Earnings management, firm Location, and financial reporting discretion: An analysis of fair value reporting for investment property in an emerging market

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Abstract: We examine firms' decision to adopt fair value reporting for investment property, and how property location affects this financial reporting choice. Unlike financial assets reported at fair value, investment properties cannot be traded on an exchange. Hence, fair values for investment properties are less verifiable and can be subject to more managerial discretion. As investment properties are location-specific, firms also have more opportunities to misstate fair values where the real estate markets are illiquid and investors' monitoring is low. Utilizing the emerging market setting of China, we find evidence that the fair value option for investment property is more likely to be chosen by firms that had significant prior earnings management activities. We also find that earnings management firms are more likely to adopt the fair value model when the firms' headquarters and investment properties are located in less developed regions. Confirming that some firms choose the fair value model to manage earnings, we show that firms choosing the fair value model are more likely to use unrealized gains and losses associated with investment properties to smooth earnings or to beat earnings benchmarks. Overall, our findings indicate fair value reporting decision for investment property in the emerging Chinese market is substantially driven by managerial opportunism.

Keywords: fair value reporting; earnings management; firm location; investment property; emerging market

1. Introduction

For accounting purposes, investment property is real estate held for the purpose of earning rent or capital appreciation. By their nature, real estate holdings are location specific, differentiated, and unique. As a result, they cannot be traded on an exchange in contrast to financial assets. Hence, fair values for investment properties are likely to be less verifiable and can be subject to more managerial manipulation. While prior studies have generally established the relevance of fair value reporting (Barth and Clinch 1998; Sloan 1999), some researchers have also shown that fair values of investment properties are significantly subject to management discretion (Dietrich et al. 2001). Since the adoption of the International Financial Reporting Standards (IFRS) in Europe on January 1st of 2005, publicly traded European firms have had the option of reporting investment properties at fair values under International Accounting Standards 40 (IAS 40). Recent studies document that, subsequent to the adoption of IAS 40, most firms have chosen fair value reporting for their investment properties in order to reduce agency costs and information asymmetry (Muller et al. 2011; Edelstein et al. 2012). Moreover, the choice of adopting the fair value model appears to be negatively related to managerial opportunism (Quagli and Avallone 2010). Hence, the extant literature seems to indicate that IAS 40 has improved the transparency and quality of reporting with respect to investment property, at least in the relatively developed economies of Europe.

In this study, we also examine how firms apply fair value reporting for investment properties, but in an emerging market setting. Ball et al. (2003) show that financial reporting quality is more strongly influenced by local preparers' incentives than by the quality of the accounting standards. As more and more countries adopt IFRS or allow their publicly listed firms to report IFRS-equivalent standards, researchers have raised questions as to whether IFRS can be effectively applied in the same way across different countries (Leuz et al. 2003). IFRS are commonly considered as principle-based standards that require substantial professional judgment and regulatory guidance. Thus, effective implementation of IFRS requires a well-governed and well-developed financial reporting environment. In the context of investment properties, the adoption of IFRS is especially complicated because fair value reporting also requires reliable estimates from a reputable appraisal industry with high quality governance and regulation. Moreover, efficient and liquid real estate markets underpin appraisers' fair value estimates. However, real estate markets in developing economies are typically less efficient and real estate

transactions in these countries tend to have lower transparency.[1] Hence, it is questionable whether firms in emerging markets would embrace fair value reporting for investment properties, and if so, to what extent managers would provide impartial and reliable fair value estimates for these properties.

The emerging market we choose to examine is China. Since 2007, the Chinese Accounting Standards Board has developed Accounting Standards for Business Enterprises 3 (ASBE 3) on the accounting for investment property. The standard is very similar to IAS 40, giving firms the option of reporting on the balance sheet their investment property at fair value instead of historical cost.[2] We analyze all publicly traded Chinese firms with investment property over the period of 2007 to 2009, and document that very few firms (3.6%) in China chose the fair value model to account for their investment properties.[3] This is a marked difference from the much higher percentage documented in developed markets.[4] This low adoption rate is consistent with a recent report published by the Chinese CA Network (2011), and it could be the result of perceived costs exceeding benefits to financial statement users--it is more difficult and more costly to obtain reliable fair value appraisals in an emerging market. However, the lukewarm reception is also consistent with anecdotal comments of the Chinese financial press (e.g., Sohu Business 2008), that fair value reporting is not easily implemented and more subject to manipulation with the lack of an efficient real estate market and a reputable, experienced appraisal industry in China.[5]

We investigate the type of firms that chooses to report investment properties at fair values, and find that they are predominantly those that had a history of earnings management activities (measured by firms' discretionary accruals in the past five years). Our findings differ significantly from prior IFRS studies, which show fair value firms under IAS 40 are committed to greater reporting transparency (Muller et al. 2011), less managerial opportunism (Quagli and Avallone

[1] For example, see the Global Real Estate Transparency Index 2010 Report by Jones Lang LaSalle.
[2] Unlike IAS 40, firms that choose to report historical costs under ASBE 3 are not required to disclose investment properties' fair values in the notes to the financial statements.
[3] We also further analyze all Chinese firms with investment properties in 2010, and find that none had decided to switch to the fair value model in that year.
[4] For instance, Edelstein et al. (2012) show that 75% of firms in their sample adopt the fair value model to account for investment properties.
[5] One may argue that the tax factor plays a role in the unenthusiastic response to the adoption of fair value accounting for investment properties in China, especially given that the Chinese real estate market has experienced unprecedented growth in the last decade. However, the tax policy in China forbids the inclusion of unrealized fair value gains and losses of investment properties in taxable income, thus ruling out tax being the contributing factor to the unpopularity of the fair value accounting rule.

2010), enhanced comparability (Cairns et al. 2011) and higher disclosure standards (Edelstein et al. 2012).

We further examine the impact of location on this relationship between the use of fair value and past earnings management. Location is important for several reasons. First, as better-developed regions have more active and efficient real estate markets, yielding external indications of fair value that are more frequent and more reliable. Second, the real estate appraisal industry is likely to be more mature with more qualified experts to conduct appraisals in these areas. Moreover, under the knowledge spillover theory, information asymmetry is lower when the average education level of people is higher. Consequently, investors' monitoring is also likely to be stronger in developed regions. Thus, the locations of firms and more specifically their investment properties should have significant bearing on fair value reporting decisions. Based on results from a cross-country setting, prior studies (e.g., Muller et al. 2011) suggest that fair value could be more prevalent in developed regions as managers strive to improve transparency. On the other hand, the managerial opportunism explanation suggests that fair value would be more commonly used in less developed regions. We provide interesting evidence that location is an important moderator: fair value firms are predominantly those with histories of significant earnings management when they are located in less developed regions; in contrast, fair value firms in more developed regions do not have higher prior earnings management activities.

Having established that the past history of earnings management and the opportunity to bias fair value estimates based on where these properties are located are important factors in managers' choice of fair value accounting, we close the analysis by examining the consequences of those accounting choices. Executives who manage earnings must have some motive—for example, to mislead investors or to alter contractual outcome (Lo 2008). In this study, we examine whether firms use their fair value reporting decision to achieve two earnings management goals commonly documented in prior literature: To smooth earnings (Trueman and Titman 1988) and to meet earnings benchmark (Burgstahler and Dichev 1997; DeGeorge et al. 1999). We find that fair value firms use unrealized fair value gains and losses to reduce earnings volatility, and this smoothing behavior is again more apparent in less developed regions. Furthermore, we also find that fair value adopting firms are more likely to meet or beat certain earnings benchmarks. The findings confirm our hypothesis that firms choose to report fair values for investment properties

would make use of the flexibility in fair value estimation for opportunistic purposes (as opposed to reducing information asymmetry).

Collectively, our results imply that fair value reporting for investment property in China has resulted in outcomes that are different from those documented in developed economies. It seems that Chinese firms are more likely to choose fair value reporting to manage earnings. The fair value option is particularly attractive for firms located in less developed regions, where there exists the greatest opportunity to bias fair value estimates. These findings generally support the argument made in prior studies (e.g., Ball et al. 2003; Leuz and Wysocki 2008; Daske et al. 2008) that high quality accounting standards cannot be effective without the support of a well-developed legal and financial reporting environment, and there have been well-documented weaknesses in China's corporate reporting system and investor protection (Morck et al. 2000; Allen et al. 2005). Our paper provides novel evidence on the overall impact of IFRS convergence in China when the integrity of the corporate reporting environment is still in transition but remain relatively weak. So far, the evidence on IFRS convergence in China is mixed. On one hand, Liu et al. (2011) show improvement in earnings quality among Chinese firms with the convergence. Lee et al. (2013) show there has been a significant increase in the value relevance of earnings following the convergence, especially for firms located in less developed regions. On other hand, He et al. (2012) examine the implementation of fair value accounting specifically for trading securities and debt restructuring in the Chinese market and find that when fair value reporting became *mandatory* for trading securities and restructured debt, many Chinese firms used the new fair value rules to manage earnings. We complement and contrast these findings by documenting how Chinese firms adopt the optional fair value model for investment property, where fair value estimates are more questionable. We find that, when given this *option* to adopt fair value reporting, not many firms adopted the fair value model. But firms with the greatest earnings management motive are more likely to switch to fair value reporting, and location of the firms matters since less developed regions offer firms with greater manipulative opportunities.

We choose the emerging Chinese market, instead of other developing countries, to conduct our analysis of investment properties for several reasons. First, ASBE 3 is drafted based on IAS 40, allowing us to evaluate the effect of similar fair value regulation in an emerging market context. At present, other large developing countries (for instance, India) have not developed standards equivalent to IAS 40. The single country setting also allows us to isolate the effect of location from

other legal, institutional, tax and cultural factors. Second, the financial reporting environment in China is in an early stage of development and many publicly traded Chinese firms, especially those with government connections, are subject to relatively minimal scrutiny by regulators. Hence, it engenders a culture where earnings management activities are still considered common and prevalent (Li et al. 2008). Third, China has some of the largest real estate markets in the world. While some markets are still in their infancy, other markets (e.g., Shanghai, Beijing) are very developed and active, with highly transparent property listing systems comparable to those in developed countries. The development disparity across different regional real estate markets in China provides a favorable environment to assess the importance of real estate market liquidity and efficiency on the accounting choice for investment properties.

