equal, monitoring by banks and foreign investors decreases acquirer earnings management.

The insignificance of KEI suggests little monitoring over earnings management of member firms by keiretsus. This finding is interesting as it contradicts Rahman et al. (2010)’s argument that keiretsus form the principal monitoring mechanism in Japan’s business setting. According to a substantial literature, keiretsus exist to support members in the competitive product markets, and maintain relationships among members via personnel exchange and trade in intermediate products (for example Berglof and Perrotti, 1994; and Nakatani, 1984). However, as alliance across diverse industrial sectors, keiretsus seem not cohesive enough to provide effective monitoring over members’ disclosure transparency. This paper’s finding suggests a neutral monitoring effect by keiretsus, consistent with Miwa and Ramseyer (2002) who argue that keiretsus lack monitoring substance.
It is also interesting to note that FOR is statistically more significant than BBOR in the UBAC regression (p-value = 0.0125 versus 0.0483 one-tailed) and also in the ABAC regression (p-value = 0.0068 versus 0.0495 one-tailed). The greater statistical significance of FOR reflects the notion that unaffiliated monitors (i.e., foreigners) place higher emphasis on the quality of public information than affiliated monitors (i.e., banks), who have access to internal information and want to maintain relationships, and therefore do not have the same emphasis. However, based on the magnitudes of abnormal accrual, the effect of BBOR (81 billion yens on average) is more economically significant than that of FOR (7 billion yens on average), due to the larger magnitudes of bank borrowings (31.29%) than foreign shareholdings (11.89%) and the larger BBOR coefficient (-0.1704) than the FOR coefficient (-0.0481). Thus, the monitoring of banks as affiliated monitors is deemed more important economically and should not be neglected.

The control variables are as expected: CAP is significantly negative in the ABAC Model, consistent with the notion that large firms are more regulated and scrutinized; ROA is significantly negative in the ABAC Model, consistent with Table 4 and the notion that earnings management is more often practiced by firms with low profitability; DEBT is significantly negative in the UBAC Model, consistent with the notion that financial trouble increases management’s desire to manage earnings; POST99 is significantly positive in the ABAC Model, consistent with the notion that accounting standards introduced by the Big Bang reform reveal financial vulnerabilities more clearly, thus increasing management’s desire to manage earnings.

7 Additional discussions

7.1 Earnings management via short-term accruals
Replications are performed on short-term accrual measures, where total short-term accrual is defined as the difference between operating cash flow (OCF, or sales minus cost of goods sold and selling and administrative expenses exclusive of depreciation and goodwill expenses) and operating cash from the cash flow statement, which consists of cash sales and cash disbursements in the operating cycle. The replications yield results that are overall qualitatively consistent with the reported results, however the replicated results are statistically insignificant.\textsuperscript{25} Lack of significance may be due to two potential reasons: limited availability of cash flow statements’ data and smaller extent of earnings management via current accruals.

7.2 \textit{Earnings management via the sale of securities investments}

A replication is performed using an alternative proxy for earnings management, namely income from asset sales, following Herrmann et al. (2003). As argued by those authors, there are three reasons for which income from asset sales is a good proxy for earnings management by Japanese companies: it has a discretionary component, it occurs frequently, and it is significant enough to matter in the context of Japan. First, although not entirely discretionary, income from asset sales contains a discretionary component. Managers can exercise discretion about the timing of asset sales and in some cases even the specific assets to sell so as to exploit the gaps between historical cost and market value strategically. Second, income from asset sales is commonly reported in Japan. Third, this income represents a significant component of earnings in Japan. A fourth reason, which is articulated in this paper, is that this income is considered extraordinary items under J-GAAP (JICPA, 2002), which has loose definition and regulation of extraordinary items, thus making extraordinary items more easily exploitable for managing earnings.

\textsuperscript{25} The replication results are not tabulated for conciseness, and are available upon request.
In this paper, I capture income from asset sales by specifically focusing on securities investments (investments henceforth). Since Herrmann et al. (2003) focus on fixed assets and marketable securities, my alternative proxy is slightly different from their proxy. However, there is a significant overlap between the two measures: investments are a component of fixed assets under J-GAAP\(^{26}\); and the proceeds from the sale of investments is much larger than that from the sale of property, plant and equipment among sample acquirers (5.41 times larger in Year -1 relative to the merger announcement). My alternative proxy is also different from Herrmann et al. (2003)’s proxy because those authors use marketable securities. However, marketable securities are current assets under J-GAAP, and as such they probably are not large enough to significantly modify the intended proxy.\(^{27}\)

As a measure of earning management, income from the sale of investments captures Herrmann et al (2003)’s three criteria. In terms of management discretion, the sale of investments contains a discretionary component, as management may time the sale and select the securities to sell. In terms of frequency of occurrence, as many as 48% of sample acquirers report non-zero sale of investments in Year -1. In terms of significance in magnitude, the proceed from the sale of investment represents on average 2.38% of lagged assets among sample acquirers in Year -1, and the income from the sale of investments is estimated at over 3 times the net income of sample acquirers in the same year, both of which are large amounts indeed.

