Fair Value, Historical Cost model, and Audit Fees: Evidence from Investment Properties

Abstract

This study examines the effect of fair value model versus historical cost model for investment property on audit fees. Using China's real state firms data from 2007-2014, controlling for other determinants of audit fees, this study finds that audit fees are higher for firms reporting investment property at the fair value model relative to those reporting investment property at the cost model. This study also finds that firm reporting investment properties at the fair value located in the cities with active markets leads to lower audit fees than those located in the remote areas with less active markets. This study does not find that investment property valued under the fair value model audited by industry specialist leads to higher audit fees than investment property audited by non-industry specialist. Finally, this study provides evidence that firms use external appraisers to monitor the fair value estimates of investment properties leads low audit fees. Overall, our result suggests that fair value measurements leads to lower audit fees in the developed regions relative to less developed regions.

Keywords: Fair value model, cost model, investment property, audit fees, industry specialist, appraiser.

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1.Introduction

Motivated by the debate on the costs and benefits of adopting fair value accounting, and the adoption of IAS 40 *investment property* that permit managers to choose either the fair value model or the cost model to report firms' investment property, this study investigates the effect of fair value model versus historical cost model for investment property on audit fees in the developing country. In particular, this study examines whether investment property valued under the fair value model located in the developed (e.g., big city) regions leads to lower audit fees than investment property located in the less developed (e.g., remote city) regions. This study also investigates whether investment property valued under the fair value model audited by external industry specialist leads to higher audit fees than those audited by non-industry specialist. Finally, this study examines whether the fair value estimates of investment property under fair value model conducted by external appraiser leads to lower audit fees than that conducted by managers.

Using a sample of China's real estate firm during 2007-2014, the study finds that audit fees are higher for firms' investment property valued at the fair value model relative to investment property valued at the cost model, however, this study finds that audit fees are lower for firms reporting investment property located at the developed areas relative to less developed areas. This study also finds that the use of external appraisers has significantly negative relations with audit fees. The negative association supports the view that the appraisers provide higher-quality audits of fair value estimate of investment property which reduces auditors' efforts and lower the monitoring cost, compared to the fair value of investment property monitored by

internal appraiser. This study does not find that investment property valued under the fair value model audited by industry specialist leads to higher audit fees than investment property audited by non-industry specialist. Overall, the study provides evidence that investment property valued at fair value model leads to higher audit fees unless the fair value estimates are reliable. This study also provides evidence that the audit fees reduce for firm employing external appraiser.

Prior studies suggest that the cost of IFRS implementation in the developed and underdeveloped markets and the complexity of auditing fair value estimates and risk, and audit's business risk and audit effort are related to audit fees (Hay et al., 2006). De George, et al. (2013) document that the compliance costs increases for publicly-traded Australian firms following the IFRS adoption due to the complexity of IFRS-exposure regarding to fair value measurement. Some researchers document that audit fees for European property firms after IFRS adoption is lower for firms' properties reported based on fair value model than that property reported at depreciated cost subject to impairment test (Goncharov, Riedl, and Sellhorn., 2014). Some researchers document that firms in the United Kingdom and Australia are more likely to adopt historical cost or modified historical cost model which recognized fair value assets in the balance sheet other than employ fair value model which recognized the changes in fair value of assets in the income statement. Their finding implies that the benefit of adoption of fair value measurement does not exceed its costs (Cairns, Massoudi, Taplin, and Tarca, 2011). Based on prior studies, it's not clear whether employing fair value measurement would increase audit fees in the developed and less developed regions, whether adoption of fair value measurement makes the costs exceed its benefits.

The explanation for the increased of audit fees after IFRS adoption may relate to IFRS are principle-based standards, the primary focus of IFRS is on fair value

measurement which provides managers substantial discretion in accounting choices and requires more professional judgement in the financial reporting process which increases risk of reporting errors, in particular when the market data is not available. Therefore, auditors need to put more efforts to manage the risk that comes from fair value measurements (Hail, Leuz and Wysocki 2009; De George, Ferguson, and Spear 2013; Bratten et al., 2013).

Prior studies document that if fair value estimates are less verifiable or thin trading in the markets, the fair value can be distorted (Laux and Leuz, 2009). Therefore, auditors may need to put more efforts to verify the fair value estimate to avoid material misstatements risk. For instance, the inputs of fair value estimate based on Level 3, driven from unobservable inputs by discounted from cash flows analysis, may require more auditors' effort than that of the observable inputs (Ettredge, Xu, Yi., 2014; Goncharov, Riedl, and Sellhorn., 2014). Audit fees, therefore, are likely to be various with the level of task difficulty of auditing fair value estimates in the liquidity and illiquidity markets. IAS 40 provides managers opportunity to influence the inputs of fair value estimates and quoted prices of property when the market is illiquidity or identical property is not available.

A number of studies focus on investigating whether IFRS adoption or employing fair value accounting increase value relevance of accounting information (Hung and Subramanyam, 2007; Barth et al., 2008; He et al., 2009; Lin et al., 2012). Barth et al. (2008) find firms adopting international accounting standards exhibit more value relevance of accounting information and more timely loss recognition by comparing firms that apply local GAAP in 21 countries. Some researchers suggest that the effect of IFRS adoption in the mature market can be different from the emerging market. They find that adopting fair value accounting in the emerging market does not increase the value relevance of accounting information due to the

institutional factors, such as, ineffective institutional infrastructure may affect the application of fair value accounting and shape financial reporting incentives (He et al., 2012). Therefore, Implementation of fair value accounting in the emerging market is challenge for auditing fair value estimates due to lack of well-function infrastructure to support the reliable fair value inputs. The association, therefore, between audit fees and fair value measurements can be very in the developed market and less developed market.

