EARNINGS MANAGEMENT AS PREDICTOR OF ACQUISITION PROBABILITY

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ABSTRACT

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There are many reasons why firms choose to manage earnings. Planning to acquire another company may be one of them. This paper tests the hypothesis that the probability of making an acquisition is positively related to a firm's level of earnings management, as proxied by current and total discretionary accruals. We also test the hypothesis that the level of discretionary accruals helps to predict the type of target to be acquired. We expect that firms planning to acquire a target in an emerging market would manage earnings more than a firm making an acquisition in a developed market.

Firms financing their acquisitions with shares are also expected to have a high level of earnings management. The results support the hypothesis that the level of earnings management does indeed help predict the likelihood of making an acquisition, and that acquirers manage earnings to a higher degree than do nonacquirers. Acquirers paying with shares have highest discretionary accruals. In contrast to our second hypothesis, we find that acquirers of US firms have the highest discretionary accruals. Finally, firms acquiring targets from emerging economies earn highest abnormal returns around the time the acquisitions are announced.

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1. Introduction

Accruals are revenues and expenses that are yet to be cashed or disbursed but are already recorded in the financial statements for the purpose of recognizing them in the fiscal year to which the underlying transaction occurred. If used properly, they allow a company to appropriately match revenues and expenses and to accurately reflect its financial situation. *Discretionary* accruals are for revenues and expenses that are not driven by actual transactions but are recorded at management's discretion, often in order to smooth the company's earnings (Moses, 1987). Firms may use accruals to temporarily inflate their earnings, often in order to meet analysts' forecasts or other pre-specified targets (Kasznik, 1999; Burgstahler and Eames, 1998).

Companies planning to make an acquisition may have additional incentives to manage their earnings, especially if they intend to pay for the targets with stock (Erickson and Wang, 1996). Since stock-for-stock transactions involve the bidder estimating the value of the target and choosing an offer price, there exists a risk that the estimate is wrong and the offer is too high. The situation may be easier for firms acquiring targets that are public companies listed on well-known stock exchanges, as they would have access to more information and be better able to calculate the value of the firm to be acquired. Information about privately owned firms may be much harder to obtain, which may make it more difficult for bidders to value these firms (Baik et al., 2007).

Despite the fact that many firms manage earnings before announcing mergers and acquisitions (Koumanakos, 2005), these corporate events can still create value for

shareholders, since abnormal returns may be earned by the bidder, the target or both. Abnormal returns are returns realized around acquisition announcements that are higher than the expected returns earned by an appropriate benchmark. Target shareholders have been found to most often benefit from being acquired, as bidders offer premiums over current share prices in order to persuade existing shareholders to tender their shares (Andrade et at., 2001).

In contrast to targets, the returns to acquiring firms are, on average, zero or slightly negative (Jensen and Ruback, 1983; Heron and Lie, 2002). This may be, in part, because investors, recognizing the pre-merger earnings management, may reduce the bidders' stock price after the acquisition is announced. Nevertheless, it can be argued that acquirers of targets from *emerging* economies may earn positive abnormal returns if investors believe that despite the earnings management, the acquisition will produce value by unlocking and utilizing the potential of targets from rapidly emerging economies.

Moreover, keeping in mind the hypothesized relationship between acquisitions and earnings management and assuming that observed firm characteristics may be used to predict the occurrence of making certain corporate decisions, one may attempt to calculate the probability that a firm will make an acquisition, using its level of earnings management as the explanatory variable. More specifically, the multinomial logistic regression may be used, as it allows the researcher to use firm characteristics as predictors of probability that firms choose one of several available alternatives. Two alternative measures of earnings management, the level of *total* or *current* accruals, will

be used to estimate the likelihood that a firm will either make or not make an acquisition. In the case of an acquisition, we will also estimate the likelihood of the acquirer choosing a target from the US, other developed country or from an emerging economy.

The remainder of this paper is organized as follows. Section two outlines the relevant prior research on the topic of earnings management, discusses how it relates to mergers and acquisitions, and states the hypotheses and predictions. Section three describes the research design and sample selection. Section four presents the results. Section five summarizes and concludes the paper.

2. Relevant prior research and hypothesis development

The literature on earnings management is quite extensive. Researchers have identified numerous variables related to positive discretionary accruals. For example, aligning reported earnings with forecasts made by management has been recognized by Kasznik (1999) as one of the reasons why firms manage earnings. Kasznik (1999) posits that avoiding adverse consequences of prediction inaccuracy, such as litigation or loss of reputation, may be one of the incentives to engage in earnings management. His results further show that managers only use accruals to manage earnings when earnings are to fall below expectations. In instances where earnings turn out to be higher than forecasted, managers may prefer to revise their forecasts rather than engage in accounting choices that decrease income.

Dutta and Gigler (2002) model earnings management and discuss circumstances under which it is optimal for a firm's shareholders to allow managers to smooth

earnings. They conclude that managers who are allowed to make earnings forecasts will be *less* likely to engage in earnings management. Nonetheless, the authors still find that earnings management is likely to take place, even when managers are allowed to forecast earnings, especially after a high (rather than low) earnings forecast.

In an empirical paper, Burgstahler and Dichev (1997) show that earnings are managed upward in order for firms to avoid reporting slightly negative earnings figures. They find that 30% to 44% of firms, which would otherwise have to report slightly negative earnings, use discretion to increase earnings to a point at which reported earnings are slightly positive. Similarly, between 8% and 12% of firms, which would otherwise have to report earnings decreases (from previous periods), use discretion to be able to report earnings increases. Burgstahler and Dichev (1997) stipulate that firms may be managing earnings because reporting a decrease in earnings or an accounting loss is just too costly.

Firm performance has also been linked to the level of income-increasing accruals. Lee, Li, and Yue (2006) find evidence consistent with the view that better performing firms or those expected to experience earnings growth, manage earnings upwards by a larger extent because their share price is more responsive to such actions. In other words, better performing firms benefit more from over-reporting earnings because their equity appreciates in response to earnings increases by a greater degree.

Another stream in the literature supports the view that firms manage earnings if they are at risk of violating their debt covenants. For example, DeFond and Jiambalvo (1994) present evidence of positive abnormal accruals in the year prior to debt covenant

violation, suggesting that highly-leveraged firms are more likely to engage in earnings management. Beatty and Weber (2003) show that firms engage in income-increasing accounting changes if their debt covenants allow them to do so, and when such changes affect contract calculations. However, Jelinek (2007) demonstrates that leverage increases have a negative effect on the level of earnings management. Her results show that compared to consistently highly-leveraged firms, companies that increase leverage during a 5-year period report negative abnormal accruals. This suggests that leverage levels and leverage increases affect the level of earnings management differently.