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\(^{26}\) Fixed assets under J-GAAP are defined as consisting of 1) tangible fixed assets, such as buildings, structures, machinery, automobiles, land, constructions-in-progress, 2) intangible fixed assets such as goodwill, and 3) investments, such as investments in securities and long-term loans (JICPA, 2002, page 35).

\(^{27}\) I cannot measure marketable securities directly as they are lumped with cash in the database I use (Worldscope). I do not wish to measure income from sale of property, plant, and equipment as the computation involves estimates of depreciation, which is less straightforward.
It should be noted that, as a measure of earnings management, this alternative proxy captures just a part of what is captured by the paper’s main proxy. On one hand, income from the sale of investments is a part of income from the sale of fixed assets, which is an extraordinary item under J-GAAP. On the other hand, as depicted in Figure 2, long-term accruals and their discretionary components arise from non-operating activities and extraordinary activities. Thus, this alternative proxy is just one particular channel for earnings management, whereas the main proxy is a more encompassing measure of earnings management. As in the anecdotal evidence provided under Footnote 30, some other channels to manage earnings are via misreporting income or loss of subsidiaries and affiliates. These other channels are non-operating items, and are included in the main proxy but not in the alternative proxy. Therefore, the alternative proxy may be insignificant when earnings management prevails, and the replicated results may be different from the main results. However, because the alternative proxy is a part of the main proxy, the significance of the alternative proxy enhances the validity of the main proxy as capture of earnings management.

Income from the sale of investments is approximated as the net cash flow from investment activities (namely, the cash proceeds from selling investments minus the cash disbursements for purchasing investments) minus the beginning investment amount, and plus the ending investment amount. The net cash flow is the Worldscope item “Increase in Investment from Cash Flow Statement” for the examined year. The investments amounts are retrieved from the Worldscope item “Investment in Unconsolidated Subsidiaries”, which represents investments in unconsolidated subsidiaries and affiliates. As in Herrmann et al. (2003), income from the sale of investments is scaled by lagged total assets, and adjusted by the median of industry firms in the concurrent year to help control for correlation across firms in the same industry and year due to
economic factors unrelated to earnings management. In calculating the industry median income, firms are assigned to industry classifications based on their first two digits of General Industry Classification System developed by Standard & Poor.

Table 7 reports the results of the replication. Panel A shows the distribution of sample acquirers, while Panel B shows the mean of adjustment benchmarks, with the adjustment benchmark being the median of industry firms in the concurrent year. The net cash flow from investment activities (NETINVC) in Year -1 scaled by lagged assets averages 3.49% for acquirers (compared to the benchmark mean of 0.33%). The amount of investments scaled by lagged assets averages 3.54% at the beginning of Year -1 (compared to the benchmark mean of 0.78%), and 3.45% at the end of that year (compared to the benchmark mean of 0.76%). Income from the sale of investments by acquirers is estimated at 3.53% on average (compared to the benchmark mean of 0.57%). Adjusted income from the sale of investments by sample acquirers averages 2.33%, which is significantly positive at p-value = 0.0004 in a one-tailed test. Its median is 0.57%, also significant at p-value = 0.0148 in a one-tailed test.

The above results suggest that sample acquirers have significantly larger income from the sale of investments than the benchmark in Year -1 relative to their merger announcements. These results are consistent with acquirers’ managing earnings prior to their mergers. Overall, the replication based on the alternative proxy lends validity to the main proxy of earnings management.

7.3 Acquirer affiliation with target prior to merger

It is possible that the affiliation between acquirer and target prior to merger might affect acquirer earnings management behavior. To assess its potential effect, I estimate this affiliation by measuring the percentage of target shares owned by acquirer prior to merger. Then, I replicate
the Table 6 regressions with that affiliation variable as an additional control for a robustness test. The affiliation variable is not significant, while all other variables of Table 6 remain consistent with the main results.\textsuperscript{28} From this robustness test, acquirer-target pre-merger affiliation does not affect acquirer earnings management behavior significantly.

7.4 Limitations

Several limitations of this study should be noted. First, the analyses in this paper are a joint test of the accrual model and the earnings management hypothesis. As is true with all studies using the accrual model, the estimate of abnormal accrual may contain error. However, consistency with theories for economic benefit and monitoring cost helps validate the joint test and results. Further, the measure of abnormal accrual is consistent with an alternative proxy for earnings management, which enhances the validity of the paper. Second, the merger acquirers included in this paper are retrieved from Sections 1 and 2 of the Tokyo Stock Exchange. These firms are some of the largest Japanese firms. Generalizations of the paper’s results to smaller firms should be made with caution. Third, some of the paper’s results have weaker statistical significance (significant at p-value <.05 in one-tailed tests), given the small number of observations available for the analyses. Finally, this paper uses a different method from all prior studies to estimate acquirer earnings management (namely, using long-term accruals under Japanese accounting standards). It adds a piece of evidence to the mosaic of evidence on the question whether acquirers manage pre-merger earnings. It is not in the scope of this paper to