Few studies explore the issue regarding to IFRS adoption and audit fees and the empirical results are mixed. Using publicly-traded Australian companies as sample, De George, et al. (2013) examine the compliance costs of IFRS and audit fees. They find the compliance costs of IFRS increases following with audit complexity of IFRS-exposure at the time of transition to IFRS. Using the banking data during 2008-2011, Ettredge, Xu, Yi. (2014) examine the association between audit fees and bank's fair valued assets measured at fair value using Level 1, Level 2 and Level 3 inputs. They find that audit fees are positively associated with the proportion of bank's fair-valued assets. In particular, they find audit fees are more significantly associated with the proportions of the least verifiable fair-valued assets measured by Level 3 input than that measured by Level 1 and Level 2 inputs. Using European property firms after reporting of fair-valued property is compulsory, Goncharov, et al., (2014) find that firm's audit fees is lower for property reported at fair value than that property reported at depreciated cost subject to impairment test. They also find that audit fees are positively associated with both for the recognition of fair-valued assets on the balance sheet (versus disclosure fair-valued assets in the footnotes) and more complex of estimation of fair value. Overall, they suggest that employing fair value leads to lower monitoring costs.

China provides an ideal setting for investigating the association between audit

fees and fair value measurement. China substantially converges its accounting standards with IFRS since January 1, 2007. Investment property in all Chinese listed firms is required to be measured based on Chinese Accounting Standards 3 (CAS 3) which is consistent with IAS 40 *investment property* except that Chinese Accounting Standards 3 does not mandate firms that use the cost model to disclose the fair values of these investment property in the footnotes. This provides a cleaner test whether firm adopting fair value model leads to higher audit fees than that firm employing cost model to report investment property. In addition, in order to increase credibility, CAS 3 requires firms to stick on the cost model unless the firm can provide evidence that the fair value of the investment property can be obtained from an active market or through values of similar property in an active market and the fair value estimate is reliable. This provides an opportunity to test whether audit fees differ for firms applying fair value model in the developed areas versus less developed areas in the emerging market.

This study contributes to the literature on the benefits and costs of fair value accounting measurements by examining whether audit fees varies for firms reported fair value model (the recognition of the fair values changes in the income statement) versus cost model (depreciated cost less accumulated impairment losses) for investment properties under IAS 40 in the developing country. More specifically, this study contributes to the literature of corporate governance and audit fees by investigating the effect of external appraiser on the reliability of fair value estimate and audit fees. Our findings provide evidence that the appraisal estimates of fair value conducted by independent external appraisers reduces audit risk and audit fees, which is an important policy implications for IASB and regulators governing in the emerging capital markets, due to under the IAS 40, the estimate of fair value to be evaluated by external appraisers is not required but be encouraged [IAS 40.79].

The remainder of the paper is organized as follows: Section 2 discusses the accounting standards of IAS 40 and institutional background of China. Section 3 reviews prior research and develops hypotheses. Section 4 discusses research design and sample selection. Section 5 reports the empirical results. Section 6 concludes.

2. Accounting standards of IAS 40 and institutional background

To provide more relevant information to investors about non-financial investment assets, the IASB issues IAS 40 *investment property* allows the use of fair value accounting for real estate investment properties, which is effective January 1, 2005. IAS 40 *investment property*[1] provides managers option to select fair value model or cost model to evaluate investment property after the initial measurement. Under the fair value model, after the initial purchase the investment property is reported on the balance sheet at market values [IAS 40.33], with annual change in the market value recognized in the income statement [IAS 40.35]. Investment property under the cost model is carried at cost less accumulated depreciation and impairment losses [IAS 40.56]. Firms using the cost model are required to disclose the fair value estimates of investment property in the footnotes, except for certain circumstances when the fair value of the investment property is not able reliably estimated. The most reliable estimate of fair values is determined by current property prices in an active market for similar properties in the same condition and location as well as subject to similar lease or other contracts [IAS 40.45]. If there is no appropriate reliable market estimate available, firm may use the estimates of the model supported by external evidence [IAS 40.46]. However, the estimate of fair value to be evaluated

1 Investment property is defined as land and buildings held to earn rental income or for capital appreciation, or both.

by external appraisers is not required but be encouraged [IAS 40.79].

Under the cost model, the investment property is measured at depreciated cost less accumulated impairment losses. Under the fair value model, the changes in fair value of investment property should be recognized as gains or losses in the statement of the comprehensive incomes. The input of fair value estimates of investment property can be gotten form similar property in the active market for the same condition and location or from the less active market by discounting future cash flows of investment property.

Effective January 1, 2007, China permits listed firms to choose either using fair value model or cost model to measure investment property under Chinese Accounting Standards (CAS) 3. CAS 3 is similar to IAS 40 except that CAS 3 does not mandate firm employing the cost model to disclose the fair values estimates of the investment assets in the footnotes. In addition, CAS 3 requires firms to use the cost model unless the firms provide evidence that the fair value estimates of the investment properties obtained from through values of similar investment properties in an active market or active markets and the fair value estimates are reliable.

3. Prior Research and Hypothesis Development

This study encompasses two strands of literature: fair value measurement and auditing issues, and the factor effects of driver of audit fees. The following sections summarize prior literatures in these two areas and then develop testable hypotheses.

