



Fair value accounting in China: implementation and usefulness

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Executive summary

In 2006 Chinese regulators, following the international trend, stipulated a new set of accounting standards (CASs), which came into effect for the preparation of the 2007 annual reports by listed companies. The standards are largely based on International Financial Reporting Standards (IFRS) and thus over 23 of them require, or permit, the use of fair value (FV) measurement and/or disclosures.

The primary purpose of this report is to investigate the level of implementation of FV accounting in practice in China, the factors affecting its implementation, and the usefulness of the resulting FV information. In doing so, the report will use public data disclosed by listed Chinese companies, as well as our own independent interviews and questionnaire surveys. China provides an interesting setting within which to examine these issues because it is an emerging economy, the second largest economy in the world, and an important player in the global accounting standards-setting arena. The key findings of our study are as follows.

THE EXTENT OF FV ADOPTION

- In general, our sample companies complied well with the mandatory or partially mandatory requirements of CASs concerning the use of FV to measure non-financial and particularly financial assets, liabilities, or transactions. However, although FV measurement is a mandatory requirement in the impairment tests on long-term assets, our sample companies were less likely to recognise any impairment loss on intangible assets and goodwill than on fixed assets. The main reason for this is that it is more difficult to measure the FV of the former.
- When companies were required to conditionally use FV to measure certain types of asset, liability, or transaction (eg, the exchange of non-monetary assets), few companies had them and if they did have them, few preferred FV measurement. Moreover, although companies can optionally use the FV model for re-measurement of investment property under certain conditions, few companies preferred the FV model.
- Companies largely depended upon external asset appraisers to estimate the FV of assets or liabilities (especially non-financial assets and liabilities). Some even directly used simple methods to identify their FV. For example, some used the closing stock price at the granting date as the FV of executive stock options.
- Compared with non-financial assets or liabilities, most companies used either quoted prices for identical assets or liabilities in the active market, or valuations provided by asset appraisers, as the FV of financial assets or liabilities. In addition, compared with non-financial companies, financial companies experienced larger gains or losses from changes in FV of financial assets or liabilities on operating performance. This is because they held significantly more financial assets or liabilities.
- The amount of FV-related information disclosure was small and in general the quality was low, although non-financial companies disclosed more FV-related information on financial assets or liabilities than non-financial assets or liabilities. However, financial companies disclosed more FV-related information on financial assets or liabilities than non-financial companies.

FACTORS AFFECTING THE IMPLEMENTATION OF FV ACCOUNTING

According to our interviewed CFOs, and the CFOs, auditors and financial analysts who responded to our questionnaire surveys, the main impediments to the implementation of FV accounting were:

- high difficulty in obtaining FV information
- shortage of FV-related technical knowledge and professional judgement skills among accountants
- high costs and complexity of measuring FV
- effect of FV adoption on earnings volatility
- imperfect accounting standards and insufficient guidance on the application of FV
- imperfect supporting systems and facilities.

Some of these implementation difficulties are similar to those identified by practitioners in developed economies, eg, complexity of FV standards, impractical FV standards guidance, or concerns over earnings management. Some of our findings are also consistent with the findings of prior studies. For example, companies in the EU are unwilling to adopt FV accounting for non-financial assets because it is costly to obtain reliable FV estimates.

However, importantly, three of the impediments identified are likely to be specific to the Chinese environment:

- The high difficulty in obtaining the FV of assets and liabilities
- The lack of FV-related technical knowledge and professional judgement among accountants
- The low level of independence and competence of auditors and asset appraisers.

Aside from these impediments, we have identified a few factors that actually encouraged the implementation of FV accounting, including:

- a desire to manage earnings or market values
- the need to meet regulatory requirements
- the drive to improve the quality of accounting information
- a perception that FV more reliably reflects the value of the assets and liabilities.

THE USEFULNESS OF FV FOR INVESTORS AND COMPANIES

The financial analysts we interviewed felt that FV information was useful for investment decision making or for giving investment advice, but also felt that, because of earnings management, adjustments were needed. They also indicated that the usefulness of FV largely depends on certain factors (eg, the characteristics of companies and their industries, types of asset or liability, and whether or not the gains or losses from the change in FV are recurring). To some of the financial analysts, the adjustment was a significant burden.