\textsuperscript{28} The replication results are not tabulated for conciseness, and are available upon request.
address the methodological issues on discretionary current accruals in the literature on acquirer earnings management.\textsuperscript{29}

8 Anecdotal evidence

This Section relates the case of Livedoor, a well-publicized anecdote of pre-merger accounting manipulation in Japan (Henselmann and Hofmann, 2010; and the news sources cited therein). The Livedoor fraud allegedly occurred via falsifying gains from the sale of stock investments to heighten reported profits in advance of a takeover bid. As discussed before and illustrated in Figures 1 and 2, gains from the sale of stock investments are extraordinary items that fall in long-term accruals.\textsuperscript{30}

Entrepreneur Takafumi Horie built Livedoor by combining a portal site with online brokerage and banking as well as a host of internet services. In just under a decade, Livedoor was transformed from a small home-grown business to a giant conglomerate. In 2005, Livedoor started a takeover bid for Fuji TV, one of Japan’s biggest media groups, although the bid failed in the end. Soon afterwards, in 2006, prosecutors marched into its Tokyo offices to investigate its founder.

\textsuperscript{29} From a data perspective, a major obstacle is that there are not enough data from the data sources (Worldscope and Datastream) for various analyses, due to more limited disclosures by Japanese firms.

\textsuperscript{30} Besides the case of Livedoor, Henselmann and Hofmann (2010) also describe other anecdotes of manipulations that were severe enough to attract investigations by the regulators. Sanyo Electric, which was investigated by Japan’s Securities and Exchange Surveillance Commission (SESC) in 2007, and Nikko Cordial, which was investigated by the SESC in 2006, were charged of selectively including gains and excluding losses from subsidiaries. Similarly, in the case of Kanebo, investigated by the SESC in 2005, one of the methods to inflate earnings was to exclude subsidiaries with large losses from group earnings. As illustrated in Figures 1 and 2, subsidiaries’ incomes and losses are non-operating items that fall in long-term accruals under J-GAAP.
Horie was accused of falsifying the company’s accounts. The alleged accounting fraud centered on Livedoor’s group financial statements for the fiscal year ending September 30, 2004. Prosecutors said Livedoor used gains from the sale of stock investments to increase its recurring profits, whereas these gains were non-recurrent. The purpose of inflating recurring profit was to meet the company’s earnings forecasts, which prosecutors said had been grossly inflated. After the stock sales failed to raise earnings to meet the company’s earnings forecast, Horie allegedly authorized a plan to book phony sales to make up the difference.

Prosecutors also accused Horie of market manipulation to increase Livedoor’s share price. In March 2004, Livedoor issued new shares under the pretext of swapping them for the shares of two other firms. Livedoor’s share price rose sharply in anticipation of the stock swaps. However the swaps were bogus because the targeted firms were already owned by Livedoor.

After Horie was charged, Livedoor lost 80% of its market value. In March 2007, Horie was found guilty of fraud and sentenced to 2.5 years in prison. Livedoor continued under new management, and was sold to a South Korean internet company in 2010 (Uranaka and Rhee, 2010, Reuters).

9 Conclusion and implications

This paper examines earnings management by Japanese merger acquirers on the Tokyo Stock Exchange. The examination focuses on long-term accruals because in Japan’s practices and standards, earnings management is often carried out via long-term accruals, specifically depreciation, amortization, non-operating items, and extraordinary items. The notion that earnings may be managed via long-term accruals is evidenced by Herrmann et al. (2003), who demonstrate that Japanese managers manage earnings via the sale of assets, a transaction that involves long-term accruals under Japanese accounting standards.
This paper’s findings suggest that Japanese mergers systematically report positive abnormal long-term accruals prior to merger announcements. The results are robust in a replication based on Herrmann et al. (2003)’s method for measuring earnings management. The findings are consistent with the incentive by stock-for-stock acquirers to manage earnings to reduce the cost of the acquisition transaction. Further analyses show that the observed earnings management behavior is consistent with economic theories governing the benefit and cost that can result from earnings management. There is some evidence that the extent of earnings management by acquirers is an increasing function of the conflict with target creditors, because this conflict increases the acquisition cost to acquirer and therefore creates incentive for the acquirer to alleviate this cost via earnings management. There is strong evidence that the extent of earnings management by acquirers is a decreasing function of monitoring by foreign investors and banks, because the large cost it takes to bypass their monitoring systems creates disincentive for earnings management.

This paper suggests two policy implications for regulators and corporate monitors in global markets. First, the incentive to manage earnings by stock-for-stock acquirers seems to exist across many different countries and regulatory regimes. And second, conflict between acquirer and target creditors may be important enough, especially in credit-oriented markets, to affect acquirer behavior.