Corporate governance issues have also been linked to earnings management. For instance, Klein (2006) shows that large American firms where less than 50% of the members of the audit committee were independent directors were more likely to manage earnings. A positive relationship was also found between CEO presence on board of directors' compensation committee and earnings management. A large, non-management blockholder on an audit committee was found to have a negative impact on the level of earnings management. Klein's findings suggest that board independence may be related to a decrease in earnings management and that large, non-management shareholders can act as monitors to prevent excessive manipulation of earnings. In addition, Becker et al. (1998) show that companies audited by higher quality firms (the Big Six) report lower discretionary accruals because better auditors monitor management's accounting choices more closely, and are more likely to object to earnings management.

Management of earnings may also be a symptom of opportunistic behaviour by companies' top executives. Cheng and Warfield (2005) find that managers whose compensation is largely stock-based are more likely to use earnings management to increase the value of their stocks. Specifically, the results show that managers with high equity incentives report earnings that meet or exceed analysts' expectations more often. Furthermore, Chan et al. (2006) demonstrate that managers use earnings management to delay conveying bad news to shareholders. Their results show that high accruals predict a decrease in firm's stock returns and an increase in reported negative special items.

Finally, researchers have also found that firms manage earnings in order to manipulate the value of their stocks prior to announcing various corporate events. For example, Teoh, Welch and Wong (1998) find that firms inflate their earnings prior to issuing either an initial or a seasoned public offering in order to maximize the amount of funds raised. This phenomenon explains why there usually is a significant drop in stock returns in the several years following equity issues. Investors who are led to believe that the prospects of a firm are better than they actually are, may overpay for that firm's stock. Once information about the true levels of earnings is revealed by analysts and subsequent earnings reports, investors lose their confidence and company's stock prices drop. Moreover, Erickson and Wang (1999) show that companies use accounting manipulation in order to increase their share price, and thereby reduce the number of stocks they need to exchange in a stock-for-stock merger. In other words, by driving up

their reported earnings through recording discretionary accruals, companies attempt to boost stock prices and reduce the cost of buying a target.

In light of this behaviour, targets also have an incentive to manage earnings and increase their own stock prices (which is similar to requiring a higher premium), but it is harder for them to do so. This is due to the fact that while bidders know in advance which firms they plan to acquire, targets may not have enough time before an offer is made to manage their earnings (Erickson and Wang, 1999).

The relationship between earnings management and acquisitions has also been studied by Louis (2004), who found strong evidence to support the view that firms manage earnings prior to announcing stock-for-stock acquisitions. The presence of positive abnormal accruals in the quarter prior to an acquisition announcement also explains the underperformance of bidders in the post-acquisition period. Similarly, Shivakumar (2000) stipulates that since firms are not able to credibly signal the absence of earnings management, investors assume that all firms announcing acquisitions have managed their earnings and discount their stock prices accordingly.

In light of these results we put forward the following hypotheses:

Hypothesis 1: The level of earnings management can be used as a predictor of the likelihood that a firm will make an acquisition.

Hypothesis 1a: Firms will manage earnings to a higher extent before announcing a stock-based acquisition.

Bidders planning to acquire firms from emerging countries face additional challenges in the emerging markets such as an absence of strong rules and regulations that would

ensure transparent and accurate reporting of firms' earnings (Baik et al., 2007). Therefore, we hypothesize that firms which plan to acquire a company from an emerging economy using stocks to finance the acquisition will manage their earnings to a higher extent, in order to compensate for the relative lack of information about their targets, and to protect themselves against overpayment. Even if firms acquire emerging targets with cash, they may still want to manage earnings because acquisitions affect their financial situations. For example, bidders assume the debts of their targets, which may affect their own leverage ratios and ability to meet debt covenants. Acquisitions may also impact other accounts on the acquirers' financial statements and thus change the overall value of the acquiring firm. Therefore, the following is hypothesized:

Hypothesis 1b: Firms will manage earnings to a higher extent before announcing an acquisition of a target from an emerging economy.

Low abnormal returns and poor post-acquisition performance of bidding firms has been documented by many researchers. For example Fuller, Netter, and Stegemoller (2002) have shown that acquirers earned significantly negative cumulative abnormal returns of minus one percent when they acquired other public firms. In addition, returns were more negative when deals were financed with stocks. Jarrell and Poulsen (1989) state in their summary paper that gains from acquisition announcements may be insignificant when targets of these transactions are much smaller than the bidders. In such cases, abnormal returns earned from the merger may not lead to significant increases in the acquirer's share price because the investment in the target is too small.

Alternatively, observed negative abnormal returns may be due to the fact that shares are used as the payment method in an acquisition, and not because the market does not value the investment choice. Researchers have found that announcements of new equity issues or stock-for-stock transactions lead to decreases in stock prices as investors presume that the issuing firm's shares are overvalued (Smith, 1986; Erickson and Wang, 1999).

Moeller, Schlingemann, and Stulz (2004) find that the bidder's size also has a significant effect on the gains or losses earned by its shareholders from an acquisition announcement. Their data shows that large acquirers fare much worse than do small ones, with the abnormal returns earned by small firms exceeding the returns of large firms by 2.24 percent. They attribute this effect to the fact that large firms pay much higher acquisition premiums than do small bidders.

Returns earned by firms in cross border acquisitions have also been studied. For instance, Santos et al. (2008) in their study of foreign target acquisitions made by US firms, find that bidders only lose when acquiring foreign targets in unrelated industries. In contrast, related acquisitions create value for bidding firm's shareholders, as long as the targets are fairly valued, as compared to their American counterparts. In addition, Chari et al. (2005), find that during the 1988-2003 period, three-week abnormal returns earned by acquirers of targets from emerging markets increased by 1.8%. The positive-return transactions were those in which the acquirer gained control of the emerging-market target. The returns to target firms were also found to be positive. Therefore, the following hypothesis will be tested:

Hypothesis 2: Positive abnormal returns will be earned by firms announcing acquisitions of targets from emerging economies.

3. Research design

3.1. Estimating earnings management

The cross-sectional modified-Jones (1991) model is used to calculate *total* and *current* estimated discretionary accruals, which proxy for earnings management. The modification was proposed by Dechow et. al (1995) in response to the Jones (1991) assumption that revenues are not subject to discretion. The modified-Jones model subtracts the change in accounts receivable from the change in revenues at the second stage of the model, because it assumes that all changes in credit sales in the event period are discretionary.