The CFOs, auditors, and financial analysts surveyed agreed that FV information enhanced the quality of analysts' earnings forecasts through improving forecasting accuracy, frequency, timeliness, and specificity level. They also felt that FV accounting lifted the quality of accounting information by improving its transparency, timeliness, reliability, comparability and, in particular, its relevance.

The financial analysts deemed certain items of FV information to be useful in making investment decisions and giving investment recommendations. These included:

- FV information related to the impairment of long-term assets
- gains or losses from changes in FV of available-for-sale financial assets as one part of other comprehensive income
- gains or losses from changes in FV in the income statement
- the information on the methods, models, assumptions and parameters for estimating FV.

POLICY RECOMMENDATIONS

Based on the above findings, several recommendations were made, including the need to:

- perfect FV accounting standards
- provide more typical cases and greater operational guidance on the operation of FV accounting
- perfect factor markets
- build authoritative data platforms
- lift the quality and quantity of FV-related information disclosure
- improve relevant regulations relating to companies, asset appraisers and external auditors.

1. Introduction and literature review

BACKGROUND AND RESEARCH OBJECTIVES

Along with International Financial Reporting Standards (IFRS), fair value (FV) has been widely adopted by over 140 jurisdictions. In this climate, Chinese regulators also stipulated a new set of accounting standards in 2006 (CASs) which became effective for the preparation of the 2007 annual reports by listed companies (Ezzamel and Xiao, 2015). As they are largely based on IFRS, over 23 of these CASs require or permit FV measurement and/or disclosure. There are different forms of requirements for the use of FV across these standards: mandatory, conditionally mandatory, partially mandatory and voluntary.

Aside from analysing the adoption of FV accounting in CASs, our study has the following objectives:

- To investigate the level of implementation of FV accounting in practice where FV is required or permitted by CASs.
- To identify the difficulties or challenges that affect the level of implementation of FV accounting.
- To ascertain how useful FV information is perceived to be to companies and their investors.

This will be done by using public data disclosed by listed Chinese companies, and through interviews and questionnaire surveys.

LITERATURE REVIEW

Three strands of existing literature on FV accounting are relevant to our study. First is the extent of FV use and the determinants of firms' choice between the FV model and the cost model (eg, Quagli and Avallone, 2010; Peng and Bewley, 2010; Guthrie et al., 2011; Christensen and Nikolaev, 2013; Hodder and Hopkins, 2014). These studies find that use of FV varies across assets and industries and depends on tradeoffs of firms' specific benefits and costs. Taken together, they conclude that earnings management, managerial opportunism, contractual efficiency and information asymmetry drive the choice of FV. However, it is unclear whether these findings are applicable to emerging and transition economies such as that of China.

Then there are a few studies which focus upon FV implementation issues (eg, Laux and Leuz, 2009). Several practitioner speakers at the ICAEW's 2011 Information for Better Markets conference, eg, Harrington (2011), Harris (2011), and Wallace (2011), identified numerous FV implementation problems, including:

- the complexity of IASB's FV standards
- the need for separate standards for banks and insurance companies
- the need for separate standards for non-financial firms
- the impractical FV standards guidance
- the difficulties in maintaining consistency in valuing different and complex financial instruments
- the problem of earnings volatility created by using FV measurement
- the large amount of FV related disclosures and the high cost involved in preparing them.

However, little study has been undertaken either of these implementation problems, or of the interaction between FV and other important elements of the institutional framework (eg, litigation, market development and corporate governance) (Laux and Leuz, 2009).

The third strand of literature concerns FV and the quality of accounting information. A number of empirical studies on the usefulness of FV information have tended to focus upon the value relevance of FV information (eg, Song et al., 2010; Dong et al., 2014; Badertscher, et al., 2014).

However, this can 'provide (only indirect) evidence of the use and of the usefulness of changes in accounting regulation' (Gebhardt, 2011). In addition, none of the China-based studies have attempted to do any fieldwork in the area, nor has any China-based study examined FV disclosure. Consequently, none can satisfactorily fulfil our purposes.

Essentially, the lack of empirical studies based on the Chinese market provides us with an excellent opportunity to do further research on this topic. Furthermore, because of the controversies surrounding FV accounting and its relationship with the current financial crisis, our research can help international accounting standards setters - as well as the Chinese financial reporting constituents - to better understand FV and its implementation. Indeed, our study will contribute to the debate by adding evidence from a transition economy.