3.1. Fair value measurement and auditing fair value estimates

Many studies examine whether fair value of tangible long-lived assets and fair value financial assets are value relevant in recent years (Barth & Clinch, 1998; Owusu-Ansah & Yeoh, 2006; So & Smith, 2009; Lopes and Walk, 2012). Some

studies find that the revaluation of tangible assets does not increase value-relevant information instead of increasing managerial opportunism (Lopes and Walk, 2012).

Using U.S. banking-holding firms as sample, Khurana and Kim (2003) find that fair value accounting for financial assets is more value relevant than historical cost accounting for large bank-holding firms than small bank-holding firms when fair value measurements are reliable. However, historical cost accounting is more value relevant than fair value accounting for financial assets for small bank-holding firms if the financial asset is less reliable when financial assets is not actively traded.

Using a sample from New Zealand, Owusu-Ansah and Yeoh (2006) find that the recognition of unrealized gains of properties from changes in fair value in the income statement does not provide more value relevant accounting information than that recognized in the revaluation reserve in balance sheet. Using China's data, He, Wong, and Young (2009) also find that fair-value-based earnings under IFRS, e.g., fair value changes of hedging instruments, trading securities, gains on debt restructuring, goodwill impairment loss and investment property, are not value relevant. They suggest that fair value estimates are likely to be manipulated by management when the market is illiquid. Prior study documents that auditors are likely to put more effort to correspond to auditing fair value estimates due to the complexity of fair value measurements (Martin et al., 2006) .

Some study document that firms apply cost model leads to high audit fees than firms apply fair value model since firms apply cost model are required to employ impairment test and depreciation of investment property, which relates to the estimation uncertainty and complexity of audit assets at fair value. Prior studies propose that impairment test involve the underlying measurement rely on private information and the unverifiable fair value estimate (Burgstahler et al., 2006) which provides managers with superior discretion to determinate assets impairment (Zhang

and Zhang, 2015). Accordingly, managerial discretion in determining impairment of investment properties should increase auditors' effort in verification that results increase audit fees.

Ettredge et al. (2014) find that firms' audit fees increase for firms with greater use of fair value accounting for financial instruments. Using a sample of UK real estate firms and US real estate firms, Goncharov et al. (2014) find that audit fees are higher for US real estate firms that report property at historical cost than that for UK real estate firms that report property at fair value. They also document that audit fees increases in firms with more complexity of fair value estimates and if firms recognize the changes in fair value of investment property in the income statement (versus disclose fair-valued assets in the footnotes).

Based on the literature, firms applying fair value model to measure their investment property are more likely to increase audit fees due to auditor should increase their efforts to verify the reliability of fair value estimates. This, therefore, leads to our first hypothesis:

H1: Investment property valued using the fair value model leads to higher audit fees than investment property under the cost model

3.2. Location of investment property and outside monitors

Prior study suggests that firm audited in the expensive city will cost more due to the city effect (Hay, 2013). However, some studies find that the cost of preparing fair value accounting information is higher in less active market than the active market (Christensen and Nikolaev, 2013; Ettredge et al., 2014).

Christensen and Nikolaev (2013) find that managers may select fair value accounting over historical cost accounting when the costs of getting reliable fair value estimates is low, e.g., for more liquid assets. Using a sample of banking industry

during 2008-2011, Ettredge et al. (2014) examine the association between the fair-valued assets and audit fees. They find that the positive association between fair-valued assets employing Level 1 or Level 2 inputs and audit fees is lower than the positive association between fair-valued assets employing Level 3 inputs and audit fees. Their finding suggests that audit fee increases in firms with the greater difficulty of verifying fair-valued assets

Based on prior studies, the compliance cost of IFRS increases for firms with great exposure to audit complexity (De George et al., 2013), this study, therefore, predicts investment properties located in the developed areas than that in the less developed areas leads to lower audit fees due to investment properties located in the less developed area increases the audit efforts in verifying the fair value estimates in turn increases the audit fees.

H2a: Investment property located in the developed areas valued under the fair value model leads to lower audit fees than investment property located in the less developed areas.

Several studies examine the association between auditor industry specialization, audit quality and audit fees (Muller & Riedl, 2002; Mayhew and Wilkins, 2003; Reichelt, K. and D. Wang., 2010; Minutti-Meza, 2013; Ettredge, et al., 2014; Francis and Gunn, 2015), their results are mixed. Some studies document that appraisal estimates of fair value assets conducted by external appraiser show relatively reliability than that conducted by managers (Muller and Riedl, 2002) and suggest that audit fees are associated with auditor specialization (Mayhew and Wilkins, 2003; Hay, 2013). Mayhew and Wilkins (2003) apply Porter's (1985) theory of differentiation and competition to examine the association between the industry specialization and

audit fees. They find that audit firms that have higher market shares earn fee premiums than their competitors.

Using within-industry market share as a proxy for industry specialization, Reichelt and Wang (2010) find that firms audited by specialist auditor provides better quality of financial reporting. Francis and Gunn (2015) also find that firms' audited quality of earnings improved by firms with industry expertise of auditors. However, Minutti-Meza (2013) finds that there is no difference in audit quality between firm with industry specialist auditors and non-specialist auditors.

Ettredge, et al. (2014) document that auditor of bank specialist normally charges lower audit fees to their clients but they charge more for clients with higher proportions of fair-valued assets using Level 2 inputs. Based on the literature, this study predicts that auditor expertise charges higher audit fees to firms reporting investment property at fair value than those reporting investment property at the cost model.