The cross-sectional version of the modified-Jones model, developed by DeFond and Jiambalvo (1994), involves creating estimation portfolios that consist of firms matched with each sample company on industry (two-digit SIC code) and event-quarter. The model is then estimated for each industry-quarter combination to generate industry-quarter specific estimates of α, β_1, and β_2 that are later combined with sample firm data to calculate estimated discretionary accruals. The model for *total* and *current* accruals is:

$$\frac{TA_{ijq}}{A_{ijq-1}} = \alpha_{jq} + \beta_{1jq}\left(\Delta\frac{REV_{ijq}}{A_{ijq-1}}\right) + \beta_{2jq}\left(\frac{PPE_{ijq}}{A_{ijq-1}}\right) + \varepsilon_{ijq} \quad (1)$$

$$\frac{CurrA_{ijq}}{A_{ijq-1}} = \alpha_{jq} + \beta_{1jq}\left(\Delta\frac{REV_{ijq}}{A_{ijq-1}}\right) + \varepsilon_{ijq} \quad (2)$$

where:

TA_{ijq} = total accruals for firm *i* in estimation portfolio *j* in quarter *q*

$CurrA_{ijq}$ = current accruals for firm *i* in estimation portfolio *j* in quarter *q*

ΔREV_{ijq} = change in revenue (sales) for firm *i* in estimation portfolio *j* in quarter *q*

PPE_{ijq} = gross propery, plant and equipment for firm *i* in estimation portfolio *j* in quarter *q*

A_{ijq-1} = total assets for firm *i* in estimation portfolio *j* in quarter *q-1*

ε_{ijq} = error term for firm *i* in estimation portfolio *j* in quarter *q*

j = j,...,J portfolio index

i = i,...,I firm index

q = q,...,Q quarter index

Total and *current* accruals are calculated as follows:

$$TA_i = \frac{\Delta CA_i - \Delta Cash_i - \Delta CL_i - Dep_i}{A_{iq-1}} \quad (3)$$

$$CurrA_i = \frac{\Delta CA_i - \Delta Cash_i - \Delta CL_i}{A_{iq-1}} \quad (4)$$

Where:

ΔCA_i = quarterly change in current assets of firm *i*

$\Delta Cash_i$ = quarterly change in cash of firm *i*

ΔCL_i = quarterly change in current liabilities of firm *i*

Dep_i = depreciation expense of firm *i*

Although some authors argue that *current* accruals are better able to detect changes in earnings management because they do not include the depreciation expense, which is usually fixed and not easily manipulated on a quarterly basis, both measures are used

here for completion and comparison. Any sample firms for which the absolute value of *total* or *current* accruals is greater than 1 are deleted, following DeFond and Jiambalvo (1994).

All variables in Equation (1) are scaled by lagged total assets in order to reduce heteroskedasticity. The model also includes an intercept term, following Kothari (2005), who argues that it provides an additional control for heteroskedasticity, makes accruals obtained from the model more symmetric, and captures the effects of omitted size variables.

Estimated discretionary *total* and *current* accruals are calculated using industry-quarter specific estimates a_{jq}, b_{1jq} , and b_{2jq} of α_{jq}, β_{1jq}, and β_{2jq} obtained from equation (1), using the following equations:

$$EDTA_{iq} = TA_{iq}/A_{iq-1} - \left[a_{jq} + b_{1jq}\left(\Delta REV_{iq}/A_{iq-1} - \Delta REC_{iq}/A_{iq-1}\right)\right] + b_{2jq}\left(PPE_{iq}/A_{iq-1}\right) \quad (5)$$

$$EDCurrA_{iq} = CurrA_{iq}/A_{iq-1} - \left[a_{jq} + b_{1jq}\left(\Delta REV_{iq}/A_{iq-1} - \Delta REC_{iq}/A_{iq-1}\right)\right] \quad (6)$$

where:

ΔREC_{iq} = change in accounts receivable for firm *i* in quarter *q*

3.2. Measuring abnormal returns

An event study is run in order to check if abnormal returns are earned by acquiring companies around the day acquisitions are announced. Sample acquirers' returns are compared to expected returns earned by an equally-weighted index (the market model):

$$AR_{iq} = R_{iq} - E(R_{iq}) \quad (7)$$

Expected returns are calculated using data from a 150–day estimation period, starting 30 days before the acquisition announcement (i.e. days -181 to -31).

The average abnormal returns averaged across firms for each day in the event period are cumulated over an event window to obtain cumulative average abnormal returns:

$$\overline{CAAR} = \sum_{t=-T}^{T} \overline{AR_t} \quad (8)$$

Where -T to T are days around the acquisition announcement. CAARs are calculated for several event windows, ranging from three days before to three days after the announcement date.

3.3. Predicting probability of acquisition

All sample firms fall in one of four categories: do not make an acquisition during the sample period, or acquire a company from the US, a developed, or an emerging economy. The multinomial logistic model, which is an extension of the generalized logistic model, is used to estimate probabilities of choosing each of these four alternatives:

$$log\left[\frac{j}{1-j}\right] = \alpha + EDA_{iq}\beta_{jq} + u_{jiq} \quad (9)$$

where:

$log\left[\frac{j}{1-j}\right]$ = logarithm of the odds that firm *i* chooses alternative *j*

α = intercept

EDA_{iq} = estimated *current* or *total* discretionary accruals for firm *i* in quarter *q*

β_{jq} = the *j*th parameter of the model

j = j,...,J alternative index

i = i,...,I firm index

u_{jiq} = error term exhibiting a logistic distribution

In the generalized logit, choice is modeled by the characteristics of the individual (in this case, firm) making the choice (So and Kuhfeld, 1995). Since the influence of earnings management on acquisition probability is considered here, the levels of *total* and *current* accruals are used as firm characteristics and explanatory variables. An important limitation of the generalized logit model (as well as of the conditional and multinomial models) is the axiom of Independence of Irrelevant Alternatives (IIA) which states that the utilities from choosing various alternatives are independently distributed and that introducing an extra alternative should not influence the optimal choice (Magnac, 2005). This is a strict restriction, as it requires the odds ratio of any two alternatives to be adjusted anytime a new alternative is added, so that the ratio of the original alternatives remains constant. This is problematic because in some cases the additional alternative is such a close substitute for an existing one that it does not change the probability of choosing between the original alternatives.

In the generalized logit, the odds ratio measures the probability of choosing alternative *j* as compared to not choosing that alternative. In a case where there are *k* number of alternatives to choose from (and k>2), *k-1* regressions need to be estimated, and the model becomes the multinomial logit. The one remaining alternative becomes the baseline to which all other alternatives are compared. In this case, not acquiring is

the baseline choice, thus all odds ratios are comparing the probability of choosing alternative *j* to the probability of not acquiring.