REPORT STRUCTURE

Section 2 will present the regulatory framework of FV accounting in China by identifying the adoption of FV measurement or disclosure in China's accounting standards. Section 3 will describe the research methods used. Sections 4 to 6 will present the main findings on the extent of FV usage, the factors that affect the implementation of FV accounting, and how useful FV information is perceived to be. Section 7 will summarise and discuss the main findings, and section 8 will elicit several policy implications based on the main findings.

2. *FV adoption in China's accounting standards*

On 15 February 2006, the Ministry of Finance of the People's Republic of China (MoF) issued a new set of CASs adapted from IFRS. The CASs consist of a basic standard (like a conceptual framework) and 38 specific standards that came into effect for listed companies on 1 January 2007, and for non-listed financial companies, central and local state-owned enterprises (SOEs) on 1 January 2008. Other enterprises were also encouraged to apply the CASs.

The Enterprise Accounting System, stipulated by the MoF in 2000, banned FV accounting. A major feature of CASs is that FV measurement and/or disclosure is required or permitted in over 20 standards. Importantly, there are four forms of adoption across the standards: mandatory, partially mandatory, conditionally mandatory and voluntary.

MANDATORY ADOPTION

Mandatory adoption requires a company to use FV, rather than other measurements, to measure relevant assets or liabilities. For example, CAS 11 *Share-based payment* requires an enterprise to recognise share-based payment transactions at FV, whether settled with stocks or cash. CAS 22 *Recognition and measurement of financial instruments*, meanwhile, requires financial assets or financial liabilities to be initially measured at FV.

PARTIALLY MANDATORY ADOPTION

Partially mandatory adoption means that an enterprise uses FV measurement for some transactions under particular circumstances. For instance, CAS 4 *Fixed assets* states that fixed assets should initially be recognised at historical cost. However, fixed assets should be first measured at FV if a certain payment is made for purchasing several fixed assets not priced separately. The cost of each fixed asset shall then be ascertained according to the proportion of FV of each fixed asset to the total cost of all assets acquired. Fixed assets invested shall also be measured at FV if the value stipulated in the contract or agreement is considered to be unfair.

CONDITIONALLY MANDATORY ADOPTION

Conditionally mandatory adoption indicates that relevant assets or liabilities should be measured at FV when satisfying specified conditions. For example, CAS 5 *Biological assets* stipulates that biological assets shall be measured using the cost model, unless there is well-established evidence indicating that the FV of a biological asset can be obtained reliably and continuously. According to this standard, if a biological asset is measured at FV it should satisfy both of the following conditions:

- (1) there is an active biological asset trading market; and
- (2) the market prices of identical or similar biological assets and other relevant information can be obtained continuously from the trading market.

VOLUNTARY ADOPTION

Finally, voluntary adoption allows an enterprise to optionally use FV to measure some assets or transactions. For example, CAS 3 *Investment property* stipulates that an enterprise can optionally use the FV model for subsequent measurement when there is an active property market and reliable market prices, and when other relevant information of identical or similar property can be continuously obtained. When the FV model is adopted, it also requires the disclosure of the basis and method used to determine the FV and the impact of FV changes on earnings.

STANDARDS RELATED TO FV BUT NOT INCLUDED IN THE STUDY

Two new CASs issued by the MoF after 2013 are related to the adoption of FV accounting, but are not included in our analysis. In January 2014 the MoF released CAS 39 *Fair value measurement*, which became effective on 1 July 2014 for entities adopting CASs. CAS 39 is based on IFRS 13 *Fair value measurement*, which standardises the definition of FV, clarifies the valuation techniques and FV hierarchy, and specifies the disclosures of relevant information about FV measurement.

CAS 41 *Disclosure of interests in other entities*, issued by the MoF in March 2014, stipulates that an entity that becomes an investment entity shall disclose the effect of the change of status on the financial statements for the reporting period. The information that they are required to disclose includes the total amount of FV, as of the date of change of status, of the subsidiaries that cease to be consolidated, and the total gains or losses related to the change of the total amount of FV.

In addition, the MoF also released four revised accounting standards in 2014 that are related to FV accounting: CAS 2 *Long-term equity investment*, CAS 9 *Employee benefits*, CAS 30 *Presentation of financial statements*, and CAS 37 *Presentation of financial instruments*. However, the amendments do not affect the adoption of FV in the four standards.