Our study contributes to extant literature in two important ways. First, we offer new evidence that addresses the concerns among academics and industry practitioners about the reliability of fair value reporting for nonfinancial assets. In particular, we show that, in an emerging market, the adoption of high quality standards such as IFRS or IFRS-like standards is not sufficient for improving financial reporting quality. In fact, the effectiveness of IFRS is dependent on the adopting country's local environmental factors. We show that fair value accounting is being implemented perhaps too soon in the Chinese market. Consequently, fair value accounting has been used by some firms as an earnings management tool. Our results bear important policy implications to standard setters and regulators governing emerging markets, and suggest that regulators must carefully consider their IFRS implementation plans as to when and how to converge local accounting standards to IFRS. Our study also suggests that IFRS may not be the *"one size fits all"* standards suitable for all environments.

Our second contribution is from providing evidence that location is an important factor affecting the use of fair value and earnings management. Fields et al. (2001) discuss three important factors driving accounting choices (i.e., agency cost, information asymmetry, and externalities affecting non-contracting parties). Firm and investment locations can affect both agency costs and information asymmetry through investor monitoring. For investment property, the influence of location is especially palpable as efficiency of the local real estate market affects how these assets are measured on the financial statements. Yet, the location factor has largely been overlooked by accounting researchers. Among the few existing studies, Urcan (2007) examines the relationship of firm location and financial reporting quality, showing that rural firms in the U.S.

have higher quality reporting than urban firms. Other studies that link firm location to capital market research have examined the importance of location on cost of capital, information asymmetry or market performance (e.g., John et al. 2011; Loughran and Schultz 2005; 2006; Francis et al. 2008). In broader terms, our research adds to this line of scarce but important literature by showing the effect of location on financial reporting decision making.

The rest of the paper is organized as follows. The next section provides some background information on the development of fair value accounting in China and discusses related literature. Section 3 develops the hypotheses and outlines our research design. Section 4 describes the sample selection process and sample statistics. Section 5 reports the empirical results. We discuss additional and robustness analysis in Section 6 and offer concluding remarks in the last section.

2. Fair value accounting in China and related literature review

2.1. The development of fair value accounting in China

The concept of fair value was first introduced into Chinese Accounting Standards (CAS) in 1998 for debt restructuring expenses (CAS 12). However, the Ministry of Finance (MOF) issued revisions of the standards in 2001 disallowing the fair value model due to concerns about the objectivity of fair values due to low market efficiency and the prevalence of earnings management in China. As the Chinese market witnessed significant improvement in more recent years, the MOF decided to combine CAS with IFRS-equivalent standards and thereby fair value reporting was reintroduced in China in 2007.

Under the new standards, ASBE, effective January 1st, 2007, fair value reporting applies to investment properties, debt restructuring, financial instruments and certain non-monetary transactions. However, firms are allowed the *option* of choosing the fair value model versus the historical cost model *only* for investment properties (ASBE 3). It is also the first time investment properties have been defined in Chinese Generally Accepted Accounting Principles, and the China Securities Regulatory Commission (CASC) proclaims that all buildings and land held for rental or for capital appreciation must be classified as investment properties. The fair value model entails reporting investment properties at fair value on the balance sheet and changes in fair value flow through income (not other comprehensive income). Under the historical cost model, investment properties appear at depreciated cost on the balance sheet and depreciation expense flows through income. Compared to IAS 40, ASBE 3 has stricter requirements, at least nominally. In particular, ASBE 3 does not allow a firm to choose the fair value model unless it can justify: (a) its investment

properties are located in an active market, or (b) similar investment properties' market information can be obtained. Moreover, ASBE 3 states that a firm should only choose one model to value all its investment properties, and no subsequent reversion from fair value model to cost model is allowed. These ASBE 3 application rules reflect regulators' concerns about the reliability of fair value estimates for investment properties in China.

2.2. Related literature review

2.2.1. Fair value for investment properties

On January 1st, 2005, the European Union (EU) required all publicly traded firms in the EU to adopt International Financial Reporting Standards. The new standards have drastically changed the financial reporting environment for many European firms. One of the more notable changes is the fair value reporting of nonfinancial assets. IAS 16 allows revaluation of property, plant, and equipment, and IAS 38 likewise provides this revaluation alternative for intangible assets. For investment property, IAS 40 provides an option for firms to use either the cost model or the fair value model. Prior academic studies have looked into the rationales and consequence of firms' choice in choosing the fair value model. Muller et al. (2011) show firms that have higher information asymmetry, measured by bid-ask spreads, are more likely to use the fair value model to report investment properties. They argue it is investors' demand for transparency that drives the choice of fair value reporting. Christensen and Nikolaev (2009) associate the choice of fair value reporting for nonfinancial assets with debt contracting theory. They show that fair value reporting firms rely more on debt financing than companies using historical costs. They interpret the findings as indicating that fair value reporting reduces agency costs, by revealing asset exit values to creditors. Quagli and Avallone (2010) extend the above-mentioned studies and examine a comprehensive set of factors driving firms' fair value reporting choice under IAS 40. Their results indicate that firm size, a proxy for political cost, is the most significant factor in the fair value choice. On the contrary, they find that leverage and information asymmetry do not play an important role.[6] Cairns et al. (2011) investigate the use of fair values for various assets (e.g., financial instruments, property, plant and equipment, investment properties) in the U.K. and Australia under IFRS. They document that most companies holding investment properties adopt

[6] The difference in results between these studies could be due to sampling differences. Quagli and Avallone (2010) examine their hypothesis using a small sample of 73 observations from a subset of real estate companies in seven E.U. countries (Finland, France, Germany, Greece, Italy, Spain and Sweden), while the other studies use broader samples.

the fair value model. Edelstein et al. (2012) analyze the financial statement disclosure for fair value firms, and find that these firms make extensive disclosures with regard to their investment properties according to the requirement of IAS 40.

2.2.2. Reliability of fair values

The reliability of fair values has long been a concern for academics and regulators, and most research focused on financial assets in the U.S. banking industry. Though fair values are commonly regarded as more value relevant (e.g., Barth 1994; Nelson 1996), other studies also show that fair values are more subjective and can be manipulated easily for earnings management purpose. For example, Hitz (2007) postulates that the manipulation of fair values can actually hurt investors despite the relevance of fair values. In a theoretical model, this paper shows that fair value accounting can become exclusively an earnings management tool for risky companies. Song et al. (2010) examine SFAS 157 classifications of fair value assets into three levels based on the degree of verifiability of the assets' underlying values. As expected, the value relevance of the firms' level 3 assets (i.e., assets that lack reliable market values or valuations and require significant management assumptions) is significantly lower than their level 2 and level 1 assets, highlighting the subjectivity and unreliability of estimates based on management discretion.

The issue of reliability, more recently relabeled as representational faithfulness, is a more serious concern for nonfinancial assets. Before IFRS, fair value accounting (or revaluation) for investment properties was only allowed in a few countries (e.g., U.K., Australia). Academic studies that examine reliability issues in these markets generally find that fair values are relevant (Easton et al. 1993; Aboody et al. 1999). However, value relevance is a low hurdle that simply measures whether fair values are significantly associated with the market value of equity (i.e., sign not magnitude).[7] Danbolt and Rees (2008) find that fair values become less value relevant when they are subject to increased managerial discretion. Another study by Dietrich et al. (2001) show that fair value appraisals of investment properties are reliable estimates for the properties' selling prices; however, these estimates require managerial discretion and managers select, within a reasonable range, the estimates that help the company to report increased earnings or smooth earning.

[7] Another concern about measuring value relevance using the market value equity is the inherent circularity. If investors already know the value of assets to price the shares, then what is the purpose of reporting those values to investors?

2.2.3. Effect of location on financing, disclosure, and investment choices

The finance literature contains a few studies showing that firms' geographical location plays a role in the capital markets. Loughran and Schultz (2006) compare financing decisions of rural and urban firms and find that rural firms are less likely to rely on external equity financing. They show that this is due to higher cost for investors to ascertain the financial performance of rural firms, which translate to an adverse selection outcome and consequently higher cost of equity financing for rural firms. Loughran and Schultz (2005) further show trading volume is substantially higher for firms located in big metropolitan areas. Francis et al. (2008) document that firms in remote rural areas exhibit significantly higher cost of debt capital compared with those in urban areas. Cai and Tian (2009) show firms with urban headquarters are more transparent with a higher chance of takeover. John et al. (2011) find evidence that rural firms offer higher dividend yields to reduce the agency cost of free cash flow, as investors presume that managers in remote firms have more discretion to misuse cash compared with those in central cities.

Another theory that predicts a difference between urban and rural firms is related to knowledge spillover. This theory postulates that firms in big cities perform better because managers have more opportunities to network and to build valuable relationships with their peers. Residents are generally more educated in big cities and are more able to learn from their peers. Christoffersen and Sarkissian (2009) find a positive relationship between city size and mutual fund performance, supporting the argument that managers in larger cities are more experienced and more knowledgeable.[8]

Aside from the urban/rural differences, geographic distance also matters. Proximity between firms and their investors alleviates agency cost concerns by facilitating (literally) closer monitoring. Studies on institutional investors find evidences that increases in local institutional investors predict future stock returns (Baik et al. 2010) and geographical proximity between firms and institutional investors reduces managers' opportunistic behaviors and improves earnings predictability (Ayers et al. 2011).