Since there are four alternatives for firms to choose from, three regressions are estimated as follows:

$$log\left[\frac{P(1)}{P(4)}\right] = \alpha + EDA_{iq}\beta_{1q} + u_{1iq} \quad (10)$$

$$log\left[\frac{P(2)}{P(4)}\right] = \alpha + EDA_{iq}\beta_{2q} + u_{2iq} \quad (11)$$

$$log\left[\frac{P(3)}{P(4)}\right] = \alpha + EDA_{iq}\beta_{3q} + u_{3iq} \quad (12)$$

And the probability that in the observed event y firm *i* chooses alternative *j* is given by:

$$P(y_{iq} = j) = \frac{exp(EDA_{iq}\ \beta_j)}{1 + \Sigma_{k=1}^{4} \exp(EDA_{iq}\ \beta_k)}\text{ , j=1,2,3,4.} \quad (13)$$

The multinomial logit model (10) is also expanded to include additional control variables, such as the size of the acquiring firm (log of acquirer assets), its net income adjusted for the industry average, and the number of acquisitions taking place in the acquirer's industry a year prior to its own acquisition. The estimation model is written as follows:

$$\log\left[\frac{j}{1-j}\right] = \alpha + EDA_{iq}\beta_{1jq} + LogSize_{iq}\beta_{2jq} + NIadj_{iq}\beta_{3jq} + PriorAcq_{iq-4}\beta_{4jq-4} + u_{jiq} \quad (14)$$

where:

$log\left[\frac{j}{1-j}\right]$ = logarithm of the odds that firm *i* chooses alternative *j*

α = intercept

EDA_{iq} = estimated *current* or *total* discretionary accruals for firm *i* in quarter *q*

$LogSize_{iq}$ = natural logarithm of firm *i*'s total assets in quarter *q*

$NIadj_{iq}$ = net income of firm *i* in quarter *q* adjusted for industry average

$PriorAcq_{iq-4}$ = number of acquisitions in firm *i*'s industry in prior year

β_{jq} = the *j*th parameter of the model

j = j,...,J alternative index

i = i,...,I firm index

u_{jiq} = error term exhibiting a logistic distribution

For comparison, a simple logistic regression is also run to measure the probability of making an acquisition, regardless of the type of target. The simple logit is identical to the multinomial logit in a case when there are only two alternatives to choose from (j=2). It is also run in a simple version, using only discretionary accruals as predictors, and in an expanded version, which includes the same additional control variables as equation (14) above.

3. 4. Sample selection

This study covers 756 acquisition deals announced between September 1996 and June 2007. Data was downloaded from Security Data Company's database (SDC). To be included in the sample, acquirers had to be US companies traded on the New York Stock Exchange, The American Stock Exchange, or NASDQ, and not be financial firms (SIC codes starting with "6") or electrical utilities (SIC code "4911"). Only firms with four

quarters of accounting and financial data available prior to the acquisition were kept in the sample. Sample acquisitions were either of American firms, firms from other developed economies or firms from emerging economies. The definition of countries with emerging economies is based on the MSCI emerging markets index[1]. Developed markets include Canada, UK, Japan, Australia and countries of Western Europe. Only deals in which the acquirer sought to gain control and in which the payment method was defined were considered. Both completed and uncompleted deals were included in the sample but deals with a "rumoured" or an "unknown" status in SDC were deleted. In cases where firms made multiple acquisitions, only the first transaction in each fiscal quarter was kept in the sample. The final sample includes 548 acquiring firms.

The sample also contains 936 firms that did not make acquisitions during the sample period. These firms were matched with the acquirers on industry and on size, measured as total assets as of the quarter in which acquisition was announced. Stock prices for all firms were downloaded from the Center for Research in Security Prices (CRSP), while the necessary quarterly accounting data was downloaded from Standard and Poor's Compustat.

[1] These countries include Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey. Source http://www.ftse.com/Indices/FTSE_Emerging_Markets/index.jsp and http://www.mscibarra.com/products/indices/licd/em.html

4. Results

Descriptive statistics for sample firms, estimates of earnings management, abnormal accruals around acquisition announcement, and the association between earnings management and probability of making acquisitions are presented below.

4.1. Descriptive statistics

Descriptive statistics for sample firms are presented in Table 1. Panel A compares acquirers and nonacquirers' size, profitability (return on assets), and leverage ratio. Panel B describes the sample deals in terms of payment method and target type.

Due to the matching procedure, the acquirer and the nonacquirer samples consist of firms of similar size, making comparisons between them easier and more meaningful. However, acquirers have lower leverage ratios, suggesting that unused debt capacity may have an effect on the probability of making an acquisition (Harford, 1999). Acquirers also seem to be earning higher returns on assets in three quarters preceding an acquisition.

As can be seen in Panel B, most acquisition deals take place between the years of 1999 and 2000. There are 165 deals in the year 1998, 128 in 1999, and 103 in 2000. The number of deals decreases to 39 in the year 2001 and stays at a lower level until the end of the sample period. Cash is used as the main payment method in most transactions, with 446 acquisitions financed that way. Hybrid deals in which a combination of payment methods is used is the second most common type of acquisition (191 deals), while deals in which firms swap stock are the least frequent (119 deals). Most stock-for-stock transactions are done by firms acquiring American targets (115 deals), with only

four deals financed with stock when the targets are from a developed economy. All acquisitions of targets from emerging economies are either cash-based or are a combination of stock, cash and other payment methods. Pure stock swaps are rare in acquisitions of non-US targets.

4.2. Earnings management

Mean and median estimated discretionary accruals for sample firms are presented in Table 2. Significantly higher *current* accruals of the acquiring firms imply that this group of companies manages earnings to a larger extent in the four quarters preceding acquisition announcements, which is consistent with Hypothesis 1. The difference in average *total* accruals between acquirers and nonacquirers is not statistically significant, although the absolute numbers are higher for acquirers. This might be due to the fact that *total* accruals are less able to detect changes in quarterly earnings management, since they include depreciation expense, which is usually fixed and not easily changed in the short term (i.e. from quarter to quarter).

Table 3 reports *total* and *current* accruals for acquirers and nonacquirers, with the acquirer accruals broken up by target type. Both *total* and *current* accruals are highest for firms acquiring *US* targets, implying that this group of companies manages earnings the most. This result is not consistent with Hypothesis 1b which states that acquirers manage earnings because of uncertainty about targets from emerging economies. It is, however, consistent with the theory that investors expect firms that are planning to conduct acquisitions to manage earnings and their expectations are reflected in lower share prices. In order to compensate for this, firms manage their earnings upward in

order to regain some of the lost value. Acquirers of targets from *developed* markets have slightly negative accruals in the quarter prior to announcing an acquisition. This may mean that they anticipate a decrease in profits around the time an acquisition is completed or that in order to smooth their earnings they have to adjust revenues downward. This could happen if the industries to which acquirers of *developed* targets belong are experiencing favourable economic conditions, and thus the benchmark normal accruals are high. Finally, acquirers of *emerging* targets report positive *current* accruals only in the quarter preceding an acquisition announcement and do not seem to be managing earnings in other quarters. Nonacquirer accruals are also high and significant in all four quarters. They are, however, lower than the accrual levels of the acquiring firms.