The paper also has implication for earning management research in a global context. After identifying the incentive for earnings management with regards to a specific transaction in different countries, researchers who consider exploitable areas within the bounds of the practiced standards can better detect earnings management via that transaction in the respective countries.
References


<table>
<thead>
<tr>
<th>Year of Merger</th>
<th>No of Acquirers</th>
<th>No of Payments based only on stock swap</th>
<th>No of Acquirers in TSE Section 1</th>
<th>No of Targets in TSE Section 1</th>
<th>Cumulative Frequency of Acquirers</th>
<th>Cumulative Percent of Acquirers (%)</th>
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<td>3</td>
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<td><strong>Total</strong></td>
<td><strong>133</strong></td>
<td><strong>125</strong></td>
<td><strong>127</strong></td>
<td><strong>85</strong></td>
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This Table describes the sample acquirers. Acquisitions are identified from a search for Tokyo Stock Exchange (TSE) firms delisted during 1990-2004. This search method is similar to Loughran and Vijh (1997) who identify acquisitions among firms delisted from major U.S. exchanges. The TSE publishes the names of delisted firms and the reason for delisting. Japan Company Handbooks and Lexis-Nexis news are referenced to gain additional insight for selecting only mergers where the targets become totally absorbed in the acquirers without forming new entities. Mergers that result in new entities are excluded because they do not have price and operating history prior to the merger, nor can it be clear which of the parties are acquirers or targets. Mergers involving financial companies are excluded as commonly done in prior research because they are subject to special regulations. Mergers involving foreign firms are also excluded because of different motivations for cross-border deals.
Table 2  Summary of variables

(All variables are reported in percentage, except Market Capitalization which is reported in billion yens)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
<th>Source</th>
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<td>0.75</td>
<td>8.50</td>
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<td>ABAC</td>
<td>121</td>
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<td>0.89</td>
<td>9.49</td>
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<tr>
<td>TACAP (billion yens)</td>
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<td>63.67</td>
<td>18.29</td>
<td>117.66</td>
<td>WS</td>
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<tr>
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<td>10.89</td>
<td>39.29</td>
<td>WS</td>
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<td>TADEBT</td>
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<td>36.72</td>
<td>36.29</td>
<td>26.26</td>
<td>WS</td>
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<td>BBOR</td>
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<td>KEI</td>
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<td>28.97</td>
<td>IGJ</td>
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<tr>
<td>FOR</td>
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<td>8.60</td>
<td>11.68</td>
<td>JCH</td>
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<td>CAP (billion yens)</td>
<td>133</td>
<td>853.64</td>
<td>227.12</td>
<td>2064</td>
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<td>0.84</td>
<td>0.85</td>
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<td>GRO</td>
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<td>40.86</td>
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<td>POST99</td>
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<td>GDPR</td>
<td>133</td>
<td>0.00</td>
<td>-1.09</td>
<td>2.07</td>
<td>DS</td>
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</table>

Data sources: Worldscope (WS), Datastream (DS), Japan Company Handbooks (JCH), Industrial Groupings in Japan (IGJ), and Lexis-Nexis (LN).

UBAC is unadjusted abnormal accrual of acquirer, estimated via the Jones (1991) model and long-term accrual based on depreciation, amortization, non-operating items, and extraordinary items. ABAC is abnormal accrual of acquirer adjusted for a company concurrently matched to acquirer by principal industry, size, and book-to-market ratio. TACAP is target market capitalization. DEALR is deal ratio, measured as the ratio between target and acquirer market capitalizations. TADEBT is target debt ratio, the ratio between total debts and total assets. BBOR is the ratio of acquirer total borrowings from all bank sources and acquirer total assets. KEI is keiretsu cross-holdings, measured as the holdings of keiretsu firms in acquirer relative to the top 10 shareholders. FOR is foreign shareholdings in acquirer. CAP is acquirer market capitalization. ROA is acquirer return on assets. GRO is acquirer three-year annualized sales growth in the three years leading to merger announcement. DEBT is acquirer debt ratio, the ratio between total debts and total assets. POST99 is a dummy denoting whether the merger announcement occurs after 1999. GDPR is the growth rate of Japan’s real seasonally adjusted GDP in the year prior to merger announcement. Except where it is mentioned otherwise, all variables are taken in the year prior to merger announcement. All variables are in percentage, except for TACAP and CAP, which are in billion yens.
Table 3  Summary measures of abnormal accruals (Scaled by lagged asset)