H2b: Investment property valued under the fair value model audited by industry specialist leads to higher audit fees than investment property audited by non-industry specialist

Under the IAS 40 *investment property*, firms are encouraged to employ external appraisers to evaluate fair value estimates [IAS 40.79]. This suggests that external appraisers may provide expertise and efforts to evaluate the reliability of fair value estimates of property which can reflect potential substitution of audit efforts.

Most of prior studies suggest that firm employing external appraisers other than internal appraisers provide more accurate fair value estimates (Dietrich et al.,2001) and lower the information asymmetry (Muller and Riedl, 2002), although Goncharov, et al., (2014) find that firms using external monitor, external appraisers, do not reduce audit fees. Using a sample of UK property firms, Dietrich et al. (2001) find the

estimates of fair value conducted by external appraisers are more accurate than those conducted by internal appraisers. Muller and Riedl (2002) also find that accounting information asymmetry is lower for firms that the appraisal estimates conducted by external appraisers instead of internal appraiser.

Using a sample of Australia data, Yao et al. (2015) examine whether firm employing an independent appraiser lower audit fees by examining the association between the revaluation of non-current assets and audit fees. Their findings suggest that using independent appraiser reduces audit risk and audit fees.

Accordingly, this study, therefore, expects that firms' audit fees are lower when the appraisal estimate of fair value are conducted by external appraisers than firms that do not to use of external appraisers

H2c: The fair value estimates of investment property under fair value model conducted by external appraiser leads to lower audit fees than that conducted by managers

3.3. Factors related to audit fees

Hay (2013) documents that audit fee is associated to clients attributes, including client size, and client complexity which measured by client's number subsidiaries, and auditor attributes, e.g., audit firm tenue, and engagement attributes, e.g., audit opinion and non-audit service. Therefore, this study also controls for audit firm tenue, audit opinion, and non-audit fees.

4. Research design

4.1. Research method

To test H1, whether investment property valued using the fair value model

leads to less audit fees than investment property under the cost model, we employ the model (1) below.

$$LogAF = ß_0 + ß_1 NAF + ß_2 CostIP + ß_3 FVIP + ß_4 Impair\_D + ß_5 LOSS + ß_6 AR/TA + ß_7 LEV + ß_8 OTH\ IMP\_D + ß_9 INTANG + ß_{10} L\ DEBT + ß_{11} ACC + ß_{12} CA/CL + ß_{13} OPIN + ß_{14} CONCER + ß_{15} OTH\ FV\ AL + ß_{16} TOTSUB + ß_{17} TENURE + ß_{18} BIG\ 4 + ß_{19} LIST + ß_{20} YEAR\ D\ L + e \quad (1)$$

Cost IP and *FVIP* are the test variables, *Cost IP* is investment property reported at the depreciated cost under the cost model of IAS 40, which captures audit efforts associated with reporting the depreciated cost.. *FVIP* is investment property reported under the fair value model which captures the auditor efforts associated with the recognition of the changes in fair value of investment property in the income statement on audit fees. *Impair_D* captures audit efforts associated with the report of impairment charge on audit fees. This study expects that the coefficient of *FVIP* is positive (i.e. $\beta_3 > 0$) if Investment property valued using the fair value model leads to higher audit fees than investment property valued under the cost model.

CONTROL is the control variable which relates to characteristics of the firm and the audit firms are borrowed from George, et al. (2013). *CONTROL* is control variable including audit complexity. Prior studies suggest that audit fees are positively associated with audit complexity, e.g., accounting receivables, accruals, subsidiaries, and firms size (De George et al., 2013; Goncharov, et al., 2014), and firms' risk (Stice, 1991). To capture audit complexity, this study includes accounting receivables *(AR/TA*), absolute value of accruals, (*ACC),* intangibles (*INTANG*), and number of subsidiaries (TOTSUB), the audit fee is expected to be higher for firms with these characteristics, therefore, the expected signs on these coefficients are positive. This study expects the sign of the non-audit fees (*NAF*) is positive due to the complementary association between statutory audit fees and non-audit service fees

(De George et al., 2013). Prior study suggests that auditing risk can be measured by firms' liability (Whisenant et al., 2003), this study, therefore, expects a positive association between higher audit fees with risk exposure relating to current ratio and long term debt (*CA/CL* , *L DEBT*), and the litigation risk, e.g., negative earnings and modified opinion *(LOSS, OPIN*). This study predict the sign of audit firm tenure (*TENURE*) is negative due to the long-term business relationship between CPA firms with their client may offer efficient service and charge less audit fees. Following Hay (2013), this study also control for Big 4 (*BIG 4*). The sign of Big 4 is expected to be positive due to that firms audited by Big 4 are perceived to capture high quality (Goncharov, et al., 2014). We also control for other impairment loss and other fair value assets and liabilities (*OTH IMP_D, OTH FV AL*), firm with going concern (*CONCER*) and firm cross listed at other exchanges. Finally, this study controls for year effect and industry effect.