Table 3 also presents the tests of differences between mean/median *total* and *current* accruals of the various acquirer types as well as between the different acquirer types and the nonacquirers. The differences between mean/median accruals of acquirers of *US* and *developed* targets as well as the differences between mean/median accruals of acquirers of *US* and *emerging* targets are both statistically significant. However, the difference between mean/median accruals of acquirers of *developed* and *emerging* targets is statistically significant only in the first quarter before acquisition announcement. This confirms that firms acquiring American companies overstate earnings more than do firms acquiring either developed or emerging targets. The difference between mean/median *total* and *current* accruals of acquirers of developed

and emerging targets and of the nonacquirers is also significant, showing that nonacquirers manage earnings more than do acquirers of these two types of targets.

Total and *current* accruals are also compared among acquirers using different payment methods. As can be seen from Table 4, all acquirers manage earnings to some degree and the difference between mean/median *total* accruals of the different groups is mostly negligible. However, *current* mean and median accruals of acquirers paying with *shares* are significantly higher than those of acquirers paying with cash in quarter Q-2. This finding supports Hypothesis 1a which states that firms using shares to finance their acquisitions manage earnings to a higher degree in order to make their shares a more valuable currency.

4.3. Abnormal returns around acquisition announcement

Results of the event study are presented in Table 5. It can be seen from Panel A, that as a whole, acquirers in this sample earn abnormal returns around the day acquisitions are announced. Highest returns are earned over the (0,1) window, as well as over the (-1,0) window, and on the day of the announcement itself. The largest mean cumulative abnormal return (CAAR) is equal to 0.65% in the (0,1) window, followed by 0.30% in the (-1,0) window, and 0.23% on the announcement day.

Panel B indicates that abnormal returns earned by firms which acquired targets from *emerging* economies are highest during three days following the announcement. This is consistent with Hypothesis 2. Mean CAAR's for these acquirers are 2.00%, 1.88%, and 2.03% in the (0,1), (0,2) and (0,3) windows respectively. Positive abnormal returns may indicate that the market values the firms' decision to acquire a firm from an emerging

economy, possibly because of the potential that may exist in countries that are developing rapidly. Mean CAAR's for acquirers of targets from *developed* economies are only significant over the (0,1) window, and are equal to 2.21%, as reported in Panel C. Finally, mean CAAR's for acquirers of *American* targets are significant over the (-1,0) and (-3,0) windows and equal 0.28% and 0.47% respectively as reported in panel D. Interestingly, firms acquiring *American* companies earn much lower abnormal returns as compared to those acquiring foreign firms, implying that investors see acquisitions of firms from international markets more favourably. This could be due to the belief that entering a new country through an acquisition or merger may allow the bidder to expand its market share and take advantage of new opportunities in developing economies.

4.4. Earnings management and probability of acquisition

Results of the generalized simple and multinomial logistic regressions are presented in Table 6. It can be seen form Panel A that discretionary accruals are not significant predictors of acquisition likelihood in the simple logit with no additional control variables. The intercept is negative, however, suggesting that the odds of acquiring are less than the odds of non-acquiring. Panel B presents the results of the expanded simple logit with additional predictor variables. The regression coefficients are still negative, regardless of whether *total* or *current* accruals are used as independent variables. While the estimated coefficients for either type of accruals are not significant, the adjusted net income seems to have a positive effect on the probability of acquisition.

Panel C displays the results of the simple multinomial logit, which uses only *total* and *current* accruals as predictors of the probability of acquiring different types of targets. The significantly negative regression intercepts suggest that making an acquisition is always less likely than nonacquiring, regardless of the type of target considered. In addition, in case of an acquisition, it seems that firms are less likely to target a firm from a *developed* or an *emerging* economy than they are an *American* company. This is understandable, since US firms may be more comfortable acquiring a domestic company. However, as shown in section 4.3, the market rewards firms acquiring foreign firms more than it does those acquiring US companies, so the high probability of firms choosing to make a domestic acquisition is somewhat surprising. Finally, Panel D presents the results of the expanded multinomial logit in which additional controls are included as predictor variables. The regression intercepts are still negative, and the coefficients of both *total* and *current* accruals still suggest that companies are less likely to acquire a firm from a developed or an emerging economy. The coefficient of LogSize is significantly positive, implying that firms are more likely to acquire large emerging targets. The adjusted net income seems to have a positive effect only on the acquisition probability of US targets. The number of prior acquisitions does not seem to influence the odds of acquiring.

In order to translate odds ratios estimates into probabilities, a simple transformation is performed. For example, the following equation is used to calculate the probability of acquiring a firm from a developed market (j=1):

$$P(1) = \frac{e^{(a_1 + b_1\,(MeanAccr))}}{1 + e^{(a_1 + b_1\,(MeanAccr))} + e^{(a_2 + b_2\,(MeanAccr))} + e^{(a_3 + b_3\,(MeanAccr))}}$$

Where a_1 is the intercept estimate for alternative *j=1*, b_1 is the coefficient estimate for alternative *j=1*, and *MeanAccr* is the mean *total* or *current* accrual.

Table 7 lists all probabilities obtained using variants of the equation above and estimates generated using the simple version of the multinomial logit where *total* and *current* accruals are used as predictors. It can be seen that firms are most likely not to make an acquisition, a result that is consistent with negative regression intercepts reported in Table 6. The results also imply that there is a 56.10% (56.31%) probability that a firm will not make an acquisition depending on whether *total* or (*current*) accruals are used as predictors in the logistic regression. In addition, and as expected, American companies are most likely to acquire other American firms if an acquisition is made. The probably of this being the case is 5.49% for *total* and 5.25% for *current* accruals. The probability of acquiring a firm from a developed market is about 5.5%, while the probability of acquiring a target form an emerging economy is about 3%.

The unconditional probabilities show that 13.76% of all sample acquisitions are of targets from developing markets, 7.14% are of targets form emerging markets, and 79.10% are of US targets. The ratio of nonacquirers to acquires is 123.81% which means that there are 23.81% more nonacquirers than there are acquirers in the sample.

It is important to remember that since the sample consists of acquirers and matched nonacquirers, the estimates of acquisition probability may be somewhat biased (Palepu, 1985). This is because a matched sample is artificially created to make sure that a similar

number of acquiring and non-acquiring firms are present, in order for the model to have a sufficient number of observations to use for estimation. If firms were chosen randomly, the sample would most likely include a much higher number of nonacquirers than of acquirers, because the proportion of firms making acquisitions is smaller than the proportion of firms not acquiring in the population. Although creating a matched sample is optimal for obtaining efficient estimates (Manski and McFadden, 1981) it creates biases when techniques assuming random sampling are used in estimation. One needs to keep this fact in mind when interpreting the results of logistic regression presented above.