The effect of geographic proximity is related to the home-bias literature. Prior research shows that fund managers and institutional investors have a home bias that is not only international

[8] In the urban economics literature, research has also shown a positive relationship between wages, productivity, and the education level of inhabitants in a city (e.g., Rauch 1993; Glaeser et al. 1995; Glaeser and Mare 2001). Some studies also show locating in urban areas can improve technological spillovers (e.g., Audretsch and Feldman 2004; Fritsch 2003).

but also regional. This bias is rational to the extent that geographic proximity between firms and investors confers an information advantage and local investors are able to exploit their specific knowledge and earn abnormal returns (Coval and Moskowitz 2001; Ivkovic and Weisbenner 2005).[9] Finally, the impact of geographical location on financial reporting decisions is an almost uncharted area in extant literature. A study by Urcan (2007, unpublished) shows earnings of rural firms in the U.S. have higher persistence and greater conservatism. The author interprets the findings as being consistent with managers of rural firms attempting to mitigate the adverse effect of location by providing higher quality reporting. More recently, Lundholm et al. (2014) show that U.S.-listed foreign firms that are geographically more distant from the U.S. have financial reports that are more readable, suggesting that more distant firms are attempting to overcome the reluctance of U.S. investors to buy their securities.

3. Hypothesis development and research design

3.1. Managerial opportunism

There is a long line of literature that shows managerial opportunism as an important motivation for accounting choice. Positive accounting theory (Watts and Zimmerman 1978) posits that contractual arrangements such as management compensation contracts and bond covenants influence managers' financial reporting decisions. Managers make financial reporting decisions to maximize their compensation (e.g., Healy 1985; Holthausen et al. 1995; Guidry et al. 1999; Cheng and Lo 2006), or to avoid debt covenant violations (e.g., Defond and Jiambalvo 1994). Research also shows that managers make opportunistic reporting decisions for capital market reasons (e.g., Perry and Williams 1994; Kasznik 1999; Graham et al. 2005).

In this study, we examine the potential for managerial opportunism in financial reporting choices relating to investment properties in an emerging market. We focus on investment properties because manipulation of fair values is perhaps the most critical concern for the application of fair value reporting to nonfinancial assets such as investment properties. Compared to financial markets, real property markets tend to be less liquid. As each property is unique in terms of location, there are no organized exchanges on which to trade property assets. Hence, when the E.U. in 2005 adopted IFRS, which allows the fair value option for investment properties, many

[9] Other studies focus on venture capitalists' investment strategies and find venture capital managers are also most likely to invest in local firms (e.g., Gupta and Sapienza 1992; Norton and Tenenbaum 1993; Cumming 2006; Sorenson and Stuart 2001).

academics and regulators were and continue to be skeptical because fair value estimates for investment properties are less verifiable and managers can significantly manipulate such estimates.[10]

In emerging economies, the reliability of fair values is an even more serious concern. First, these economies usually have lower transparency, less developed governance and legal structure, and higher information asymmetry between corporate insiders and outside investors. The result is that capital markets are less informationally efficient, so even fair values of financial assets are of questionable reliability. Second, the determination of fair values for investment properties relies on appraisals of real estate experts due to the absence of quoted prices on exchanges. Given that real estate markets in emerging economies are generally less liquid and less transparent, the quality of these real estate appraisals is lower (Chinese CA Network 2011). A third factor is the absence of a property tax system in many emerging economies. In most developed countries, the property tax base is the fair value of the real estate. In such systems, government assessors determine the fair value of properties annually, extrapolating from actual property sales and other data, thereby providing an independent source of fair value information.[11]

In the emerging Chinese market that we choose to conduct our analysis, the capital market is also characterized by significant insider trading activity and few institutional investors. Many publicly traded firms are state-owned enterprises with direct or indirect connections to the government. In such markets, there is weak oversight of financial reporting by capital market regulators. Hence, earnings management is more prevalent in China. Moreover, real estate transactions in China are not very transparent (Wang and Wang 2012). We posit that, if managers adopt the fair value model to facilitate earnings management, then firms with greater earnings management motive/tendency are more likely to adopt the fair value model.[12] Alternatively, other studies (e.g., Quagli and Avallone 2010; Muller et al. 2011; Edelstein et al. 2012) show that the adoption of fair value accounting for investment properties under IFRS improves financial reporting quality in developed countries. If the objective of Chinese managers who adopt the fair

[10] For instance, Herrmann and Sudagaram (2006) suggest that verifiability is the most important reason that the U.S. is not following IFRS on this financial reporting issue and still favor historical costs over fair values in the accounting of nonfinancial assets.

[11] On the contrary, for instance, the Chinese property tax system is not based on fair values. Instead, it is based on the original price minus 10 to 30 percent of depreciation at a rate of 1.2 percent or levied at 15 percent of the actual rental income of the property (Man 2012).

[12] Though firms can also manage earnings by manipulating depreciation accruals in the cost model, Marquardt and Wiedman (2004) show that these accruals are not the primary accounts being managed.

value model is similar to that of managers in developed countries, (i.e., to provide more value relevant information to investors), then the accounting choice for investment properties should not be related to managerial opportunism. Hence, we would observe no relationship between the adoption of the fair value model and firms' earnings management motive/tendency. We present our first hypothesis as follows:

***H_1**: The likelihood of reporting fair values for investment properties in an emerging market is positively associated with firms' earnings management motive.*

We measure firms' earnings management motive using their past earnings management activity for two reasons: first, managers' behavior tend to persist over time; second, firms that had large earnings management in the past will face higher earnings management constraints in the future (Barton and Simko 2002), and therefore have greater tendency to devise new manipulative strategies to continue meeting their earnings goals. Each firm's past earnings management activity is calculated using information in the years preceding the implementation of the new Chinese Accounting Policy in 2007. We use the discretionary accruals model from Dechow and Dichev (2002) to measure earnings management.[13] This model maps accounting accruals into operating cash flows in contemporaneous and adjacent periods, and has been documented to have the best fraud detection power (Jones et al. 2010). The model is as follows:

$$ACCR_{it} = b_0 + b_1 CFO_{i,t-1} + b_2 CFO_{i,t} + b_3 CFO_{i,t+1} + b_4 \Delta REV_{it} + b_5 PPE_{it} + e_{it} \qquad (1)$$

$ACCR_{it}$ is total accruals for firm i in year t, calculated as earnings less operating cash flow. $CFO_{i,t}$ represents operating cash flows for firm i in year t. ΔREV_{it} is the change in total revenues for firm i between year t and t-1. PPE_{it} is the gross value of property, plant and equipment at the end of year t. All variables are scaled by total assets at the end of year t. The model is estimated separately for each industry in which there are at least 10 firms. Discretionary accruals are the residuals from equation *(1)*. For each firm, we calculate the mean value of absolute discretionary accruals over

[13] As robustness check, we also calculate discretionary accruals using alternative measures of discretionary accruals and obtain similar empirical findings. We discuss the results in a later section.

the five year period of 2001-2005. The square root of the mean discretionary accrual, labeled as *EM*, is of the proxy for prior earnings management.[14]

EM is the key variable in the test of H_1, which we implement by estimating the following logistic model:

$$FV_{it} = b_0 + b_1 EM_i + b_2 SIZE_{it} + b_3 LEV_{it} + b_4 CFO_{it} + b_5 PPE_{it} + b_6 RETURN_{it} + b_7 LOSS_{it} + b_8 BIG4_{it} + b_9 CHAIR\_CEO_{it} + b_{10} DOM_{it} + b_{11} STATE_{it} + e_{it} \quad (2)$$

The dependent variable, FV_{it}, is an indicator variable that equals 1 if firm *i* switches to fair value reporting for its investment properties in year *t*, and 0 otherwise. If the choice of the fair value model is driven by managerial opportunism, we expect b_1 to be significantly positive.

We follow prior studies (e.g., Quagli and Avallone 2010; Muller et al. 2011) and include the following control variables: $SIZE_{it}$, measured as the log of firm *i*'s equity market capitalization, is a proxy of political costs; LEV_{it}, measured as firm *i*'s total liability divided by equity market capitalization, is a control for the leverage effect; CFO_{it}, is firm i's cash flows from operations divided by total assets; $RETURN_{it}$, is firms *i*'s annual stock return; $LOSS_{it}$, equals 1 if firm *i* had negative net income in the prior year, and 0 otherwise; CFO_{it}, $RETURN_{it}$ and $LOSS_{it}$ serve as controls for firm performance; PPE_{it}, measured as firm i's property, plant and equipment divided by total assets, proxies for the magnitude of other fixed assets; $Big4_{it}$, an indicator variable equal to 1 if firm *i* is audited by Big4 auditors (0 otherwise), is a control for audit quality. In addition, we include corporate governance factors as they have the potential to affect firms' earnings management and financial reporting discretion. We use two governance variables: CEO duality ($CHAIR\_CEO_{it}$) and dominant shareholdings (DOM_{it}) measuring the fraction of shares held by the largest five shareholders.

We also include another variable given the unique structure of Chinese firms (Chen et al. 2011; He et al. 2012; Li et al. 2012). As many Chinese firms are controlled by the government, we include state-owned ($STATE_{it}$), an indicator variable equal to 1 if firm *i*'s ultimate controlling shareholder is the government (0 otherwise). Finally, we include year and industry indicators in the regressions. The data appendix lists detailed definitions of all variables.

[14] We use square root to transform the average discretionary accruals as its distribution is right-skewed. However, results are qualitatively similar when we use the average discretionary accruals without transformation to conduct our analysis.

3.2. Effect of firm location

Next, we examine the effect of firm location on the association between fair value choice and earnings management history. Location is an important factor in the estimation of investment property values because of differences in the liquidity of the real estate markets and the quality of appraisals. Fair value estimates for investment properties should be less subjective if there is an active and transparent real estate market where auditors (and to a more limited extent, investors) can easily verify the information. Secondly, as noted earlier, geographic proximity between a firm and its owners alleviates the agency conflicts created by the separation of ownership and control. Furthermore, prior research acknowledges that large urban centers have an information advantage (e.g., Ivkovic and Weisbenner 2005) and knowledge spillover effects (e.g., Christoffsen and Sarkissian 2009).