This study expresses dependent variable *LogAF* in log form to mitigate the effect of non-linear relation (Hay et. al., 2006; Goncharov, et al., 2014). *CostIP* refers to investment property under the cost model divided by total assets. *FVIP* refers to Investment property based on fair value model divided by total assets. *NAF* is the Natural logarithm of total non-audit fees. *IMP_D*, an indicator variable equal to one if firm charges to impairment loss and zero otherwise. *LOSS*, an indicator equal to one if firm report negative earnings and zero otherwise. *AR/TA* is ratio of accountable receivable to total assets. *LEV* is ratio of total debts to total assets. *OTH IMP_D*, an indicator equal to 1 if firm reports impairment loss other than impairment loss of investment property and zero otherwise. *INTANG* refers to the ratio of intangible assets to total assets. *L DEBT*, the ratio of long-term debt to total assets. *ACC* refers to absolute value of accruals, computed as difference between net income and operating cash flow, scaled by total assets. *CA/CL* refers to the ratio of current assets

divided by current liabilities. *OPIN*, an indicator equal to one if firm receive modify opinion and zero otherwise. *CONCER* is an indicator equal to one if firms receive a mortified opinion in current year and zero otherwise. *OTH FV AL* is the ratio of firm's other fair-valued-assets and fair-valued-liabilities to total assets. *TOTSUB* refers to natural log of 1 plus the number of total subsidiaries. *TENURE* refers the natural log of number of years that the relationship between audit firm and client. *BIG 4*, an indicator equal to 1 if firm audited by Big 4 CPA firms and zero otherwise. *LIST*, an indicator equal to 1 if firms cross listed at another exchanges and zero otherwise. *YEAR D*, an indicator equal to 1 for individual fiscal year and zero otherwise.

To test H2a, whether investment property located in the big city valued under the fair value model leads to higher or lower audit fees than investment property located in the remote city, this study conducts Model (2) by examining the interaction between investment properties located in the big city and fair-valued investment property as it affects audit fees.

$$\begin{aligned} LogAF = {} & ß_0 + ß_1 NAF + ß_2 CostIP + ß_3 FVIP + ß_4 AREA + ß_5 AREA*FVIP \\ & + ß_6 Impair\_D + ß_7 LOSS + ß_8 AR/TA + ß_9 LEV + ß_{10} OTH\ IMP\_D \\ & + ß_{11} INTANG + ß_{12} L\ DEBT + ß_{13} ACC + ß_{14} CA/CL + ß_{15} OPIN + ß_{16} \\ & CONCER + ß_{17} OTH\ FV\ AL + ß_{18} TOTSUB + ß_{19} TENURE + ß_{20} BIG\ 4 \\ & + ß_{21} BIG\ 4 + ß_{22} LIST + ß_{23} YEAR\ D\ L + e \end{aligned} \quad (2)$$

AREA is an indicator variable equal to one if investment property located in a big city (developed area), and zero otherwise. The variable of interest in Model (2) is the interaction term *AREA*FVIP*. The coefficient on *AREA*FVIP* is expected to be positive if CPA firms charge higher audit fees for investment properties of firms located in the developed area than that investment properties of firms located in the undeveloped area.

To test H2b, whether investment property based on the fair value model audited

by an experienced auditor of industry specialist leads to higher audit fees than that firm conducts fair value model audited by non-industry specialist, this study conducts Model (3) by examining the interaction between investment properties audited by industry specialist and fair-valued investment property as it affects audit fees.

$$\begin{aligned} LogAF = {} & ß_0 + ß_1\, NAF + ß_2 CostIP + ß_3\, FVIP + ß_4\, ISPEC + ß_5 ISPEC*FVIP \\ & + ß_6 Impair\_D + ß_7\, LOSS + ß_8\, AR/TA + ß_9\, LEV + ß_{10}\, OTH\ IMP\_D \\ & + ß_{11}\, INTANG + ß_{12}\, L\ DEBT + ß_{13}\, ACC + ß_{14}\, CA/CL + ß_{15}\, OPIN \\ & + ß_{16}\, CONCER + ß_{17}\, OTH\ FV\ AL + ß_{18}\, TOTSUB + ß_{19}\, TENURE \\ & + ß_{20}\, BIG\ 4 + ß_{21} LIST + ß_{22}\, YEAR\ D\ L + e \end{aligned} \quad (3)$$

The variable of interest in Model (3) is the interaction term *FVA_TA*ISPEC*. *ISPEC*, an indicator equal to one if the auditor is the leading firm-level auditor in the real estate industry in a specific year and zero otherwise. This study expects the coefficient on *FVA_TA*ISPEC* is positive if investment property under the fair value model audited by industry specialist than that audited by non-industry specialists leads higher audit fees, because auditor specialization may capture high quality of audit service and charges high audit fees.

To test H2c, whether investment property based on the fair value model conducted by an external appraiser leads to higher audit fees than that firm conducts fair value model does not conducted by external appraiser, this study conducts Model (4) by examining the interaction between investment properties audited by external appraisers and fair-valued investment property as it affects audit fees.

$$\begin{aligned} LogAF = {} & ß_0 + ß_1\, NAF + ß_2 CostIP + ß_3\, FVIP + ß_4\, APPR + ß_5 APPR*FVIP \\ & + ß_6 Impair\_D + ß_7\, LOSS + ß_8\, AR/TA + ß_9\, LEV + ß_{10}\, OTH\ IMP\_D \\ & + ß_{11}\, INTANG + ß_{12}\, L\ DEBT + ß_{13}\, ACC + ß_{14}\, CA/CL + ß_{15}\, OPIN \\ & + ß_{16}\, CONCER + ß_{17}\, OTH\ FV\ AL + ß_{18}\, TOTSUB + ß_{19}\, TENURE \\ & + ß_{20}\, BIG\ 4 + ß_{21} LIST + ß_{22}\, YEAR\ D\ L + e \end{aligned} \quad (4)$$

The variable of interest in Model (4) is the interaction term *FVA_TA*APPR*.