5. Summary and Conclusions

The purpose of this paper was to check whether the level of earnings management could be a predictor of firms' acquisition activity. Total and current accrual levels were used to compare firms which announced acquisition deals during the sample period with firms that did not. The results showed that acquirers reported significantly higher current accruals than did nonacquiring firms, suggesting that there existed a positive relationship between the extent of earnings management and the likelihood of making an acquisition.

In addition, acquirers of American targets were found to report the highest total and current accruals, implying that, as expected by many investors, bidders buying US firms inflated earnings the most prior to announcing an acquisition. Alternatively, firms acquiring American companies may differ from other acquirers in different ways, in

which case, other firm characteristics in addition to the level of earnings management should be looked at in future analyses.

Moreover, acquirers using shares to complete the transactions were found to overstate their earnings more than did acquirers paying with cash or other methods. This is consistent with attempting to raise the value of shares and decrease the number of stocks that need to be exchanged in the deal.

Multinomial logistic regression was used to estimate the probability of acquiring different types of targets, based on the level of total and current accruals. The findings confirmed the hypothesis that level of earnings management could be used to forecast the odds of making an acquisition. The results indicated that firms were most likely not to make an acquisition, but in cases they did, the target was most likely to be an American rather than a foreign firm. Companies from other developed or emerging economies were less likely to be targeted because US firms might have felt more comfortable and have been more experienced in acquiring domestically.

Finally, abnormal returns earned by bidders around acquisition announcements were measured and found to be positive. Interestingly, acquirers of targets from emerging economies earned the highest abnormal returns during the several days surrounding the acquisition announcements. This result suggests that investors viewed the decision to acquire a firm from an emerging county more favourably than they did the decision to acquire an American firm or a firm from another developed market. It is possible that the market regarded the decision of the bidding firms to enter an up-and-

coming country as a good one, due to the possibilities of expanding market shares and other opportunities that may be present there.

TABLE 1

Sample Descriptive Statistics

Panel A presents firm characteristics such as mean and median size (total assets in thousands of dollars), leverage ratio (total liabilities divided by total assets), and return on assets (ROA) for the four quarters around acquisition announcement (Q0 – the quarter of the announcement, through Q-3 – three quarters before acquisition announcement). "N" denotes sample size. The t-test checks if differences in mean variables of acquirers and nonacquirers are statistically significant. The Wilcoxon tests does the same for medians. P-values are presented.
Panel B describes sample deals in terms of payment method, target type, and timing.

PANEL A – Firm Characteristics

	Acquirers				Nonacquirers			
	Q0	Q-1	Q-2	Q-3	Q0	Q-1	Q-2	Q-3
MEAN								
Size	3452.76	3224.90	3033.10	3000.10	2985.48	2925.60	2858.40	2794.40
Lev Ratio	0.4987	0.4855	0.4892	0.4969	0.5652	0.5669	0.5605	0.5679
ROA	0.0016	0.0061	0.0076	0.0047	0.0027	0.0020	0.0055	0.0027
MEDIAN								
Size	612.25	516.69	493.50	471.24	590.11	594.12	564.64	538.37
Lev Ratio	0.5149	0.5407	0.4675	0.4500	0.5341	0.5169	0.5242	0.5209
ROA	0.0112	0.0114	0.0113	0.0114	0.0108	0.0113	0.0122	0.0119
N	756	756	756	756	936	936	936	936
	T-test				Wilcoxon test			
Size								
p-value	0.2927	0.4833	0.6686	0.6121	0.5730	0.7114	0.4010	0.2571
Lev Ratio								
p-value	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
ROA								
p-value	0.6957	0.1149	0.4873	0.5724	0.2395	<.0001	<.0001	0.0002

PANEL B – Deal Characteristics

PAYMENT METHOD	NO. DEALS	TARGET TYPE	NO. DEALS
Cash Only	446	US	598
Shares	119	Developed	104
Hybrid	191	Emerging	54
Total	756	Total	756

Acq Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
No. Deals	69	165	128	103	39	39	40	40	59	62	12	756
Cash	33	82	71	53	19	28	28	30	43	49	10	446
Shares	20	39	21	28	4	2	3	1	0	1	0	119
Hybrid	16	44	36	22	16	9	9	9	16	12	2	191

TABLE 2

Estimated Discretionary Accruals for Sample Acquirers and Nonacquirers

Mean and median total and current accruals are compared between acquiring and non-acquiring firms in four quarters around acquisition announcements.

Current Accruals are calculated as $CurrA_i = (\Delta CA_i - \Delta Cash_i - \Delta CL_i)/A_{iq-1}$

Total Accruals are calculated as $TA_i = (\Delta CA_i - \Delta Cash_i - \Delta CL_i - Dep_i)/A_{iq-1}$

The t-test p-value is for the test of difference in mean accruals, the Wilcoxon p-value is for the test of difference in median accruals.

	Q0-Q1	Q1-Q2	Q2-Q3	Q3-Q4		Q0-Q1	Q1-Q2	Q2-Q3	Q3-Q4
	Mean Current Accruals					Median Current Accruals			
Acquirers	0.0247	0.0233	0.0231	0.0110		0.0151	0.0112	0.0112	0.0108
Nonacquirers	0.0207	0.0193	0.0185	0.0180		0.0086	0.0074	0.0068	0.0058
p-value	0.0706	0.0747	0.0553	0.4940	p-value	0.0125	0.0211	0.0600	0.0958
	Mean Total Accruals					Median Total Accruals			
Acquirers	0.0120	0.0010	0.0101	0.0072		0.0071	0.0056	0.0048	0.0044
Nonacquirers	0.0108	0.0089	0.0083	0.0074		0.0038	0.0039	0.0032	0.0030
p-value	0.5796	0.6821	0.3026	0.6989	p-value	0.1410	0.5288	0.4418	0.9337

TABLE 3

Acquirer Estimated Discretionary Accruals by Target Type

Mean and median total and current accruals are presented for acquirers acquiring each type of target. D1 is the difference between mean (median) accruals of acquirers of US targets and Developing targets. D2 is the difference between mean (median) accruals of acquirers of US targets and Emerging targets. D3 is the difference between mean (median) accruals of acquirers of Developed targets and Emerging targets. D4 is the difference between mean (median) accruals of acquirers of US targets and nonacquirers. D5 is the difference between mean (median) accruals of acquirers of Developed targets and nonacquirers. D6 is the difference between mean (median) accruals of acquirers of Emerging targets and nonacquirers. T-test is performed for the difference of means, Wilcoxon test is performed for the difference of medians. *, **, and *** denote significance at the 10%, 5%, and 1% levels.