<table>
<thead>
<tr>
<th>All Measures scaled by total assets in Year -2</th>
<th>Panel A – Acquirer Sample</th>
<th>Panel B – Match Sample</th>
<th>Panel C – Acquirers adjusted for their Matches</th>
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<tbody>
<tr>
<td>Net Income</td>
<td></td>
<td></td>
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<tr>
<td>Mean (p-value)</td>
<td>0.84% (0.00)***</td>
<td>2.90% (0.00)***</td>
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<tr>
<td>Median (p-value)</td>
<td>0.85% (0.00)***</td>
<td>1.99% (0.00)***</td>
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</tr>
<tr>
<td>Standard Deviation</td>
<td>3.91%</td>
<td>3.83%</td>
<td></td>
</tr>
<tr>
<td>% Positive</td>
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<td>88%</td>
<td></td>
</tr>
<tr>
<td>Operating Cash Flow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (p-value)</td>
<td>12.95% (0.00)***</td>
<td>13.97% (0.00)***</td>
<td></td>
</tr>
<tr>
<td>Median (p-value)</td>
<td>11.03% (0.00)***</td>
<td>13.16% (0.00)***</td>
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</tr>
<tr>
<td>Standard Deviation</td>
<td>38.85%</td>
<td>7.22%</td>
<td></td>
</tr>
<tr>
<td>% Positive</td>
<td>98%</td>
<td>100%</td>
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<tr>
<td>Total Accrual</td>
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<td></td>
</tr>
<tr>
<td>Mean (p-value)</td>
<td>-12.11% (0.00)***</td>
<td>-11.07% (0.00)***</td>
<td></td>
</tr>
<tr>
<td>Median (p-value)</td>
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<td>-10.77% (0.00)***</td>
<td></td>
</tr>
<tr>
<td>Standard Deviation</td>
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<td>5.05%</td>
<td></td>
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<tr>
<td>% Positive</td>
<td>1.5%</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Abnormal Accrual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (p-value)</td>
<td>1.41% (0.03)**</td>
<td>-0.46% (0.11)</td>
<td>1.77% (0.02)**</td>
</tr>
<tr>
<td>Median (p-value)</td>
<td>0.75% (0.02)**</td>
<td>-0.34% (0.14)</td>
<td>0.89% (0.01)**</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>8.50%</td>
<td>4.40%</td>
<td>9.49%</td>
</tr>
<tr>
<td>% Positive</td>
<td>53%</td>
<td>43%</td>
<td>52%</td>
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</table>
This table shows abnormal accruals estimated in the fiscal year prior to merger announcement. Total accrual is the difference between net income and operating cash flow. The basic model to estimate abnormal accrual is the Jones (1991) model: \( TA_{it} = 1/Asset_{it-1} + a^*\Delta Rev_{it} + b^*PPE_{it} + \epsilon_{it} \), where \( TA_{it} \) is total long-term accrual of firm \( i \) in year \( t \) scaled by lagged total asset, \( Asset_{it-1} \). \( \Delta Rev_{it} \) is change in net revenues and \( PPE_{it} \) is gross property, plant, and equipment, both scaled by \( Asset_{it-1} \). The estimation is based on a cross-sectional sample of Tokyo Stock Exchange firms for each combination of industry (two-digit Worldscope) and year. Abnormal accrual of a firm is the error term in the above regression after extending firm values to the coefficients estimated based on the cross-section in the concurrent year.

The match of acquirer is defined as a Japanese firm of the same principal industry as the acquirer, and being the closest in size, and book-to-market ratio in the concurrent year to the acquirer.

P-values are shown at one-tailed values. ***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.
Table 4  Regression of abnormal accrual on the pool of acquirers and matches

\[ \text{BAC}_{it} = \beta_0 + \beta_1 \text{ACQDUM}_{it} + \beta_2 \text{CAP}_{it} + \beta_3 \text{ROA}_{it} + \beta_4 \text{GRO}_{it} + \beta_5 \text{DEBT}_{it} + \beta_6 \text{POST99}_{it} + \beta_7 \text{GDPR}_{it} + \varepsilon_{it} \]

These regressions are performed on the pooled sample including both acquirers and their matches. The match of an acquirer is defined as a Japanese firm of the same principal industry as the acquirer, and is the closest to the acquirer in market capitalization and book-to-market ratio in the concurrent year.

BAC is abnormal accruals estimated in the fiscal year prior to merger announcement. Total accrual is the difference between net income and operating cash flow. The basic model to estimate abnormal accrual is the Jones (1991) model: \( TA_{it} = 1/\text{Asset}_{it-1} + a*\Delta\text{Rev}_{it} + b*\text{PPE}_{it} + \varepsilon_{it} \), where \( TA_{it} \) is total long-term accrual of firm i in year t scaled by lagged total asset, \( \text{Asset}_{it-1} \). \( \Delta\text{Rev}_{it} \) is change in net revenues and \( \text{PPE}_{it} \) is gross property, plant, and equipment, both scaled by \( \text{Asset}_{it-1} \). The estimation is based on a cross-sectional sample of Tokyo Stock Exchange firms for each combination of industry (two-digit Worldscope) and year. Abnormal accrual of a firm is the error term in the above regression after extending firm values to the coefficients estimated based on the cross-section in the concurrent year.

ACQDUM is a dummy equal 1 if the firm is an acquirer, and 0 otherwise. CAP is market capitalization, ROA is acquirer return on assets, GRO is three-year annualized sales growth in the three years leading to merger announcement, DEBT is total debts over total assets, POST99 is a dummy denoting that the merger announcement happens after 1999, and GDPR is the growth rate of seasonally adjusted GDP in the year prior to merger announcement. Except where it is mentioned otherwise, all measures are taken in the fiscal year prior the merger announcement. P-values are shown at one-tailed values. All variables are in percentage, except for ACQDUM which is a dummy equal 1 or 0, and CAP which is in billion yens.