APPR, an indicator equal to 1 if firm uses the external appraisers to provide investment property fair values and zero otherwise. This study expects the coefficient on *FVA_TA*APPR* is negative if the external appraisers provide investment property fair values leads lower audit fees than that provide by managers.

4.2. Data collection and sample

This study uses a sample of Chinese firms with investment properties listed on China's stock market, which consists of 264 firm-year observations spanning the years 2007-2014. There are 12.5% of investment properties valued at fair value model. We start the sample in 2007 because that is when China has substantially converged its accounting standards with IFRS and adopted IAS 40 *investment property* with some changes. The financial data comes from the *China Securities Market and Accounting Research (CSMAR)* database.

5. Empirical Results

5.1 Descriptive Statistics

Table 1 reports the descriptive statistics of the variables including the mean, median, and standard deviation used in this study. *LogAF* has mean (median) value of 1.871 (1.813) with a low standard deviation (0.307), suggesting that the variation in audit fees of real estate firms is not high. *NAF* has mean (median) value of 0.144 (0) with a low standard deviation (0.449). *CostIP* has mean (median) of 0.063 (0.020) with standard deviation 0.108, indicating that the variation in investment property under the cost model is modest. *FVIP* has mean (median) value of 0.011 (0) with a very low standard deviation (0.040), suggesting that most of real estate firms use the cost model to measure their investment properties, and the variation in investment

property under the fair value model is low. *Impair_D* has mean (median) value of 0.07 (0) with a low standards deviation (0.25).

[Insert Table 1 here]

Table 2 provides both Pearson correlation coefficients among variables used in this study. The Pearson and Spearman correlation coefficients of *NAF(LogAF*) with *FVIP (*the investment property under the fair value model) is positive and significant (positive but insignificant), indicating the investment property under the fair value model is significantly correlated with non-audit fees but not significantly correlated with audit fees. The correlation coefficients of *LogAF* with *LEV, L DEBT, BIG 4*, *BIG 4* FVIP* are positive and significant, suggesting that audit fees is correlated with firms' leverage, long-term debt, and firm audited by Big 4 CPA firms. The correlation coefficient of *LogAF* with external appraiser is negative and significant, indicating that firms using external appraiser reduce audit fees.

[Insert Table 2 here]

5.2 Regression results

Table 3 presents the regression results from estimate of equations (1), (2), (3), (4), and (5) which measure the association between audit fees and investment properties under fair value model and under cost model. All Columns of Table 3 shows that the coefficients on investment properties measured under the fair value model, *FV IP*, are positive and significant as expected, suggesting audit fees are higher for firms' investment properties reported under the fair value model than those reported at the cost model. The coefficients on investment properties measured under the cost model are negative and insignificant. The coefficients on investment properties measured under the cost model reporting impairment loss are positive but

insignificant, suggesting that investment properties reported under the cost model do not lead to high audit fees. The finding support *H1*, suggesting that audit fees are higher for firms' investment property valued under the fair value model relative to investment property valued under the cost model due to the occur of impairment.

Column 2 of Table 3 presents that the coefficients on the interaction of AREA*FVIP is negative and significant (*t*-statistic=-1.80), suggesting that investment property located in the developed areas valued under the fair value model leads to lower audit fees than investment property located in the remote city, our result, therefore, supports H2a. Colum 3 of Table 3 shows that the coefficients on the interaction term of *SPEC*FVIP* are negative but insignificant, suggesting that investment property valued under the fair value model audited by industry specialist do not lead to higher audit fees than investment property audited by non-industry specialist. Therefore, we fail to find evidences that support *H2b*. Colum 4 of Table 3 presents that the coefficients on interaction term of *APPR*FVIP* is negative and significant (*t*-statistic=-1.73), indicating that the use of an independent appraiser to evaluate the estimates of fair-valued investment property reduces audit risk and audit fees, the result, therefore, support *H2c*.

6. Conclusion

This study examines whether audit fees increase for firm reporting investment property at the fair value model, which subjects to the recognition of the changes in fair value of investment property in income statement, relative to firms reporting the cost model which subject to impairment test in the develop and less develop regions.

Using China's real state firms data from 2007-2014, controlling for other determinants of audit fees, this study find higher audit fees for firms reporting investment property at the fair value model relative to those reporting investment

property at the cost model in the emerging market. Different from the results of Goncharov et al. (2014), they find higher audits fees for firm reporting investment property at the historical cost relative to those employing the fair value model in the developed markets. Our results suggest that employing fair value leads to higher monitoring costs in the emerging markets. Consistent with the view of the implementation of IFRS with the complexity of fair value-exposure increases the audit fees (De George, et al., 2013). This study also finds that firm reporting investment properties at the fair value located in the cities with active markets leads to lower audit fees than those located in the remote areas with less active markets. Different from the finding of Goncharov, et al., (2014), they find that firms employing external appraisers do not reduce audit fees. We provide evidence that firms use external appraisers to monitor the fair value estimates of investment properties leads low audit fees. Our result is consistent with the finding of Yao et al. (2015), suggesting that fair value estimates of assets monitored by external appraiser reduces audit fees.

This study finds that there is no significantly difference in audit fees for firm using an industry specialist or not to monitor the fair value estimate of investment property. Overall, our result suggests that fair value accounting information leads to lower audit fees in the developed regions relative to less developed regions.