Table 1 charts the adoption of FV in the 38 specific standards of CASs issued in 2006, and in the standards issued after 2006. The overall adoption of FV in CASs reported in column 6 shows that 25 standards require or permit FV measurement or disclosure. Columns 2-5 indicate the nature of FV adoption in initial measurement, subsequent measurement, impairment test, and disclosure, respectively.

In summary, as CASs are largely based on IFRS, over 25 of them require or permit the use of FV for initial measurement, subsequent measurement, impairment test and disclosure by 2014. However the requirements adopt different forms, ranging from mandatory, conditionally mandatory and partially mandatory, to voluntary use of FV.

TABLE 1: ADOPTION OF FAIR VALUE ACCOUNTING IN THE CHINESE ACCOUNTING STANDARDS

	(1)	(2)	(3)	(4)	(5)	(6)
CAS number	Issue date	Initial measurement	Subsequent measurement	Impairment test	Disclosure	Overall
CAS 1. Inventories	15/02/2006	Partially mandatory		Mandatory		Yes
CAS 2. Long-term equity investments	15/02/2006 revised at 19/03/2014	Partially mandatory		Mandatory		Yes
CAS 3. Investment property	15/02/2006		Voluntary	Conditional Mandatory	Conditionally mandatory	Yes
CAS 4. Fixed assets	15/02/2006	Partially mandatory	Partially mandatory	Mandatory	Partially mandatory	Yes
CAS 5. Biological assets	15/02/2006	Partially mandatory	Conditionally mandatory	Mandatory		Yes
CAS 6. Intangible assets	15/02/2006	Partially mandatory	Partially mandatory	Mandatory		Yes
CAS 7. Exchange of non-monetary assets	15/02/2006	Conditionally mandatory			Conditionally mandatory	Yes
CAS 8. Impairment of assets	15/02/2006			Mandatory	Mandatory	Yes
CAS 9. Employee benefits	15/02/2006 revised at 30/01/2014					No

CAS 10. Enterprise annuity fund	15/02/2006	Mandatory	Mandatory		Mandatory	Yes
CAS 11. Share-based payment	15/02/2006	Mandatory	Mandatory		Mandatory	Yes
CAS 12. Debt restructuring	2006/02/15	Partially mandatory			Mandatory	Yes
CAS 13. Contingencies	15/02/2006					No
CAS 14. Revenue	15/02/2006	Partially mandatory				Yes
CAS 15. Construction contracts	15/02/2006					No
CAS 16. Government grants	15/02/2006	Partially mandatory				Yes
CAS 17. Borrowing costs	15/02/2006					No
CAS 18. Income taxes	15/02/2006					No
CAS 19. Foreign currency translation	15/02/2006					No
CAS 20. Business combinations	15/02/2006	Partially mandatory			Partially mandatory	Yes
CAS 21. Leases	15/02/2006	Partially mandatory			Partially mandatory	Yes
CAS 22. Recognition and measurement of financial instruments	15/02/2006	Mandatory	Partially mandatory	Mandatory	Partially mandatory	Yes
CAS 23. Transfer of financial assets	15/02/2006	Mandatory	Mandatory			Yes
CAS 24. Hedging	15/02/2006	Mandatory	Mandatory			Yes
CAS 25. Direct insurance contracts	15/02/2006					No
CAS 26. Reinsurance contracts	15/02/2006					No
CAS 27. Extraction of petroleum and natural gas	15/02/2006		Partially mandatory	Partially mandatory		Yes
CAS 28. Accounting policies, changes in accounting estimates and correction of errors	15/02/2006					No
CAS 29. Events after the balance sheet date	15/02/2006					No
CAS 30. Presentation of financial statements	15/02/2006 revised at 29/01/2014				Mandatory	Yes