	MEAN TOTAL ACCRUALS				MEDIAN TOTAL ACCRUALS			
Target	**Q0-Q1**	**Q1-Q2**	**Q2-Q3**	**Q3-Q4**	**Q0-Q1**	**Q1-Q2**	**Q2-Q3**	**Q3-Q4**
US	0.0183***	0.0143***	0.0147***	0.0091***	0.0135***	0.0108***	0.0087***	0.0079***
Dev	-0.0096***	-0.0036	-0.0029	0.0004	-0.0042***	-0.0014**	-0.0007	-0.0005
Emer	-0.0009	-0.0013	-0.0054*	-0.0032	0.0002	0.0002	-0.0006	-0.0002
Non	0.0108***	0.0089***	0.0083***	0.0074***	0.0038***	0.0039***	0.0032***	0.0030***
D_1	0.0279***	0.0179***	0.0176***	0.0087**	-0.0177***	0.0122***	0.0094***	0.0084***
D_2	0.0192***	0.0156***	0.0201***	0.0123**	0.0133***	0.0106***	0.0876***	0.0081***
D_3	-0.0087**	-0.0023	0.0025	0.0036	-0.0044**	-0.0016	-0.0001	-0.0003
D_4	0.0075*	0.0054*	0.0064**	0.0017	0.0097***	0.0069***	0.0055***	0.0049*
D_5	-0.0204***	-0.0125***	-0.0112***	-0.0070**	-0.0080***	-0.0053***	-0.0039***	-0.0035***
D_6	-0.0117***	-0.0102**	-0.0137***	-0.0106**	-0.0036***	-0.0037***	-0.0038***	-0.0032**

	MEAN CURRENT ACCRUALS				MEDIAN CURRENT ACCRUALS			
Target	**Q0-Q1**	**Q1-Q2**	**Q2-Q3**	**Q3-Q4**	**Q0-Q1**	**Q1-Q2**	**Q2-Q3**	**Q3-Q4**
US	0.0338***	0.0321***	0.0316***	0.0262***	0.0256***	0.0193***	0.0188***	0.0199***
Dev	-0.0071	-0.0019	-0.0013	0.0027	-0.0017***	-0.0007*	0.0000	0.0000
Emer	0.0072**	-0.0050	-0.0051	-0.0023	0.0009	-0.0002	-0.0005	-0.0003
Non	0.0207***	0.0193***	0.0185***	0.0180***	0.0086***	0.0074***	0.0068***	0.0058***
D_1	0.0409***	0.0339***	0.0329***	0.0235***	0.0273***	0.0200***	0.0188***	0.0199***
D_2	0.0266***	0.0370***	0.0376***	0.0285***	0.0247***	0.0195***	0.0193***	0.0202***
D_3	-0.0143***	0.0031	0.0038	0.0051	-0.0026***	-0.0005	-0.0005	-0.0003
D_4	0.0131***	0.0128***	0.0131***	0.0082***	0.0170***	0.0119***	0.0120***	0.0141***
D_5	-0.0278***	-0.0212***	-0.0198***	-0.0153***	-0.0103***	-0.0081***	-0.0068***	-0.0058***
D_6	-0.0135***	-0.0243***	-0.0236***	-0.0203***	-0.0077***	-0.0076***	-0.0073***	-0.0061***

TABLE 4

Acquirer Estimated Discretionary Accruals by Payment Method

Mean and median total and current accruals are presented for acquirers using different payment methods. D1 is the difference between mean (median) accruals of acquirers paying with cash and shares. D2 is the difference between mean (median) accruals of acquirers paying with cash and hybrid. D3 is the difference between mean (median) accruals of acquirers paying with shares and hybrid. T-test is performed for the difference of means, Wilcoxon test is performed for the difference of medians.

*, **, and *** denote significance at the 10%, 5%, and 1% levels

	MEAN TOTAL ACCRUALS				MEDIAN TOTAL ACCRUALS			
Pmt	**Q0-Q1**	**Q1-Q2**	**Q2-Q3**	**Q3-Q4**	**Q0-Q1**	**Q1-Q2**	**Q2-Q3**	**Q3-Q4**
Cash	0.0122***	0.0090***	0.0091***	0.0080***	0.0067***	0.0050***	0.0040***	0.0044***
Shares	0.0103***	0.0130***	0.0070*	0.0014	0.0067***	0.0098***	0.0035*	0.0031
Hybrid	0.0120***	0.0088***	0.0119***	0.0080***	0.0079***	0.0026***	0.0045***	0.0044***
D_1	0.0019	-0.0040	0.0021	0.0066	0.0000	-0.0048	0.0005	0.0013*
D_2	0.0002	0.0002	-0.0028	-0.0000	-0.0012	0.0024	-0.0005	0.0000
D_3	-0.0017	0.0042	-0.0049	-0.0066	-0.0012	0.0072	-0.0010	-0.0013
	MEAN CURRENT ACCRUALS				**MEDIAN CURRENT ACCRUALS**			
Pmt	**Q0-Q1**	**Q1-Q2**	**Q2-Q3**	**Q3-Q4**	**Q0-Q1**	**Q1-Q2**	**Q2-Q3**	**Q3-Q4**
Cash	0.0237***	0.0205***	0.0220***	0.0199***	0.0134***	0.0088***	0.0109***	0.0112***
Shares	0.0220***	0.0299***	0.0209***	0.0164**	0.0145***	0.0189***	0.0087***	0.0049***
Hybrid	0.0260***	0.0236***	0.0237***	0.0202***	0.0164***	0.0095***	0.0075***	0.0071***
D_1	0.0017	-0.0095**	0.0011	0.0035	-0.0011	-0.0101**	0.0022	0.0063
D_2	-0.0023	-0.0032	-0.0017	-0.0003	-0.0030	-0.0007	0.0034	0.0041
D_3	-0.0040	0.0063	-0.0028	-0.0038	-0.0019	0.0094**	0.0012	-0.0022

TABLE 5
Event Study

Results of the event study are presented for seven different event windows. Sample acquirers' returns are compared to expected returns earned by an equally-weighted index. Expected returns are calculated using data from a 150–day estimation period, starting 30 days before the acquisition announcement (i.e. days -181 to -31). "N" denotes the sample size, mean CAR is the average cumulative abnormal return, positive: negative is the ratio of positive returns to negative returns earned during a given event window, test statistics are presented for the Patell test, the cross-sectional error, and the rank z-test. Panel A presents abnormal returns for all acquirers, Panels B through D present results for acquirers of firms from emerging economies, developed economies, and the US.

*, **, and *** denote significance at the 10%, 5% and 1% levels.