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Table 1: Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std. Dev
LogAF	1.871	1.813	2.929	1.301	0.307
NAF	0.144	0.000	2.064	0.000	0.449
Cost IP	0.063	0.020	0.634	0.000	0.108
FV IP	0.011	0.000	0.278	0.000	0.040
IMP_D	0.072	0.000	1.000	0.000	0.259
LOSS	0.057	0.000	1.000	0.000	0.232
AR/TA	0.110	0.009	5.115	0.000	0.510
LEV	0.608	0.638	2.401	0.015	0.219
OTH IMP_D	0.061	0.000	1.000	0.000	0.239
INTANG	0.021	0.002	0.362	0.000	0.053
L DEBT	0.148	0.144	0.495	0.000	0.111
ACC	0.091	0.021	2.059	0.000	0.221
CA/CL	2.205	1.806	53.454	0.275	3.379
OPIN	0.038	0.000	1.000	0.000	0.191
CONCER	0.023	0.000	1.000	0.000	0.149
OTH FV AL	0.000	0.000	0.011	-0.003	0.001
TENURE	0.905	0.954	1.362	0.301	0.302
BIG 4	0.125	0.000	1.000	0.000	0.331
BIG 4 FVIP*	0.001	0.000	0.091	0.000	0.008
AREA	0.117	0.000	1.000	0.000	0.323
*AREA*FVIP*	0.010	0.000	0.278	0.000	0.039
D_I SPEC	0.144	0.000	1.000	0.000	0.352
*I SPEC*FVIP*	0.000	0.000	0.070	0.000	0.004
APPR	0.610	1.000	1.000	0.000	0.489
*APPR*FVIP*	0.003	0.000	0.188	0.000	0.020
LIST	0.621	1.000	1.000	0.000	0.486
Obs			264		

LogAF is the natural logarithm of total audit fees.
CostIP refers to investment property under the cost model divided by total assets.
FVIP refers to Investment property based on fair value model divided by total assets.
NAF is the Natural logarithm of total non-audit fees.
IMP_D, an indicator variable equal to one if firm charges to impairment loss and zero otherwise.
LOSS, an indicator equal to one if firm report negative earnings and zero otherwise.
AR/TA is ratio of accountable receivable to total assets.
LEV is ratio of total debts to total assets.
OTH IMP_D, an indicator equal to 1 if firm reports impairment loss other than impairment loss of investment property and zero otherwise.
INTANG refers to the ratio of intangible assets to total assets.
L DEBT, the ratio of long-term debt to total assets.
ACC refers to absolute value of accruals, computed as difference between net income and operating cash flow, scaled by total assets.
CA/CL refers to the ratio of current assets divided by current liabilities.
OPIN, an indicator equal to one if firm receive modify opinion and zero otherwise.
CONCER is an indicator equal to one if firms receive a mortified opinion in current year and zero otherwise.
OTH FV AL is the ratio of firm's other fair-valued-assets and fair-valued-liabilities to total assets.
TOTSUB refers to natural log of 1 plus the number of total subsidiaries.
TENURE refers the natural log of number of years that the relationship between audit firm and client.
BIG 4, an indicator equal to 1 if firm audited by Big 4 CPA firms and zero otherwise.
BIG 4 FVIP* is the interaction term *BIG 4* FVIP*
YEAR D, an indicator equal to 1 for individual fiscal year and zero otherwise.
AREA is an indicator variable equal to one if investment property located in a big city (developed area), and zero otherwise.
*AREA*FVIP* is the interaction term *AREA*FVIP*
ISPEC, an indicator equal to one if the auditor is the leading firm-level auditor in the real estate industry in a specific year and zero otherwise.
*SPEC*FVIP* is the interaction term *SPEC*FVIP*
APPR, an indicator equal to 1 if firm's investment properties under the fair value model conducted by external appraisers and zero otherwise
*APPR*FVIP* is the interaction term *APPR*FVIP*
LIST, an indicator equal to 1 if firms cross listed at another exchanges and zero otherwise.