CAS 31. Cash flow statements	15/02/2006				Mandatory	Yes
CAS 32. Interim financial reporting	15/02/2006					No
CAS 33. Consolidated financial statements	15/02/2006 revised at 20/02/2014					No
CAS 34. Earnings per share	15/02/2006					No
CAS 35. Segmental reporting	15/02/2006					No
CAS 36. Related party disclosures	15/02/2006					No
CAS 37. Presentation of financial instruments	15/02/2006 revised at 11/07/2014				Mandatory	Yes
CAS 38. First-time adoption of CAS for business enterprises	15/02/2006	Mandatory		Mandatory	Mandatory	Yes
CAS 39. Fair value measurement	29/01/2014	Mandatory	Mandatory		Mandatory	Yes
CAS 40. Joint arrangements	20/02/2014					No
CAS 41. Disclosures of interests in other entities	27/03/2014				Partially mandatory	Yes
Total (Mandatory/Partially mandatory/Conditionally mandatory/Voluntary mandatory)		18 (7/10/1/0)	11 (5/4/1/1)	10 (8/1/1/0)	16 (9/5/2/0)	25

3. Research methods

To enable methodological triangulation, we used three methods for data collection: manual collection from annual reports of listed companies, interviews and questionnaires. To understand the current situation of FV adoption and its background in China, we first hand-collected data on FV adoption and disclosures by listed companies and analysed our findings. We then designed relevant interview questions according to a literature review and the findings from the disclosure data extracted from the annual reports, and conducted interviews in China. Finally, on this basis, we designed and implemented questionnaire surveys.

MANUAL COLLECTION OF DATA

We developed two checklists for picking up data, from annual reports of listed financial companies and non-financial companies. They were pilot studied using 100 annual reports of five financial companies and 15 non-financial companies for 2007-2011. We then collected data from all 27 listed financial companies and 120 randomly selected non-financial companies during 2007-2011.

Table 2 summarises the industry distribution of sample companies. We downloaded the annual reports of all sample companies for the period of 2007-2011 from www.cninfo.com.cn, where the China Securities Regulatory Commission (CSRC) requires listed companies to publish their annual reports and other company information. From these reports, FV disclosure data were hand-picked by one PhD student in accounting and three accounting lecturers in Chinese universities.

TABLE 2: SAMPLE SUMMARY

CSRC INDUSTRY CATEGORIES	NUMBER OF SAMPLE COMPANIES	NUMBER OF COMPANIES FOR SAMPLING	PERCENTAGE OF SAMPLE COMPANIES (%)	OBSERVATIONS
Farming, forestry, animal husbandry, and fishery	1	21	4.76	5
Extraction	7	40	17.50	35
Electric power, steam and hot water generation and supply	11	61	18.03	55
Construction	1	22	4.55	5
Transportation and warehousing	8	59	13.56	40
Information technology	7	53	13.21	35
Wholesale and retail trade	7	91	7.69	35
Real estate	18	111	16.22	90
Social services	2	34	5.88	10
Media and culture services	1	13	7.69	5
Conglomerates	3	41	7.31	15
Food and beverages manufacturing	9	55	16.36	45
Textile, garment, leather, and feather manufacturing	3	38	7.89	15
Petroleum, chemical, rubber, and plastics manufacturing	6	100	6.00	30
Electronic manufacturing	3	41	7.32	15

Metallic and non-metal manufacturing	7	93	7.53	35
Machinery, equipment, and instruments manufacturing	19	158	12.03	95
Medicine and biological manufacturing	7	78	8.97	35
Financial industry	27	27	100	135
Total	147	1136	--	735

FACE-TO-FACE INTERVIEWS

We conducted 25 face-to-face interviews between March 2013 and December 2014. We interviewed:

- CFOs from 12 listed companies operating in different industries, including four manufacturing, four estate development and operations, one banking, one transport, one business services, and one retail;
- seven auditors; and
- six financial analysts (four sell-side and two buy-side).

Some interviews were recorded, while others were restricted to note-taking. Typically, an interview lasted about 1.5 hours.

QUESTIONNAIRE SURVEYS

Based on the findings from the sample annual reports, interviews, and a review of the literature, we designed three questionnaires for CFOs of companies, auditors, and financial analysts. To improve the quality of surveys, we also undertook a pilot study of the three questionnaires in China from December 2014 to January 2015. The subjects of this pilot were:

- nine top managers in listed companies (five CFOs and four directors of the finance or accounting department);
- four auditors; and
- two financial analysts.

In addition, we also consulted our technical advisor in PwC. We received and accommodated many helpful suggestions on the three questionnaires from these different sources, before implementing the formal surveys between May 2015 and December 2015.