***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.

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<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
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<td>1.42**</td>
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<td>+</td>
<td>(0.0099)***</td>
<td>(0.0246)**</td>
<td>(0.0151)**</td>
<td>(0.0319)**</td>
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<td>(0.0874)*</td>
<td>(0.0874)*</td>
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<td>(0.0559)*</td>
<td>(0.0559)*</td>
<td>(0.0559)*</td>
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<td>3.91</td>
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<tr>
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<td>0.0003***</td>
<td>0.0003***</td>
<td>&lt;.0001***</td>
<td>0.0010***</td>
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<td>R-square</td>
<td>5.57%</td>
<td>6.79%</td>
<td>8.13%</td>
<td>7.22%</td>
<td>11.67%</td>
</tr>
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</table>
Pearson (Spearman) correlation coefficients are reported above (below) the diagonal. Significance at p-values less than 10% (one-tailed) are in bold. UBAC is unadjusted abnormal accrual of acquirer, estimated via the Jones (1991) model and long-term accrual based
on depreciation, amortization, non-operating items, and extraordinary items. ABAC is abnormal accrual of acquirer adjusted for a company matched to acquirer by principal industry, size, and book-to-market ratio in the concurrent year as acquirer. DEALR is deal ratio, measured as the ratio between target and acquirer market capitalizations. TADEBT is target debt ratio, the ratio between total debts and total assets. BBOR is the ratio of acquirer total borrowings from all bank sources and acquirer total assets. KEI is keiretsu cross-holdings, measured as the holdings of keiretsu firms in acquirer relative to the top 10 shareholders. FOR is foreign shareholdings in acquirer. CAP is acquirer market capitalization. ROA is acquirer return on assets. GRO is acquirer three-year annualized sales growth in the three years leading to merger announcement. DEBT is acquirer debt ratio, the ratio between total debts and total assets. POST99 is a dummy denoting that the merger announcement occurs after 1999. GDPR is the growth rate of Japan’s real seasonally adjusted GDP. Except where it is mentioned otherwise, all variables are taken in the year prior to merger announcement.
Table 6  Regression of acquirer abnormal accrual

\[
\text{UBAC/ABAC}_{it} = \beta_0 + \beta_1 \text{DEALR}_{it} + \beta_2 \text{TADEBT}_{it} + \beta_3 \text{BBOR}_{it} + \beta_4 \text{KEI}_{it} + \beta_5 \text{FOR}_{it} + \beta_6 \text{CAP}_{it} + \\
\beta_7 \text{ROA}_{it} + \beta_8 \text{GRO}_{it} + \beta_9 \text{DEBT}_{it} + \beta_{10} \text{POST99}_{t} + \beta_{11} \text{GDPR}_{t} + \varepsilon_{it}
\]

<table>
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<tr>
<th>Sign Expectation</th>
<th>UBAC</th>
<th>ABAC</th>
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<tbody>
<tr>
<td>Intercept</td>
<td>-1.8897</td>
<td>-0.7059</td>
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<td></td>
<td>(0.2509)</td>
<td>(0.4133)</td>
</tr>
<tr>
<td>DEALR H2</td>
<td>0.0129</td>
<td>0.0043</td>
</tr>
<tr>
<td></td>
<td>(0.1920)</td>
<td>(0.4115)</td>
</tr>
<tr>
<td>TADEBT H3</td>
<td>0.0053</td>
<td>0.0511</td>
</tr>
<tr>
<td></td>
<td>(0.3768)</td>
<td>(0.0283)**</td>
</tr>
<tr>
<td>BBOR H4</td>
<td>-0.1704**</td>
<td>-0.2049**</td>
</tr>
<tr>
<td></td>
<td>(0.0483)**</td>
<td>(0.0495)**</td>
</tr>
<tr>
<td>KEI H5</td>
<td>-0.0204</td>
<td>-0.0247</td>
</tr>
<tr>
<td></td>
<td>(0.2415)</td>
<td>(0.1996)</td>
</tr>
<tr>
<td>FOR H6</td>
<td>-0.0481</td>
<td>-0.1006</td>
</tr>
<tr>
<td></td>
<td>(0.0125)**</td>
<td>(0.0068)**</td>
</tr>
<tr>
<td>CAP</td>
<td>-0.0002</td>
<td>-0.0004</td>
</tr>
<tr>
<td></td>
<td>(0.1187)</td>
<td>(0.0399)**</td>
</tr>
<tr>
<td>ROA +/-</td>
<td>-0.2054</td>
<td>-0.2706</td>
</tr>
<tr>
<td></td>
<td>(0.1615)</td>
<td>(0.0666)*</td>
</tr>
<tr>
<td>GRO</td>
<td>0.5079</td>
<td>0.4075</td>
</tr>
<tr>
<td></td>
<td>(0.1229)</td>
<td>(0.1849)</td>
</tr>
<tr>
<td>DEBT H7</td>
<td>0.1799</td>
<td>0.1427</td>
</tr>
<tr>
<td></td>
<td>(0.0674)*</td>
<td>(0.1568)</td>
</tr>
<tr>
<td>POST99 H12</td>
<td>0.0276</td>
<td>0.0561**</td>
</tr>
<tr>
<td></td>
<td>(0.1857)</td>
<td>(0.0415)**</td>
</tr>
<tr>
<td>GDPR H11</td>
<td>0.2844</td>
<td>0.1431</td>
</tr>
<tr>
<td></td>
<td>(0.1586)</td>
<td>(0.3246)</td>
</tr>
<tr>
<td>Fixed Year Effects</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>N</td>
<td>125</td>
<td>121</td>
</tr>
<tr>
<td>Model F</td>
<td>18.99</td>
<td>460.07</td>
</tr>
<tr>
<td>Prob&gt;F Model F</td>
<td>&lt;.0001***</td>
<td>&lt;.0001***</td>
</tr>
<tr>
<td>R-square</td>
<td>0.1846</td>
<td>0.1478</td>
</tr>
</tbody>
</table>