PANEL A - Acquirer Abnormal Returns Around Acquisition Announcement

Window	N	Mean CAR	Positive: Negative	Patell Z	CSectErr t	Rank Z
(0,0)	599	0.30%	297:302	1.805*	2.011**	1.412
(0,+1)	599	0.65%	325:274	2.728***	3.111***	2.117**
(0,+2)	599	0.54%	304:295	1.548	2.088**	1.200
(0,+3)	599	0.73%	303:296	1.613	2.079**	0.648
(-1,0)	599	0.23%	314:285	1.912*	1.093	1.635
(-2,0)	599	0.19%	314:285	1.573	0.770	1.451
(-3,0)	599	0.38%	313:286	1.787*	1.321	1.399

PANEL B – Acquirers of Emerging Targets
Abnormal Returns Around Acquisition Announcement

Window	N	Mean CAR	Positive: Negative	Patell Z	CSectErr t	Rank Z
(0,0)	75	0.65%	37:38	1.639	1.058	0.467
(0,+1)	75	2.00%	45:30	3.192***	2.197**	2.075**
(0,+2)	75	1.88%	46:29	2.557**	2.109**	1.524
(0,+3)	75	2.03%	43:32	2.265**	2.123**	1.497
(-1,0)	75	0.10%	42:33	0.861	0.092	0.957
(-2,0)	75	-0.03%	41:34	0.978	-0.027	1.060
(-3,0)	75	-0.52%	41:34	0.227	-0.434	0.492

PANEL C – Acquirers of Developed Targets
Abnormal Returns Around Acquisition Announcement

Window	N	Mean CAR	Positive: Negative	Patell Z	CSectErr t	Rank Z
(0,0)	32	1.08%	16:16	1.180	1.359	0.830
(0,+1)	32	2.21%	17:15	1.800*	2.022**	1.341
(0,+2)	32	1.26%	17:15	0.851	1.130	0.482
(0,+3)	32	2.53%	19:13	1.187	2.009**	0.728
(-1,0)	32	0.64%	17:15	0.739	0.579	0.481
(-2,0)	32	0.42%	17:15	0.206	0.353	0.061
(-3,0)	32	1.46%	21:11	0.308	1.218	-0.258

PANEL D – Acquirers of US Targets
Abnormal Returns Around Acquisition Announcement

Window	N	Mean CAR	Positive: Negative	Patell Z	CSectErr t	Rank Z
(0,0)	489	0.23%	243:246	1.209	1.594	1.309
(0,+1)	489	0.38%	263:226	1.410	1.917*	1.327
(0,+2)	489	0.34%	241:248	0.588	1.223	0.709
(0,+3)	489	0.44%	240:249	0.626	1.115	-0.046
(-1,0)	489	0.28%	255:234	1.747*	1.530	1.488
(-2,0)	489	0.25%	255:234	1.374	1.077	1.304
(-3,0)	489	0.47%	250:239	1.835*	1.628	1.508

TABLE 6

Probability of Acquiring Targets from Emerging, Developed or US Economies

Results of simple and multinomial logistic regressions are presented for acquirers of firms from developing markets, emerging markets, and the US. The simple logit measures the probability of acquiring (versus non-acquiring) using only total and current accruals as predictors. The expanded model includes additional predictor variables, such as the log of acquirer total assets (log size), the net income adjusted for industry average (NI Adjusted), and the number of same industry acquisitions taking place a year before the sample acquisition (Prior Acquisitions). The simple version of multinomial logit uses total and current accruals to estimate the probabilities of acquiring firms form different markets. The expanded multinomial model includes same additional variables as the expanded model of the simple logit.

Current Accruals are calculated as $CurrA_i = (\Delta CA_i - \Delta Cash_i - \Delta CL_i)/A_{iq-1}$

Total Accruals are calculated as $TA_i = (\Delta CA_i - \Delta Cash_i - \Delta CL_i - Dep_i)/A_{iq-1}$

Coefficient estimates with p-values in parentheses are presented.

PANEL A – Simple Logit (Simple Form)

Parameter	Estimate	Parameter	Estimate
Intercept	-02238	Intercept	-0.2436
	(<.0001)		(<.0001)
Total Accruals	0.5440	Current Accruals	1.3199
	(0.6563)		(0.2171)

PANEL B – Simple Logit (Expanded Form)

Parameter	Estimate	Parameter	Estimate
Intercept	-0.2905	Intercept	-0.3059
	(0.1791)		(0.1566)
Total Accruals	0.6943	Current Accruals	1.4037
	(0.5713)		(0.1931)
LogSize	-0.0018	LogSize	-0.0020
	(0.9533)		(0.9486)
NI Adjusted	0.0008	NI Adjusted	0.0008
	(0.0199)		(0.0199)
Prior Acquisitions	0.0095	Prior Acquisitions	0.0090
	(0.2642)		(0.2926)

Parameter	Developed	Emerging	US
Intercept	-2.6001	-4.9479	-0.3463
	(<.0001)	(<.0001)	(0.1327)
Total Accruals	-12.1587	-8.2846	3.9719
	(<.0001)	(0.0230)	(0.0035)
Log Size	0.0855	0.2789	-0.0423
	(0.1908)	(0.0017)	(0.1964)
NI Adjusted	0.0006	0.0006	0.0009
	(0.3136)	(0.3630)	(0.0228)
Prior Acquisitions	-0.0274	0.0336	0.0141
	(0.2208)	(0.1711)	(0.1151)
Intercept	-2.6592	-4.9615	-0.3817
	(<.0001)	(<.0001)	(0.0972)
Current Accruals	-12.5233	-7.7479	5.2036
	(<.0001)	(0.0170)	(<.0001)
Log Size	0.1063	0.2916	-0.0481
	(0.1096)	(0.0011)	(0.1422)
NI Adjusted	0.0006	0.0006	0.0009
	(0.2769)	(0.3850)	(0.0176)
Prior Acquisitions	-0.0256	0.0333	0.0135
	(0.2533)	(0.1703)	(0.1320)

Table 7

Probability of Acquiring Developed, Emerging or US Targets

Panel A presents probabilities of acquiring different types of targets, calculated using coefficient estimates obtained from the generalized multinomial logit using either total or current accruals as predictors. The odds ratios are transformed into probabilities using the following equation:

$$P(1) = \frac{e^{(a_1 + b_1\,(MeanAccr))}}{1 + e^{(a_1 + b_1\,(MeanAccr))} + e^{(a_2 + b_2\,(MeanAccr))} + e^{(a_3 + b_3\,(MeanAccr))}}$$

Where a_1 is the intercept estimate for alternative j=1, b_1 is the coefficient estimate for alternative j=1, and MeanAccr is the mean total or current accrual.

Panel B presents the ratios of the number of different target types to all sample firms as well as the ratio of the number of nonacquirers to all sample firms.

PANEL A - Probability of Acquisition

	Total Accruals	Current Accruals
Developed	5.49%	5.25%
Emerging	3.07%	3.07%
US	35.34%	35.37%
No Acquisition	56.10%	56.31%

PANEL B – Unconditional Probabilities

Dev : All firms	0.0647	US : All firms	0.3534
Emer : All firms	0.0319	Nonacq : All firms	0.5532

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