Aggregating the above arguments, we believe that fair value estimates for investment properties in less developed regions are more likely to be subject to managerial opportunism. Thus, we posit that firms located in less developed regions will show a stronger association between the choice of fair value model for investment properties and firms' earnings management motive:

***H_2**: Firms with properties located in less developed regions have a stronger association between the choice of fair value accounting for investment property and their earnings management motive.*

Since the disclosure of investment property location is voluntary, we are unable to find the exact location of investment properties for every sample firm. Hence, we use the firms' headquarters to serve as a proxy for investment property locations, as Chinese firms tend to concentrate on their local markets and own investment properties close to the firms' headquarters.[15]

In prior U.S. literature (e.g., Loughran and Schulz 2006), researchers define urban (or better developed) regions as the largest 10 metropolitan areas in the U.S. according to the Census, and rural (or less developed) regions as areas that are 100 miles away from any of the 49 largest metropolitan areas in the U.S. We cannot follow the same methodology because such classification assumes economic development is correlated with population of a region. In the case of China,

[15] We verify this claim by examining a hand-collected sample of firms that voluntarily disclosed investment property locations. We have a total of 448 firm-year observations with investment property location information. We find that 74% (329 out of 448) of the observations report investment properties predominantly (i.e., greater than 75% of total investment properties) located in the same city as the firms' headquarters. We discuss the results of further analysis on this subsample in a subsequent section.

there is a large city in almost every province. Hence, considering the distinct Chinese setting, we elect to construct our own measures of urban development.

A recent survey by the Shanghai and Shenzhen stock exchanges showed that almost 50% of investors are concentrated in five regions/cities: Shanghai, Guangdong, Beijing, Zhejiang and Jiangsu, and the other 50% of investors are dispersed across the remaining 26 provinces (Tao 2008). Moreover, in 2006, the Institute of Social Science of the People's Republic of China published a blue book of Chinese regional development. It clearly shows the most economically developed cities are concentrated in the Yangtze River Delta and the Pearl River Delta, followed by the Beijing-Tian Jing District. These three regions also encompass the above-mentioned five regions/cities with the most investors. Hence, we construct our first proxy of location, *HQ1*, an indicator variable equal to 1 (and 0 otherwise) if a firm's headquarter is located in the three most developed economic areas in China: Yangtze River Delta, Pearl River Delta, and Beijing-Tian Jing District.

We also construct a second measure of location. We create an index for each province based on seven economic factors: (1) per capita GDP; (2) percentage of stock trading volume for firms in the province relative to the whole country; (3) geographic distance of the province to the closer of the two Chinese financial exchanges (i.e., Shanghai and Shenzhen); (4) level of residential consumption level; (5) percentage of urban population relative to the country; (6) number of financial experts as a percentage of population; (7) number of real estate experts as a percentage of population. We separately rank the 35 provinces by each of these seven factors, and calculate the mean value of each factor as the cutoff.[16] The index is constructed for each province by assigning 1 point for each of the province's economic factor that is above the cutoff (0 otherwise). Hence, the most developed province can report a maximum index value of 7. The index serves as our second proxy of location, *HQ2*.

We examine the prediction of H_2 that the impact of managerial opportunism on the choice of fair value model for investment properties is stronger for firms located in less developed regions by modifying equation (2) to include the interactive effect between *EM* and *HQ1* or *HQ2*. The model is depicted as follows:

[16] For geographic distance, the distribution is highly skewed because both exchanges are located on the coast and are far away from the inland provinces. Hence, we set an arbitrary number (i.e., 500km) as the threshold.

$$FV_{it} = b_0 + b_1 EM_i + b_2 HQ_{it} + b_3 EM_i \times HQ_{it} + b_4 SIZE_{it} + b_5 LEV_{it} + b_6 CFO_{it} + b_7 PPE_{it} + b_8 RETURN_{it} + b_9 LOSS_{it} + b_{10} BIG4_{it} + b_{11} CHAIR\_CEO_{it} + b_{12} DOM_{it} + b_{13} STATE_{it} + e_{it} \quad (3)$$

where *HQ* = *HQ1* or *HQ2*. The key coefficient of interest in equation (3) is b_3, which we predict to be negative and significant. If managers are using the fair value model for manipulative purposes, then we expect that firms located in less developed regions are more likely to report fair values for investment properties.

3.3. Post-adoption earnings management

Fair values of investment properties are generally determined by appraisers, who are supposed to be experts in valuation and real estate. However, many appraisers in China lack the expertise and proper education necessary to conduct such appraisals.[17] Hence, there are concerns about the quality of appraisals in China, especially in remote areas. Managers may purposely work with an "easy" appraiser so that they can exert more influence on the appraisal process to manipulate fair value estimates. A study by Dietrich et al. (2001) shows that some U.K. firms use property fair value estimates to overstate earnings before debt issuance or to smooth reported earnings. In an emerging market such as China, where regulations are weak and unevenly enforced, and where ethical standards are not well developed, it is even more likely that managers would be more likely to bias their fair values estimates. We specifically examine whether Chinese managers use fair value estimates to either smooth reported earnings or to beat earnings benchmark. We posit that firms choosing the fair value model for their investment properties would manipulate the fair value estimates for earnings management purposes.

H3*: Firms that have adopted fair value reporting for investment properties are more likely to engage in earnings management post-ASBE 3 compared with firm using the cost model.*

Trueman and Titman (1988) demonstrate that reducing the volatility of earnings can result in lower estimated bankruptcy costs. If the intention of managers is to adopt the fair value model to smooth earnings, then we expect managers to report unrealized gains and losses from investment

[17] Although only indirectly related to property appraisals, according to the Statistical Bureau in China in 2009, the number of financial experts who hold the CFA designation in China is less than 1,000, while there are already more than 5,000 CFA Charterholders in the city of Hong Kong alone.

properties in a manner that reduces the volatility of earnings. Hence, when the change in reported net income (excluding fair value gains and losses) is more positive (negative), we expect the gains and losses from fair value adjustments to be more negative (positive). We use the following model to investigate the relation between fair value gains and losses and earnings change for the fair value adopting firms:

$$FVGL_{it} = b_0 + b_1 \Delta Earnings_{it} + b_2 \times \%IP_{it} + e \quad (4)$$

$FVGL_{it}$ is the fair value gains and losses recognized from changes in investment property values, scaled by the beginning-of-year market value of equity. $\Delta Earnings_{it}$ is the change in reported net income exclusive of fair value gains and losses from an investment property's fair value changes, scaled by the beginning-of-year market value of equity. $\%IP_{it}$ is the percentage of investment properties relative to total assets. We predict b_1 to be negative if managers use the unrealized fair value gains and losses to smooth earnings.

Another motivation for earnings management is to meet or beat earnings benchmark (e.g. positive earnings or increase in earnings). With this motivation, we expect firms that have adopted the fair value model for investment properties to be more likely to have earnings or change in earnings very close to or slightly above zero (i.e., we do not consider beating analyst forecasts as these are not available for most of our sample firms). We use the following model to investigate the adopting firms' behaviors of meeting or beating earnings benchmark:

$$Suspect_{it} = b_0 + b_1 FV_{it} + b_3 SIZE_{it} + b_4 LEV_{it} + b_5 MB_{it} + b_6 CFO_{it} + e_{it} \quad (5)$$

$Suspect_{it}$ is an indicator variable that equals one for firms whose earnings (or change of earnings) scaled by total assets at the beginning of the year are between 0 and 0.005, zero otherwise. MB_{it} is the market-to-book ratio. The other variables are defined in previous models. Prior studies (e.g., Burgstahler and Dichev 1997; Dechow et al. 2003) have argued that it is likely that firms with earnings (or change in earnings) just below zero manage their earnings to report income marginally above zero. We predict b_1 to be positive if fair value adopting firms manage earnings to meet or beat earnings benchmark.

4. Sample selection and descriptive statistics

4.1. Sample selection

Our sample is obtained from the China Center for Economic Research (CCER) database over the period of 2007-2009, since ASBE 3 became effective in 2007 and we find that no firm had switched to the fair value model in 2010. We hand-collected from firms' annual reports the accounting choice for investment property (i.e., fair value or cost model), the change in fair value of investment property, and other related investment property information. Geographic and demographic macro-data is obtained from China's statistics yearbook of 2006. Our sample comprises all listed A-share companies that have investment properties, with the exclusion of financial and IPO firms. This results in 1,545 firm-year observations in our main sample from 577 sample firms. We find that only 21 out of 577 firms (3.6%) had switched to the fair value model following the implementation of ASBE 3 in China, consistent with anecdotal evidence (Chinese CA Network 2011). These fair value firms are distributed across 12 different industries, with slightly higher representations from the retail and real estate industries (i.e., 4 and 3 firms respectively). Finally, we also collect a sample of 2,592 firm-year observations over 2001-2005 for these 577 sample firms for the calculation of past discretionary accruals. Table 1 presents the results of the sample selection process.

[Insert Table 1 here]

4.2. Descriptive statistics

Table 2, Panel A, reports descriptive statistics for the variables used in the regression analysis. Based on the number of firm-years, *FV* has a mean of 0.0136 in the sample. This 1.36% rate is lower than the 3.6% noted above because, as shown in Table 1, we only include a fair value adopting firm once whereas other firms are included for multiple years.[18] The measures of economic development, *HQ1* and *HQ2,* report mean values of 0.52 (range between 0 and 1) and 4.08 (out of theoretical maxima of 1 and 7) respectively. The sample of firms has a mean size of 22.11 measured in logs, or about RMB 4 billion, mean leverage ratio of 0.58 and average cash flows from operations of 3.6% of market capitalization. Average *PPE* is 23% of assets. The mean

[18] Similar to IAS 40, ASBE 3 imposes strict restriction on firms switching back from the fair value model to the cost model. As a consequence, we find that none of our sample firms switched back after they adopt the fair value model. To avoid counting the fair value adopting decision of the same firm multiple times over 2007-2009, we only include observations of the fair value adopting firms in the year when they *first* adopt the fair value model in the panel regression. Hence, *FV* has mean of 1.36% while the average percentage of adoption is 3.6% for the sample firms.

stock return is 93%, as China was experiencing tremendous growth over the sample period. Only 13% of the sample observations report net losses for a given year. *BIG*4 has a mean of only 7%, indicating the Big 4 auditors are not used by most firms in China. This low percentage of Big 4 auditor use is also documented by Gul et al. (2010). The corporate governance variables *CHAIR_CEO* and *DOM* have average values of 0.14 and 0.45 respectively. Consistent with prior literature (Chen et al. 2011; Li et al. 2012), a vast majority of Chinese firms (68.6% in our sample) are controlled by the government.