UBAC is unadjusted abnormal accrual of acquirer, estimated via the Jones (1991) model using long term accrual based on depreciation, amortization, non-operating items, and extraordinary items. ABAC is abnormal accrual of acquirer adjusted for a company matched to acquirer by principal industry, size, and book-to-market ratio in the concurrent year as acquirer. DEALR is deal ratio, measured as the ratio between target and acquirer market capitalizations. TADEBT is target debt ratio, the ratio between total debts and total assets. BBOR is the ratio of acquirer total borrowings from all bank sources and acquirer total assets. KEI is keiretsu cross-holdings, measured as the holdings of keiretsu firms in acquirer relative to the top 10 shareholders. FOR is foreign shareholdings in acquirer. CAP is acquirer market capitalization. ROA is acquirer return on assets. GRO is acquirer three-year annualized sales growth in the three years leading to merger announcement. DEBT is acquirer debt ratio, the ratio between total debts and total assets. POST99 is a dummy denoting that the merger announcement occurs after 1999. GDPR is the growth rate of Japan’s real seasonally adjusted GDP in the year prior to merger announcement. Except where it is mentioned otherwise, all variables are taken in the year prior.
to merger announcement. All variables are in percentage, except for ACQDUM which is a dummy equal 1 or 0, and CAP which is in billion yens. P-values are shown at one-tailed values. ***Significant at <0.01; ** Significant at <.05; * Significant at <0.1.
Table 7  Summary measures of income from sale of securities investments (scaled by lagged asset)

<table>
<thead>
<tr>
<th></th>
<th>Panel A – Acquirers</th>
<th>Panel B – Mean of Industry Medians</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETINVC</td>
<td>Mean 3.49%</td>
<td>Median 1.32% [0.33%]</td>
</tr>
<tr>
<td>BEGINV</td>
<td>Mean 3.54%</td>
<td>Median 2.83% [0.78%]</td>
</tr>
<tr>
<td>ENDINV</td>
<td>Mean 3.45%</td>
<td>Median 2.82% [0.76%]</td>
</tr>
<tr>
<td>INCSALE</td>
<td>Mean 3.53%</td>
<td>Median 1.33% [0.57%]</td>
</tr>
<tr>
<td>INCSALE adjusted by Industry median</td>
<td>Mean 2.33% (p-value = 0.0004 one-tailed)</td>
<td>Median 0.57% (p-value = 0.0148 one-tailed)</td>
</tr>
</tbody>
</table>

NETINVC is the net cash flow from investment activities in Year -1 scaled by lagged total assets. BEGINV is the amount of investments in unconsolidated subsidiaries and affiliates at the end of Year -2 scaled by lagged total assets. ENDINV is the amount of investments in unconsolidated subsidiaries and affiliates at the end of Y-1 scaled by lagged total assets. INCSALE, income from the sale of investments, is estimated as the net cash flow from investment activities, minus the beginning investment amount and plus the ending investment amount, scaled to lagged total assets. Adjusted INCSALE is the difference between INCSALE and the industry median in the concurrent year.
CONSOLIDATED INCOME STATEMENT
From April 1, X1 to March 31, X2

I. Sales

II. Cost of Sales
Gross profit (loss)

III. Selling, general and administrative expenses

IV. Non-operating income
Interest income
Dividend income
Gain on sale of marketable securities
Amortization of consolidated adjustment
Equity in earnings of unconsolidated subsidiaries and affiliates

V. Non-operating expenses
Interest expense
Loss on sale of marketable securities
Equity in deficit of unconsolidated subsidiaries and affiliates

V. Ordinary income (loss)

VI. Extraordinary gains
Prior period adjustments
Gain on sale of fixed assets

VII. Extraordinary losses
Prior period adjustments
Loss on sale of fixed assets
Loss due to disaster

Income (loss) before income taxes
Income taxes:
Current
Deferred
Minority interests
Net income (loss)
Figure 2  Distinguishing short-term versus long-term accruals