Table 2 Pearson Correlation Coefficients

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1 LogAF	1	.088	-.075	.09	-.071	-.109	.264**	-.066	-.083	.209**	-.226**	-.133*	-.061	-.044	-.04	.137*	.626**	.243**	-.003	.041	.028	.051	-.278**	-.02	-.034
2 NAF		1	-.002	.216**	-.046	.034	.057	-.025	-.041	.104	-.091	-.036	-.002	.03	-.023	.130*	.052	.144*	.127*	.194**	.169**	.238**	.073	.002	-.133*
3 Cost IP			1	-.126*	.06	.071	-.214**	-.046	.159**	.062	.081	-.09	.091	.097	-.011	.034	.146*	-.058	-.171**	-.12	.025	-.046	-.12	-.08	-.199**
4 FV IP				1	-.076	-.033	.082	.043	-.072	.153*	-.085	-.03	-.054	-.042	-.02	.150*	-.045	.168**	.664**	.974**	-.087	.089	-.165**	.460**	.159**
5 IMP_D					1	.058	-.076	-.009	.022	-.108	.072	-.024	-.055	-.042	.195**	-.002	-.061	-.028	-.102	-.07	-.031	-.022	-.048	-.049	-.115
6 LOSS						1	-.048	.143*	-.013	-.186**	.001	-.063	.294**	.182**	.015	-.128*	-.093	-.024	-.039	-.03	-.007	-.019	-.106	.026	-.011
7 LEV							1	.047	-.178**	.303**	-.08	-.325**	.200**	.302**	-.033	-.049	.017	.035	.029	.074	.05	.068	-.005	.057	.032
8 OTH IMP								1	.094	-.019	-.008	-.04	-.05	-.039	-.011	.072	-.096	-.025	.105	.051	-.059	-.02	.073	.185**	.133*
9 INTANG									1	.019	.066	-.043	-.028	-.019	.025	.204**	.116	-.04	-.109	-.06	.02	-.031	.024	-.067	-.058
10 L DEBT										1	-.125*	-.054	-.136*	-.066	-.051	.074	.163**	.047	.179**	.141*	.033	.157*	-.017	.155*	.074
11 ACC											1	.028	.082	.029	-.021	-.013	-.104	-.038	-.092	-.08	-.064	-.031	.023	-.061	.106
12 CA/CL												1	-.062	-.03	-.001	-.086	-.067	-.009	.183**	-.03	-.052	-.003	.113	-.006	.104
13 OPIN													1	.769**	.103	-.096	-.075	-.02	-.072	-.05	-.081	-.016	-.045	-.035	.032
14 CONCER														1	.139*	-.014	-.058	-.015	-.056	-.04	-.063	-.012	.07	-.027	-.038
15OTH FV															1	.034	-.036	-.007	-.027	-.02	-.015	-.006	-.081	-.013	-.101
16 TENURE																1	.098	.035	.072	.150*	.09	.067	.008	-.034	.037
17 BIG 4																	1	.264**	-.138*	-.1	-.155*	-.03	-.426**	-.066	-.177**
18BIG4*FV																		1	-.036	-.03	-.041	-.008	-.125*	-.017	-.128*
19 AREA																			1	.687**	-.015	.209**	.002	.428**	.236**
20AREA*FV																				1	-.078	.093	-.151*	.446**	.195**
21D_I SPEC																					1	.192**	.239**	-.022	-.147*
22 SPEC*FV																						1	.063	.210**	.062
23 APPR																							1	.140*	.08
24APPR*FV																								1	.106
25 LIST																									1

*, ** indicate statistical significance at less than the 5% and 1% level, respectively (two-tailed).

Table 3: The association between audit fees and investment properties under fair value model versus under cost model and firms characters

	ALL		D_AREA		D_SPEC		D_APPR		ALL Control	
Variable	Coeff	Stat	Coeff	Stat	Coeff	Stat	Coeff	Stat	Coeff	Stat
Intercept	1.52	23.81***	1.53	20.87***	1.52	24.16***	1.52	22.64***	1.52	23.01***
NAF	-0.18	-4.16***	-0.20	-3.33***	-0.19	-4.41***	-0.19	-4.25***	-0.20	-4.43***
Cost IP	-0.20	-1.15	0.02	0.15	-0.22	-1.22	-0.20	-1.13	-0.22	-1.23
FV IP	0.46	1.82*	3.81	1.97**	0.60	2.33**	0.70	2.00**	2.44	2.68**
IMP_D	0.04	0.62	0.00	-0.09	0.05	0.82	0.04	0.63	0.05	0.82
LOSS	-0.02	-0.41	-0.05	-1.10	-0.02	-0.52	-0.01	-0.28	-0.02	-0.45
AR/TA	-0.02	-1.27	-0.05	-1.61	-0.02	-1.23	-0.02	-1.14	-0.02	-1.16
LEV	0.25	3.83***	0.27	3.78***	0.23	3.67***	0.25	3.82***	0.23	3.60***
OTH IMP_D	-0.01	-0.21	-0.07	-1.31	0.00	0.05	0.00	-0.01	0.01	0.27
INTANG	-0.46	-2.02**	-0.15	-0.79	-0.49	-2.26**	-0.48	-2.10**	-0.50	-2.22**
L DEBT	0.00	-0.02	0.18	1.12	0.00	-0.04	0.01	0.10	0.00	0.03
ACC	-0.15	-2.45**	-0.20	-2.57**	-0.14	-2.36**	-0.15	-2.38**	-0.14	-2.30**
CA/CL	0.00	-1.39	0.00	-1.22	0.00	-1.45	0.00	-1.45	0.00	-1.55
OPIN	0.04	0.84	0.03	0.53	0.05	1.05	0.05	0.92	0.06	0.99
CONCER	-0.12	-1.63	-0.18	-2.38**	-0.09	-1.34	-0.13	-1.69*	-0.09	-1.22
OTH FV AL	3.15	0.28	-2.16	-0.11	3.72	0.35	3.96	0.35	3.74	0.35
TENURE	0.09	1.95*	0.14	2.70***	0.08	1.69*	0.09	1.80	0.07	1.53
BIG 4	0.55	9.87***			0.58	10.27***	0.56	9.27***	0.59	9.15**
BIG 4 FVIP*									-2.58	-1.38
AREA			-0.03	-0.59					0.03	0.61
*AREA*FVIP*			-3.58	-1.80*					-1.74	-1.92*
D_I SPEC					0.11	2.73**			0.11	2.71**
*SPEC*FVIP*					-0.43	-0.20			-0.09	-0.04
APPR							0.02	0.45	0.00	0.02
*APPR*FVIP*							-0.82	-1.73*	-1.02	-2.00**
LIST	-0.001	-0.01	-0.04	-0.92	0.01	0.34	0.00	-0.04	0.01	0.25
YEAR	Included		Included		Included		Included		Included	
Adj R^2	0.557		0.228		0.568		0.556		0.562	
Obs	264									

*, **, *** indicate statistical significance at less than the 10%, 5%, and 1% level, respectively

LogAF is the natural logarithm of total audit fees.

CostIP refers to investment property under the cost model divided by total assets.

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