Panel B of Table 2 provides a comparison between the fair value adopting and non-adopting firms. Our earnings management proxy *EM* is significantly higher for adopting firms at the statistical level of <1%. Fair value firms are located in less developed regions (but the difference is not statistically significant). These firms also have significantly lower operating cash flows and PPE ratios, but higher return. Finally, fair value firms are less likely to be state-owned.

[Insert Table 2 here]

In Table 2, Panel C, we report Pearson correlation coefficients between the regression variables. We find that *FV* and *EM* are positively correlated (significant at the level of 10%). We also find that fair value adopting firms have higher leverage, lower *PPE,* higher return and are less likely to be state-owned enterprises. Consistent with traditional earnings management literature, *EM* is higher in smaller firms, firms with lower cash flow from operating activities, loss firms, and firms without Big 4 auditors. Another correlation is noteworthy: *HQ1*, the indicator variable for regional economy based on whether a company's headquarter is located in one of the three most developed areas in China, is correlated with regional index *HQ2* based on seven economic factors with a correlation coefficient of 0.91. We use both of these measures in the main regression analysis.

5. Empirical results

5.1. Univariate tests

To begin our analysis, we first compare the level of earnings management activities in the five years pre-ASBE 3 (i.e., 2001-2005) for firms that later opted for the fair value model versus those retaining the cost model. The first column of Table 3 shows that fair value firms reported somewhat higher discretionary accruals, although the difference is not statistically significant (t = 1.42). Next, we partition the sample observations based on whether *HQ1* equals 1 or 0 (i.e., whether a firm's headquarter is located in a developed region or not). The results show that for firms headquartered

in developed regions (column 2), past discretionary accruals are lower for those that later chose fair values for investment properties, compared to those retaining the cost model (t = 3.65). In contrast, for firms located in less developed regions (column 3), discretionary accruals are higher for those choosing the fair value model than those choosing the cost model (t = 2.48). These preliminary results suggest that past earnings quality is a predictor of firms' choice of reporting for investment properties, and firm location is an important factor.

[Insert Table 3 here]

5.2. Hypothesis tests

For the formal test of H_1, we estimate equation (2) using logistic regression.[19] In all regressions, we control for potential cross-correlations within firms by reporting robust standard errors clustered at the firm level. In the first column of Table 4, we report the simple logistic regression estimation results of *FV* on *EM* without the inclusion of any control variables. The results show that the coefficient for past earnings management (*EM*) is significantly positive (p = 0.006), consistent with our hypothesis that past earnings management behavior is predictive of the likelihood of a firm choosing the fair value model for investment properties. Economically, this coefficient estimate is small but significant, as it translates into a marginal effect of about 3%. In the second column of Table 4, we report the multivariate regression results for equation (2), and we continue to find that the fair value model is being adopted by firms with past earnings management behavior. The results do not change when we control for year and industry fixed effects in the last column of Table 4.

Among the control variables, the coefficient on the leverage ratio (*LEV*) is significantly positive in the last column of Table 4, which implies risky firms are more likely to choose the fair value model. We also find significant and negative coefficients for cash flows (*CFO*), indicating liquidity-constrained firms are more likely to adopt fair value reporting for investment properties. We also observe significant negative coefficients for state-owned indicator (*STATE*).

[Insert Table 4 here]

In Table 5, we report results of estimating equation (3), which examines H_2—the effect of location on the association between fair value reporting choice and earnings management motive.

[19] The small number of adopting firms (i.e., *FV*=1) might cause estimation bias using the logistic regression models (Tomz et al. 2001). In results un-tabulated, we re-estimate the logit model using the penalized likelihood method (Firth method) to correct for the rare event bias. Our results are not sensitive to this model adjustment.

Column 1 uses indicator variable *HQ1* as the measure of location. The results show that the coefficient of *EM* remains positive and becomes more significant as compared to results in Table 4 discussed above. This coefficient is relevant to firms for which *HQ1* = 0, meaning that for firms in less developed regions, the choice of fair value accounting associates with earnings management motive. The coefficient on the interactive term *EM*×*HQ1* is negative and strongly significant (p = 0.006). The sum of the coefficients on *EM*, *HQ1,* and *EM*×*HQ1* is close to zero, meaning that for firms in developed regions, the likelihood of choosing the fair value model is not associated with earnings management motive. Column 2 presents results using *HQ*2 as the measure of location. We continue to find significant positive coefficient for *EM* and significant negative coefficient for the interaction term *EM*×*HQ2*. Note that for comparison of coefficient magnitudes, unlike *HQ1*—an indicator variable, *HQ2* is an index ranging from 0 to 7.

[Insert Table 5 here]

We next examine whether firms that adopt fair value reporting for investment properties subsequently exhibit evidence of stronger earnings management. In Table 6, Panel A, we report the results of estimating equation (4) using 51 firm-year observations with reported unrealized fair value gains and losses on investment property (*FVGL*). Column (1) shows that *FVGL* is negatively associated with the change in non-*FVGL* earnings, consistent with earnings smoothing (coefficient = -0.109, p = 0.005). Columns (2) and (3) examine the impact of location using *HQ1* and *HQ2* as alternative proxies. While we do not find any significance for the interaction term of Δ*Earnings* and *HQ1,* the interactive coefficient is about 50% of the magnitude of the main effect, such that sum of the coefficients on Δ*Earnings*, *HQ1*, and Δ*Earnings*×*HQ1* becomes insignificant (F = 0.57, p = 0.4553), indicating that location in one of the three developed regions of China mitigates the smoothing incentive. The results for *HQ2* are similar except that the coefficient on the interaction term between Δ*Earnings* and *HQ2* is significantly positive (coefficient = 0.023, p = 0.039), again indicating that earnings manipulation behavior is mitigated when firm headquarters are located in more developed regions. The interpretation is not as simple as for *HQ1* because *HQ2* ranges from 0 to 7. Applying the inter-quartile range of 7 yields an interactive effect of 7 × 0.023 = 0.161, which is 148% of the magnitude of the main effect of -0.109. Therefore, the evidence shows that location in a more developed region fully mitigates the tendency to use of fair value gains and losses to smooth earnings.[20]

[20] Tangentially, we note that 40 of the 51 instances of fair value adjustments are gains while only 11 are losses.

[Insert Table 6 here]

A second common motivation for earnings management is to meet earnings benchmarks. In Table 6, Panel B, we report the results of testing whether fair value adopting firms are more likely to meet or beat earnings benchmarks than firms retaining the cost model. The analysis uses 7,673 firm-quarters with data for earnings and earnings changes in 2007 to 2009. Column 1 shows the logistic regression results of meeting or beating the zero earnings level benchmark. We find the coefficient for the fair value indicator *FV* is positive and significant (p = 0.03) indicating that firms that use the fair value model for investment properties are more likely to meet or beat the zero earnings threshold. Furthermore, limiting the sample to exclude the firm-quarters with fair value losses (see Column 2), the effect becomes stronger as would be expected (p = 0.000). On the contrary, the coefficient of *FV* has become insignificant when firm-quarters with fair value gains are excluded (see Column 3). Overall, the results imply fair value firms specifically report fair value gains on their investment properties to meet earnings benchmark.

Table 6, Panel C, shows the results of the analysis of meeting or beating the benchmark of zero *change* in earnings. The positive and statistically significant coefficients of the fair value indicator (p = 0.000) in Column 1 again implies that fair value adopting firms are able to meet or beat the zero earnings changes threshold more often than firms using the cost model. Similar to Panel B, the effect becomes stronger when we exclude observations with fair value losses in Column 2 but it becomes insignificant when we exclude observations with fair value gains in Column 3.

6. Additional and robustness analysis

6.1. Matched sample

A concern on our multivariate regression analysis of equation (2) is that the number of fair value firms is very low which may lead to econometric issues in estimation of a rare event. We first re-estimate the same model using the penalized likelihood method (Firth method) to correct for the rare event bias and obtain similar results. Second, we construct a matched sample by pairing each fair value firm with five non-fair value firms with the closest market capitalization, the same SIC 2-digit industry and in the same year. We present results of estimating equation (2) using this subsample of 126 firm-year observations in Table 7. We find that the coefficient of *EM* remains positive and highly significant.

[Insert Table 7 here]

6.2. The impact of investment property location

In the main analysis of equation (3), we show that the location of firm headquarters play an important role in financial reporting decision-making. This result could be due to two reasons. It is possible that firms in more developed regions are subject to stronger investor monitoring, which generally constrains managerial opportunism. Alternatively, investment properties in these regions allow less potential for appraisal misstatement. To distinguish these two explanations, we hand-collect detailed data of investment property locations from firms that voluntarily disclose this information. After checking all sample firms' annual reports during 2007 to 2009, we obtain a sample of 448 firm-year observations. For this subsample, we find that about 74% have the majority of their investment properties (i.e., greater than 75% in terms of total number of investment properties) located in the same region as their firms' headquarters. Since firms have multiple investment properties that may be located in different regions, we build a new index, *IPLOC*, to proxy for the average economic development level of the firms' investment property locations. If a firm has all of its investment properties in the region of its headquarters, then *IPLOC* equals *HQ2*. If firms have investment properties in different regions, then *IPLOC* equals the mean of the *HQ2* score from each of those regions.[21]

Next, we substitute *IPLOC* as our new proxy of location in equation (3) to examine the impact of investment property location on fair value choice. The first column of Table 8, Panel A, reports the regression results. The coefficient of interaction between *IPLOC* and *EM* is significantly negative (coefficient = -3.202, p = 0.000), implying the location of investment properties does have an effect on fair value choice. We run a comparison and replicate the same analysis on equation (3), using *HQ1* and *HQ2* as the location proxies on the same subsample of 448 observations. Comparing the three columns in Table 8, Panel A, the Vuong statistics show Model 1 is not statistically different from Model 2 and Model 3. In order to examine whether investment property locations or headquarter locations are more significant factors in determining fair value reporting decision, we further compare the effect of *IPLOC* and *HQ* by including both variables (and their interaction terms) in the same specification. In both columns of Table 8, Panel

[21] For example, if firm A has investment properties in region 1, region 2 and region3, which have *HQ2* scores of 2, 6, and 7 respectively, then the *IP* score for firm A is equal to (2+6+7) / 3 = 5. Ideally, we would want to construct a weighted index based on proportional investment in different regions. Unfortunately, while these firms disclose each of their investment properties in terms of location, not every firm provides a detailed breakdown of the values of the individual investment properties.