CONSOLIDATED INCOME STATEMENT
From April 1, X1 to March 31, X2

\[
\begin{align*}
\text{Operating Income} &= \{ \text{Cash Sales} \} - \{ \text{Cash Disbursements for Cost of Sales and SGA} \} + \{ \text{Short-Term Accruals} \} + \{ \text{Depreciation, Amortization} \} \\
\text{Operating Income} &= \{ \text{Non-operating income} \} - \{ \text{Non-operating expenses} \} + \{ \text{Extraordinary gains} \} - \{ \text{Extraordinary losses} \} + \{ \text{Net Income} \} \\
\text{Operating Cash Flow (OCF)} &= \text{Cash Sales} - \text{Cash Disbursements} + \text{Short-Term Accruals} \\
\text{Operating income} &= \text{OCF} + \text{Depreciation and Amortization} \\
\text{Net Income (NI)} &= \text{OCF} + \text{Long-Term Accruals}
\end{align*}
\]
Appendix: Variable definition

This Appendix describes all variables used in this study. Unless otherwise noted, variables are from Fiscal Year -1 relative to Fiscal Year 0 when the merger announcement occurs.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition and Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variables for computing abnormal accruals</strong></td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>Total accrual (TA) is total long-term accrual measured by $TA_{it} = NI_{it} - OCF_{it}$, where NI is net income, and OCF is operating cash flow as defined below.</td>
</tr>
<tr>
<td>OCF</td>
<td>Operating cash flow (OCF) is measured as sales minus cost of goods sold and selling and administrative expenses exclusive of depreciation and goodwill expenses. (Source: Worldscope)</td>
</tr>
<tr>
<td>BAC</td>
<td>Abnormal accrual (BAC) or abnormal accrual, is measured by $\epsilon_{it} = TA_{it} - \left(1/\text{Asset}<em>{it-1} + a*\Delta\text{Rev}</em>{it} + b*\text{PPE}<em>{it}\right)$, where a and b are the coefficients estimated from the same regression: $TA</em>{it} = 1/\text{Asset}<em>{it-1} + a*\Delta\text{Rev}</em>{it} + b*\text{PPE}<em>{it} + \epsilon</em>{it}$. $TA$ is NI$<em>{it}$- OCF$</em>{it}$ as defined above, Asset$<em>{it-1}$ is lagged total asset, $\Delta$Rev$</em>{it}$ is change in net revenues, and PPE$_{it}$ is gross property, plant, and equipment, both scaled by lagged total asset. The regression estimation is based on a cross-sectional sample of Tokyo Stock Exchange firms for each combination of industry (two-digit Worldscope) and year. (Estimation using Worldscope data)</td>
</tr>
<tr>
<td>UBAC</td>
<td>Unadjusted abnormal accrual (UBAC) is the abnormal accrual (BAC) of an acquirer, with BAC measured as defined above.</td>
</tr>
<tr>
<td>ABAC</td>
<td>Adjusted abnormal accrual (ABAC) is the difference between the abnormal accrual of an acquirer and that of its match firm. $ABAC = BAC_{\text{Acquirer}} - BAC_{\text{Match}}$, with BAC measured as defined above, and the match is defined as a Japanese firm of the same industry as the acquirer, and of the closest size and book-to-market ratio in the concurrent year to the acquirer. A match firm is used to control for performance. (Estimation using Worldscope data)</td>
</tr>
<tr>
<td>TACAP</td>
<td>Target Market Capitalization (TACAP) is the market value of target equity in billion yens. (Source: Worldscope)</td>
</tr>
<tr>
<td><strong>Variable for testing H1</strong></td>
<td></td>
</tr>
<tr>
<td>ACQDUM</td>
<td>ACQDUM is a dummy variable equal 1 if the firm is an acquirer, or 0 otherwise.</td>
</tr>
<tr>
<td><strong>Variable for testing H2</strong></td>
<td></td>
</tr>
<tr>
<td>DEALR</td>
<td>Deal Ratio (DEALR) is the ratio between target and acquirer market capitalizations. (Source: Worldscope)</td>
</tr>
<tr>
<td><strong>Variable for testing H3</strong></td>
<td></td>
</tr>
<tr>
<td>TADEBT</td>
<td>Target Debt Ratio (TADEBT) is the ratio between target’s total debt and its total asset. (Source: Worldscope)</td>
</tr>
<tr>
<td><strong>Variable for testing H4</strong></td>
<td></td>
</tr>
<tr>
<td>BBOR</td>
<td>BBOR is Bank Borrowings by acquirer, measured as the total borrowings by acquirer from banks scaled by total asset (Source: Japan Company Handbooks).</td>
</tr>
<tr>
<td><strong>Variable for testing H5</strong></td>
<td><strong>KEI</strong></td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Variable for testing H6</strong></td>
<td><strong>FOR</strong></td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td><strong>CAP</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ROA</strong></td>
</tr>
<tr>
<td></td>
<td><strong>GRO</strong></td>
</tr>
<tr>
<td></td>
<td><strong>DEBT</strong></td>
</tr>
<tr>
<td></td>
<td><strong>POST99</strong></td>
</tr>
<tr>
<td></td>
<td><strong>GDPR</strong></td>
</tr>
<tr>
<td><strong>Variables for computing income from sale of securities investments</strong></td>
<td><strong>NETINVC</strong></td>
</tr>
<tr>
<td></td>
<td><strong>BEGINV</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ENDINV</strong></td>
</tr>
<tr>
<td></td>
<td><strong>INCSALE</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ADINCSALE</strong></td>
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</table>