B, we show that the interaction term of *IPLOC* and *EM* is significant but not the interaction term of *HQ* and *EM*. Investment property location being more important than headquarter location implies that real estate market efficiency dominates investor monitoring with regard to its impact on the managerial choice of fair value reporting for investment properties.

[Insert Table 8 here]

6.3. Alternative proxies for earnings management

In our main regression analysis, we measure earnings management by firms' past five years' average discretionary accruals using the Dechow and Dichev (2002) model. Although Jones et al. (2010) compares several accrual models and finds that the model of Dechow and Dichev (2002) outperforms other models in its ability to detect actual cases of fraudulent and restated earnings; we check the robustness of our results by using the Modified Jones Model to calculate discretionary accruals. We follow the methodology in Larcker and Richardson (2004) to calculate discretionary accruals for our variable *EM*. Table 9 reports the results. The likelihood of choosing the fair value model for investment property remains positively associated with the mean absolute discretionary accruals ($p = 0.023$). When we compare discretionary accruals with our location factors, *HQ1* and *HQ2*, we again find strong results similar to those reported in Table 5, re-affirming the positive association between earnings management motive and the probability of using the fair value model, especially in less developed regions.

[Insert Table 9]

7. Conclusion

The issue of neutrality and reliability have been the main concern of fair value reporting, and fair value estimates for nonfinancial assets are especially susceptible to managerial manipulation. Given the opportunity, managers could abuse the flexibility allowed in the fair value model to report unrealistic and unreliable fair value estimates. In this study, we hypothesize that firms in an emerging market are more likely to adopt the fair value model as an earnings management tool. We utilize the emerging market setting in China and empirically examine two questions. 1) How do firms make use of fair value reporting? 2) What is the role of location in the choice of fair values for investment properties? We find strong and robust evidence that the fair value model for investment properties in China is chosen more often by firms that have greater earnings management motive (as demonstrated by more earnings management activity in the past), and the

likelihood of these firms choosing the fair value model increases when the firms' headquarters or investment properties are located in less developed regions. We also find that these fair value adopting firms engage in earnings smoothing using the unrealized gains and losses from investment properties, and they are also more likely to meet or beat certain earnings benchmarks (zero earnings and zero earnings change). Indeed, these results indicate that the new accounting standards on fair value reporting for investment properties (i.e., ASBE 3 or, more broadly, IAS 40) comes with some concerns when implemented in an emerging market such as China.

Our study bears important policy implications for regulators in emerging economies when many of these countries are considering or are in the process of converging their local standards to IFRS. We find evidence that Chinese firms have varied effectiveness in their implementation of IFRS-like standards (at least in the accounting of investment properties). Contrary to the belief that the adoption of IFRS would improve financial reporting quality of a country, we show that introducing the IFRS-equivalent standards and allowing fair value reporting for investment properties in China could in fact encourage earnings management activities. Yet, we offer interesting evidences on the debate of IFRS effectiveness in China (e.g., Liu et al. 2011; He et al. 2012), as we show that fair value reporting for investment properties is only abused by firms with the greatest earnings management motive and opportunities. While fair value reporting might improve the relevance of financial information, our results suggest that fair values are not superior to historical costs when the concerns of neutrality and reliability outweigh the benefit of providing relevant information in regions with less efficient asset markets and lower investor monitoring.

Lastly, our study contributes to the literature by highlighting that location can affect accounting-related corporate decision making. Of course, the caveat of our study is that we examine the financial reporting choice of investment properties, and the valuation of investment properties is essentially location-driven. Nonetheless, the impact of location is often overlooked in the accounting literature, and yet, firm location naturally affects the efficiency of asset markets, the effectiveness of investor monitoring, and the level of information asymmetry between managers and investors. Our study highlights the importance of location as a factor in financial reporting decision.

Data Appendix

FV	Indicator variable, equal to 1 if firms choose fair value model; 0 otherwise
EM	Square root of mean absolute discretionary accruals
*HQ*1	Indicator variable, equal to 1 if firms are located at developed regions; 0 otherwise
*HQ*2	Index from 0 to 7 representing the development level of a region
SIZE	Natural logarithm of firm's equity market capitalization
LEV	Total liabilities divided by firm's equity market capitalization
CFO	Cash flows from operations divided by firm's equity market capitalization
PPE	Total property, plant and equipment divided by firm's total assets
RETURN	Total annual stock return
LOSS	Indicator variable, equal to 1 if firms have negative net income year; 0 otherwise
*BIG*4	Indicator variable, equal to 1 if firms hire a BIG4 firm as auditors; 0 otherwise
CHAIR_CEO	Indicator variable, equal to 1 if CEO is also the chair of the board; 0 otherwise
DOM	Indicator variable, equal to 1 if firms' largest five shareholders' total shareholdings are equal or larger than 5%; 0 otherwise
STATE	Indicator variable, equal to 1 if firms' ultimate controlling shareholder is the government; 0 otherwise
FVGL	Unrealized fair value gains and losses from investment properties
$\triangle$*Earnings*	Change in reported net income exclusive of unrealized fair value gains and losses from investment properties
%*IP*	Value of investment properties divided by total assets
MB	Market value of equity over book value of equity

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Table 1: Sample selection

Initial sample of firm-year observations reported in CCER database for year 2007-2009	6,340
Less: firms without investment property	(2,940)
Less: firms in financial industries	(1,395)
Less: IPOs	(112)
Less: firm observations with no financial records before 2006	(300)
Less: firm observations with missing control variables	(18)
Less: subsequent firm-year observations for fair value adopters	(30)
Final sample of firm-year observations	1,545

Table 2: Descriptive statistics and correlations

Panel A: Descriptive statistics for main analyses

Variables	N	Mean	Median	Std Dev	1st quartile	3rd quartile
FV	1545	0.0136	0.0000	0.1158	0.0000	0.0000
EM	1545	0.2217	0.2004	0.1043	0.1479	0.2752
HQ1	1545	0.5197	1.0000	0.4998	0.0000	1.0000
HQ2	1545	4.0848	6.0000	3.0155	0.0000	7.0000
SIZE	1545	22.1140	21.9905	1.0536	21.3979	22.7160
LEV	1545	0.5800	0.3722	0.6319	0.1930	0.7160
CFO	1545	0.0356	0.0281	0.1105	-0.0002	0.0735
PPE	1545	0.2319	0.2072	0.1763	0.0897	0.3330
RETURN	1545	0.9298	1.0275	1.3840	-0.5402	1.7143
LOSS	1545	0.1256	0.0000	0.3315	0.0000	0.0000
*BIG*4	1545	0.0699	0.0000	0.2551	0.0000	0.0000
CHAIR_CEO	1545	0.1405	0.0000	0.3476	0.0000	0.0000
DOM	1545	0.4485	0.0000	0.4975	0.0000	1.0000
STATE	1545	0.6861	1.0000	0.4642	0.0000	1.0000

See Data Appendix for variable definitions.

Panel B: Descriptive statistics: Fair value adoption firms vs. non-adoption firms

		Adopters (*FV*=1)			Non-adopters (*FV*=0)				Difference	
Variables	N	Mean	Median	Std Dev	N	Mean	Median	Std Dev	Mean	P Value
EM	21	0.2751	0.2484	0.1279	1524	0.2209	0.2002	0.1038	0.0542***	(0.0090)
HQ1	21	0.4286	0.0000	0.5071	1524	0.5210	1.0000	0.4997	-0.0924	(0.2001)
HQ2	21	3.3462	3.0000	3.2034	1524	4.0932	6.0000	3.0131	-0.6170	(0.1760)
SIZE	21	22.1407	22.2332	1.1163	1524	22.1136	21.9902	1.0531	0.0271	(0.4534)
LEV	21	0.6859	0.3329	0.7443	1524	0.5786	0.3722	0.6303	0.1073	(0.2198)
CFO	21	-0.0192	0.0059	0.1192	1524	0.0364	0.0286	0.1103	-0.0556**	(0.0110)
PPE	21	0.1558	0.1127	0.1762	1524	0.2329	0.2079	0.1761	-0.0771**	(0.0232)
RETURN	21	1.7162	1.6797	1.5256	1524	0.9190	1.0201	1.3794	0.7972***	(0.0044)
LOSS	21	0.0952	0.0000	0.3008	1524	0.1260	0.0000	0.3319	-0.0308	(0.3365)
*BIG*4	21	0.0476	0.0000	0.2182	1524	0.0702	0.0000	0.2556	-0.0226	(0.3435)
CHAIR_CEO	21	0.1428	0.0000	0.3586	1524	0.1404	0.0000	0.3475	0.0024	(0.5127)
DOM	21	0.4286	0.0000	0.5071	1524	0.4488	0.0000	0.4975	-0.0202	(0.4266)
STATE	21	0.3809	0.0000	0.4976	1524	0.6903	1.0000	0.4625	-0.3094***	(0.0012)

P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.

Panel C: Pearson correlations

	FV	EM	HQ1	HQ2	SIZE	LEV	CFO	PPE	RETURN	LOSS	BIG4	CHAIR_CEO	DOM	STATE
FV	1													
EM	0.0412*	1												
HQ1	0.0021	-0.0295	1											
HQ2	-0.0083	-0.0324	0.9135***	1										
SIZE	0.0075	-0.1578***	0.0837***	0.09***	1									
LEV	0.0538**	-0.0208	-0.0388	-0.0448*	-0.1652***	1								
CFO	-0.0363	-0.0731***	-0.0512**	-0.0578**	0.0604**	0.1433***	1							
PPE	-0.0638**	-0.1098***	-0.243***	-0.2742***	0.0485*	0.0202	0.2459***	1						
RETURN	0.071***	0.0210	-0.021	-0.0289	0.3562***	-0.3288***	-0.0309	-0.0109	1					
LOSS	-0.0274	0.075***	-0.0084	-0.0172	-0.1485***	0.0305	-0.0329	0.0403	0.0652***	1				
BIG4	-0.0053	-0.0883***	0.0993***	0.104***	0.3244***	0.1225***	0.1372***	0.0961***	-0.0361	-0.0098	1			
CHAIR_CEO	0.0066	0.0471	0.0922	0.0937	-0.1056	-0.0868	-0.0069	-0.0056	0.0085	0.0305	-0.0699	1		
DOM	-0.0129	0.0055	0.0383	0.0396	0.2699***	0.0376	-0.0019	0.0009	-0.0224	-0.0641***	0.1452***	-0.0993***	1	
STATE	-0.0777***	-0.0635**	-0.0394	-0.0378	0.2112***	0.0843***	0.0919***	0.1365***	-0.0066	-0.0226	0.1276***	-0.2006***	0.1534***	1

*P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.

Table 3: Univariate test of differences in absolute discretionary accruals

	All firms	Obs.	*HQ1* = 1 (firms in developed regions)	Obs.	*HQ1* = 0 (firms in less developed regions)	Obs.
FV = 1 (fair value firms)	0.084	101	0.043	45	0.116	56
FV = 0 (cost model firms)	0.065	2491	0.068	1299	0.062	1192
Differences	0.019	2592	-0.025	1344	0.054	1248
t-value	1.42		3.65***		2.48**	

*P<0.10 **P<0.05 ***P<0.01

Discretionary accruals are calculated using Dechow and Dichev (2002) model:

$ACCR_{it}=b_0+b_1CFO_{i,t-1}+b_2CFO_{i,t}+b_3CFO_{i,t+1}+b_4\Delta REV_{it}+b_5PPE_{it}+e_{it}$ *(1)*

$ACCR_{it}$ is calculated as earnings less operating cash flows. The CFO_{t-1} and CFO_t and CFO_{t+1} are operating cash flows at year t-1, t, and t+1 respectively. ΔREV_{it} is the difference in total revenue between year t and year t-1. And PPE_{it} is the gross value of property, plant and equipment. All variables are scaled by total assets at year t. The sample period spans the years 2001- 2005.

Table 4: Test of H_1 - logistic regression analysis of fair value choice and earnings management

Variables	(1)	(2)	(3)
EM	**3.856*** **	**2.626***	**3.859****
(***p-value***)	**(0.006)**	**(0.051)**	**(0.023)**
SIZE		0.218	0.088
		(0.416)	(0.768)
LEV		0.476	0.762***
		(0.163)	(0.007)
CFO		-3.584**	-3.612**
		(0.032)	(0.029)
PPE		-1.455	-3.226
		(0.465)	(0.163)
RETURN		0.364	0.437
		(0.177)	(0.324)
LOSS		-0.516	-0.500
		(0.516)	(0.575)
*BIG*4		-0.091	-0.085
		(0.931)	(0.931)
CHAIR_CEO		-0.211	-0.101
		(0.749)	(0.884)
DOM		-0.043	-0.067
		(0.929)	(0.883)
STATE		-1.261**	-1.358***
		(0.012)	(0.009)
Constant	-7.829*	-8.914	-7.070
	(0.068)	(0.134)	(0.297)
Year Fixed Effect	NO	NO	YES
Industry Fixed Effect	NO	NO	YES
Pseudo R^2	0.022	0.068	0.123
Observations	1,545	1,545	1,545

The following regressions are estimated for the sample period 2007-2009 using panel data with firm-level clustered standard errors for the estimation of the p-values.

$FV_{it} = b_0 + b_1EM_i + b_2SIZE_{it} + b_3LEV_{it} + b_4CFO_{it} + b_5PPE_{it} + b_6RETURN_{it} + b_7LOSS_{it} + b_8BIG4_{it} + b_9CHAIR\_CEO_{it} + b_{10}DOM_{it} + b_{11}STATE_{it} + e_{it}$ *(2)*

*P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.

Table 5: Tests of H_2 - logistic regression analysis of fair value choice, earnings management, and firm location

Variables	(1) *HQ = HQ1*	(2) *HQ = HQ2*
EM	**7.651*** **	**8.752*** **
(*p-value*)	**(0.001)**	**(0.001)**
HQ	**1.708***	**0.256**
	(0.091)	**(0.162)**
EM × HQ	**-8.147*** **	**-1.319*** **
	(0.006)	**(0.010)**
SIZE	0.114	0.105
	(0.710)	(0.736)
LEV	0.813***	0.816***
	(0.003)	(0.003)
CFO	-3.922**	-3.736**
	(0.018)	(0.024)
PPE	-3.375	-3.780*
	(0.140)	(0.091)
RETURN	0.374	0.394
	(0.344)	(0.337)
LOSS	-0.383	-0.258
	(0.658)	(0.760)
*BIG*4	-0.221	-0.215
	(0.832)	(0.839)
CHAIR_CEO	-0.081	-0.049
	(0.908)	(0.944)
DOM	0.028	0.010
	(0.953)	(0.984)
STATE	-1.353**	-1.368**
	(0.012)	(0.010)
Constant	-8.683	-8.628
	(0.221)	(0.232)
Year Fixed Effect	YES	YES
Industry Fixed Effect	YES	YES
Pseudo R^2	0.182	0.186
Observations	1,545	1,545

The following regressions are estimated for the sample period 2007-2009 using panel data with firm-level clustered standard errors for the estimation of the p-values.

$$FV_{it} = b_0 + b_1 EM_i + b_2 HQ_{it} + b_3 EM_i \times HQ_{it} + b_4 SIZE_{it} + b_5 LEV_{it} + b_6 CFO_{it} + b_7 PPE_{it} + b_8 RETURN_{it} + b_9 LOSS_{it} + b_{10} BIG4_{it} + b_{11} CHAIR\_CEO_{it} + b_{12} DOM_{it} + b_{13} STATE_{it} + e_{it} \quad (3)$$

*P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.

Table 6: Tests of H_3

Panel A: Post-adoption earning manipulation test - earnings smoothing

	(1)	(2)	(3)
Variables		*HQ = HQ1*	*HQ = HQ2*
⊿Earnings	**-0.109*** **	**-0.120** **	**-0.154*** **
(*p-value*)	**(0.005)**	**(0.010)**	**(0.001)**
HQ		**-0.002**	**-0.000**
		(0.724)	**(0.872)**
⊿Earnings × HQ		**0.061**	**0.023** **
		(0.350)	**(0.039)**
%IP	0.015**	0.016**	0.018***
	(0.014)	(0.011)	(0.004)
Constant	0.009***	0.008***	0.008**
	(0.000)	(0.007)	(0.021)
Adjusted R^2	0.275	0.294	0.333
Observations	51	51	51

The following regression is estimated for the sample period 2007-2009 using panel data of all firms that adopts fair value reporting for investment property, with firm-level clustered standard errors for the estimation of the p-values.

$FVGL_{it} = b_0 + b_1 \Delta Earnings_{it} + b_2 \%IP_{it} + e_{it}$ *(4)*

*P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.

Table 6

Panel B: Post-adoption earnings manipulation test - meet or beat zero earnings threshold

	Zero Earnings Threshold $Suspect_{it}$ = 1 if 0 ≤ $Earnings_{it}/TA_{it}$ ≤ 0.005		
Variables	(1) All firms	(2) Excluding obs. with *FVGL* < 0	(3) Excluding obs. with *FVGL* > 0
FV	**0.410****	**0.475*****	**-0.130**
(*p-value*)	**(0.030)**	**(0.000)**	**(0.748)**
SIZE	-0.154*** (0.000)	-0.157*** (0.000)	-0.156*** (0.000)
LEV	-0.010 (0.919)	-0.014 (0.891)	-0.013 (0.901)
MB	-0.162*** (0.000)	-0.163*** (0.000)	-0.160*** (0.000)
CFO	-4.287*** (0.000)	-4.309*** (0.000)	-4.272*** (0.000)
Constant	2.092** (0.031)	2.162** (0.026)	2.200** (0.024)
Industry Fixed Effect	YES	YES	YES
Year Fixed Effect	YES	YES	YES
Pseudo R^2	0.029	0.0184	0.028
Observations	7673	7641	7453

The following regression is estimated for the sample period 2007-2009 using panel data with firm-level clustered standard errors for the estimation of the p-values.

$$Suspect_{it} = b_0 + b_1 FV_{it} + b_3 SIZE_{it} + b_4 LEV_{it} + b_5 MB_{it} + b_6 CFO_{it} + e_{it} \quad (5)$$

*P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.

Table 6

Panel C: Post-adoption earning manipulation test - meet or beat zero earnings change threshold

	Zero Earnings Change Threshold *Suspect*$_{it}$ = 1 if $0 \leq \Delta$Earnings$_{it}$/TA$_{it} \leq 0.005$		
Variables	(1) All firms	(2) Excluding obs. with *FVGL* < 0	(3) Excluding obs. with *FVGL* gain > 0
FV	**0.737*****	**0.784*****	**0.403**
(*p-value*)	**(0.000)**	**(0.000)**	**(0.370)**
SIZE	-0.097*	-0.099*	-0.112**
	(0.082)	(0.073)	(0.033)
LEV	-0.069	-0.075	-0.033
	(0.538)	(0.508)	(0.756)
MB	-0.161*	-0.159*	-0.157*
	(0.083)	(0.077)	(0.054)
CFO	-3.270***	-3.237***	-3.225***
	(0.002)	(0.002)	(0.001)
Constant	0.727	0.774	1.043
	(0.031)	(0.570)	(0.416)
Industry Fixed Effect	YES	YES	YES
Year Fixed Effect	YES	YES	YES
Pseudo R^2	0.026	0.026	0.022
Observations	7673	7641	7453

The following regression is estimated for the sample period 2007-2009 using panel data with firm-level clustered standard errors for the estimation of the p-values.

$$Suspect_{it} = b_0 + b_1 FV_{it} + b_3 SIZE_{it} + b_4 LEV_{it} + b_5 MB_{it} + b_6 CFO_{it} + e_{it} \quad (5)$$

*P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.

Table 7: Test of H_1 robustness check - logistic regression analysis of fair value choice and earnings management using matched sample

Variables	(1)	(2)	(3)
EM	**8.375*** **	**10.654*** **	**12.524*** **
(*p-value*)	**(0.000)**	**(0.000)**	**(0.000)**
SIZE	0.260	0.415	0.322
	(0.361)	(0.361)	(0.710)
LEV		1.794***	2.618***
		(0.009)	(0.001)
CFO		-2.268	-4.784
		(0.517)	(0.335)
PPE		-2.864*	-4.357**
		(0.087)	(0.041)
RETURN		0.441	0.799
		(0.442)	(0.663)
LOSS		-1.175*	-1.657**
		(0.095)	(0.013)
*BIG*4		-1.694	-2.446
		(0.291)	(0.215)
CHAIR_CEO		0.803	1.022
		(0.313)	(0.258)
DOM		0.152	0.231
		(0.825)	(0.749)
STATE		-0.495	-0.767
		(0.373)	(0.241)
Constant	-9.332	-13.456	-12.181
	(0.148)	(0.203)	(0.524)
Year Fixed Effect	NO	NO	YES
Firm Fixed Effect	NO	NO	YES
Pseudo R^2	0.097	0.243	0.303
Observations	126	126	126

The following regressions are estimated for the sample period 2007-2009 using panel data with firm-level clustered standard errors for the estimation of the p-values.

$FV_{it} = b_0 + b_1 EM_i + b_2 SIZE_{it} + b_3 LEV_{it} + b_4 CFO_{it} + b_5 PPE_{it} + b_6 RETURN_{it} + b_7 LOSS_{it} + b_8 BIG4_{it} + b_9 CHAIR\_CEO_{it} + b_{10} DOM_{it} + b_{11} STATE_{it} + e_{it}$ *(2)*

*P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.

Table 8: Analysis of investment property location

Panel A: Logistic regression analysis of fair value choice and investment property locations (Comparing the effect of *IPLOC* and *HQ*)

Variables	(1)	(2) *HQ = HQ1*	(3) *HQ = HQ2*
EM	**16.636*** **	**8.029*** **	**14.781*** **
(*p-value*)	**(0.001)**	**(0.007)**	**(0.000)**
IPLOC	**0.689*** **		
	(0.007)		
EM × IPLOC	**-3.202*** **		
	(0.000)		
HQ		**2.526** **	**0.648** **
		(0.039)	**(0.012)**
EM × HQ		**-12.696*** **	**-3.035*** **
		(0.004)	(0.001)
SIZE	0.057	0.050	0.024
	(0.914)	(0.923)	(0.963)
LEV	0.542	0.588	0.613
	(0.357)	(0.240)	(0.232)
CFO	-3.331	-3.637	-3.237
	(0.219)	(0.163)	(0.209)
PPE	-5.402**	-5.342**	-5.329*
	(0.045)	(0.049)	(0.050)
RETURN	0.324	0.272	0.363
	(0.110)	(0.194)	(0.100)
LOSS	-1.043	-0.843	-0.555
	(0.221)	(0.290)	(0.486)
*BIG*4	-10.891***	-11.069***	-10.734***
	(0.000)	(0.000)	(0.000)
CHAIR_CEO	-0.114	-0.096	-0.186
	(0.912)	(0.922)	(0.853)
DOM	-0.295	-0.058	-0.145
	(0.658)	(0.922)	(0.820)
STATE	-1.179	-0.816	-0.862
	(0.201)	(0.322)	(0.300)
Constant	-9.756	-7.477	-8.833
	(0.441)	(0.518)	(0.443)
Industry Fixed Effect	YES	YES	YES
Year Fixed Effect	YES	YES	YES
Pseudo R^2	0.279	0.238	0.258
Observations	448	448	448

VUONG Test

	Model(1)	Model(2)	Model(3)	(1) vs. (2)	(1) vs. (3)
Log Likelihood	-50.076	-53.019	-51.899	**Z = 1.314 (p = 0.189)**	**Z = 1.510 (p = 0.131)**

Panel B: Logistic regression analysis of fair value choice and investment property locations (Including both *IPLOC* and *HQ*)

Variables	(1) *FV (HQ = HQ1)*	(2) *FV (HQ = HQ2)*
EM	**17.899*** **	**19.366*** **
(*p-value*)	**(0.001)**	**(0.000)**
IPLOC	**0.736** **	**0.582**
	(0.041)	**(0.235)**
EM × IPLOC	**-3.143*** **	**-2.609* **
	(0.005)	**(0.070)**
HQ	**0.307**	**0.242**
	(0.841)	**(0.604)**
EM × HQ	**-3.908**	**-1.262**
	(0.443)	**(0.373)**
SIZE	0.129	0.096
	(0.816)	(0.869)
LEV	0.581	0.576
	(0.296)	(0.302)
CFO	-3.351	-3.278
	(0.195)	(0.226)
PPE	-5.478**	-5.495*
	(0.047)	(0.058)
RETURN	0.349	0.380*
	(0.111)	(0.091)
LOSS	-1.148	-0.932
	(0.182)	(0.251)
BIG4	-12.054***	-11.813***
	(0.000)	(0.000)
CHAIR_CEO	-0.051	-0.151
	(0.960)	(0.885)
DOM	-0.221	-0.235
	(0.737)	(0.744)
STATE	-1.030	-1.013
	(0.276)	(0.273)
Constant	-11.911	-11.520
	(0.376)	(0.405)
Industry Fixed Effect	YES	YES
Year Fixed Effect	YES	YES
Pseudo R^2	0.287	0.288
Observations	448	448

The regressions are estimated for the sample period 2007-2009 using panel data with firm-level clustered standard errors for the estimation of the p-values.

$$FV_{it} = b_0 + b_1 EM_i + b_2 HQ_{it}(IPLOC_{it}) + b_3 EM_i \times HQ_{it}(IPLOC_{it}) + b_4 SIZE_{it} + b_5 LEV_{it} + b_6 CFO_{it} + b_7 PPE_{it} + b_8 RETURN_{it} + b_9 LOSS_{it} + b_{10} BIG4_{it} + b_{11} CHAIR\_CEO_{it} + b_{12} DOM_{it} + b_{13} STATE_{it} + e_{it} \quad (6)$$

$$FV_{it} = b_0 + b_1 EM_i + b_2 IPLOC_{it} + b_3 EM_t \times IPLOC_{it} + b_4 HQ_{it} + b_5 EM_i \times HQ_{it} + b_6 SIZE_{it} + b_7 LEV_{it} + b_8 CFO_{it} + b_9 PPE_{it} + b_{10} RETURN_{it} + b_{11} LOSS_{it} + b_{12} BIG4_{it} + b_{13} CHAIR\_CEO_{it} + b_{14} DOM_{it} + b_{15} STATE_{it} + e_{it} \quad (7)$$

Since investment property location is not required to disclose in the financial reports, we hand-collected a sample of 448 firms which have their investment property locations disclosed. For those having investment properties at a single region, *IPLOC* is equal to the *HQ2* index. For those having investment properties at multiple regions, *IPLOC* is equal to the mean of *HQ2* scores from each of those regions.

*P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.

Table 9: Logistic regression analysis of fair value choice, earnings management, and firm location (with alternative measure of discretionary accruals using modified Jones model)

Variables	(1)	(2) *HQ = HQ1*	(3) *HQ = HQ2*
EM	**3.859****	**7.651*****	**8.752*****
(*p-value*)	**(0.023)**	**(0.001)**	**(0.001)**
HQ		**1.708***	**0.256**
		(0.091)	**(0.162)**
EM* × *HQ		**-8.147*****	**-1.319*****
		(0.006)	**(0.010)**
SIZE	0.088	0.114	0.105
	(0.768)	(0.710)	(0.736)
LEV	0.762***	0.813***	0.816***
	(0.007)	(0.003)	(0.003)
CFO	-3.612**	-3.922**	-3.736**
	(0.029)	(0.018)	(0.024)
PPE	-3.226	-3.375	-3.780*
	(0.163)	(0.140)	(0.091)
RETURN	0.437	0.374	0.394
	(0.324)	(0.344)	(0.337)
LOSS	-0.500	-0.383	-0.258
	(0.575)	(0.658)	(0.760)
*BIG*4	-0.085	-0.221	-0.215
	(0.931)	(0.832)	(0.839)
CHAIR_CEO	-0.101	-0.081	-0.049
	(0.884)	(0.908)	(0.944)
DOM	-0.067	0.028	0.010
	(0.883)	(0.953)	(0.984)
STATE	-1.358***	-1.353**	-1.368**
	(0.009)	(0.012)	(0.010)
Constant	-7.070	-8.683	-8.628
	(0.297)	(0.221)	(0.232)
Industry Fixed Effect	YES	YES	YES
Year Fixed Effect	YES	YES	YES
Pseudo R^2	0.157	0.183	0.186
Observations	1545	1545	1545

The following regression is estimated for the sample period 2007-2009 using panel data with firm-level clustered standard errors for the estimation of the p-values.

$$FV_{it} = b_0 + b_1 EM_i + b_2 HQ_{it} + b_3 EM_i \times HQ_{it} + b_4 SIZE_{it} + b_5 LEV_{it} + b_6 CFO_{it} + b_7 PPE_{it} + b_8 RETURN_{it} + b_9 LOSS_{it} + b_{10} BIG4_{it} + b_{11} CHAIR\_CEO_{it} + b_{13} DOM_{it} + b_{14} STATE_{it} + e_{it} \quad (3)$$

Earning management potential, EM_i, is calculated using the modified Jones Model based on Larcker and Richardson (2004)

$$ACCR_{it} = b_0 + b_1(1/AT_{it-1}) + b_2(\Delta REV_{it} - \Delta AR_{it}) + b_3 PPE_{it} + b_4 BM_{it} + b_5 CFO_{it} + e_{it}$$

Where ΔAR_{it} is the change of accounting receivables; BM_{it} is the book value of common equity over the market value of common equity; CFO_{it} is operating cash flows. All variables are scaled by total assets at year t-1. The sample period spans the years 2000-2006

*P<0.10 **P<0.05 ***P<0.01. See Data Appendix for variable definitions.