In May 2015 auditor questionnaires were emailed to all 40 auditing firms qualified to audit listed companies in China. We received 142 responses. We also handed out hard copy questionnaires to 150 auditors when they were receiving professional training in Beijing and Xiamen, of which 59 were returned to us.

The analyst questionnaire was distributed in two ways: as a web version through www.mikecrm.com by CFA China and two securities companies (41 responses), and by email to 116 securities companies and 95 investment funds (172 responses). The list of securities companies was obtained from the Securities Association of China, and the list of investment funds came from the Asset Management Association of China.

Our initial questionnaire survey of companies included both listed and non-listed companies. We distributed hard copy questionnaires to 500 CFOs or accountants of firms when they were receiving professional training in Beijing and Xiamen. We received 146 responses from non-listed companies and 85 responses from listed companies. We focus on the latter in this report because very few non-listed firms adopted FV accounting.

In the following three sections, we first analyse the extent of de facto implementation using data from the annual reports of a sample of listed companies, and from the responses of CFOs to our questionnaire survey. We then analyse our CFO interviews and the questionnaire surveys of CFOs, auditors and financial analysts to identify the factors that encourage or impede the implementation of FV accounting. Finally, we discuss the usefulness of FV information as perceived by our financial analyst interviewees and the CFOs, auditors and financial analysts who responded to our questionnaires.

4. The extent of FV implementation in practice

ANALYSES BASED ON HAND-COLLECTED DATA

NON-FINANCIAL ASSETS AND LIABILITIES

Based on the manually collected data from the sample companies' annual reports for 2007-2011, the results reported in panel A and panel B of table 3 generally show that most listed companies complied well with mandatory or partially mandatory requirements of CASs to adopt FV measurement of assets, liabilities, or transactions. However, the quantity of FV-related disclosure was very small and quality was very low. Almost no company disclosed the FV-related information that CASs require in the footnotes, eg, what methods are used to measure FV, and how.

For example, CAS 10 *Enterprise annuity fund* mandatorily requires that, during the operation of the enterprise annuity fund, companies should FV-measure the initial acquisition values and subsequent values of financial products with good liquidity. Examples of applicable financial products include the national bonds gained within the state investment scope; the financial debentures and enterprise bonds with the credit rating at the investment grade or above; convertible bonds; investment insurance products; securities investment funds; and stocks. The companies are also required to disclose the type of investment, amounts, and methods to determine the FV.

Table 3 shows that 56 out of 600 non-financial company-year observations for 2007-2011 operated an enterprise annuity fund, involving 21 listed companies. Only four companies, however, disclosed information about the fund in the footnotes. Similarly, 66 out of 135 financial company-year observations involved enterprise annuity fund, but did not disclose any information.

CAS 11 *Share-based payment* also requires companies to mandatorily use FV for initial and subsequent measurement of the cost of employee share-based payment plans (SBPPs) (eg, stock options or restricted stocks), and to disclose information on the models (or methods), assumptions, inputs for estimating the FV of share-based payments, and amortisation of costs.

Table 3 shows that 2.83 (23.70)% of sample non-financial companies (sample financial companies) implemented SBPPs, and most of them used the valuation models (eg, Black-Scholes model) to estimate the FV of SBPPs. However, most of the non-financial companies and financial companies only disclosed the model for estimating FV.

TABLE 3: IMPLEMENTATION OF FV ACCOUNTING FOR NON-FINANCIAL ASSETS OR LIABILITIES BY FINANCIAL AND NON-FINANCIAL FIRMS

	OBSERVATIONS INVOLVED	WHETHER FV MEASUREMENT IS USED			IMPLEMENTATION BY FV HIERARCHY			
		Yes	No	Undisclosed	Level 1	Level 2	Level 3	Undisclosed
PANEL A: IMPLEMENTATION OF MANDATORY FV REQUIREMENTS FOR INITIAL MEASUREMENT								
CAS 10 Enterprise annuity fund	56[9.33] 66[48.89]	0 0	0 0	56 66	- -	- -	- -	56 66
CAS 11 Share-based payment	17[2.83] 32[23.70]	17 32	0 0	0 0	2 32	0 0	14 0	1 2
PANEL B: IMPLEMENTATION OF PARTIALLY MANDATORY FV REQUIREMENTS FOR INITIAL MEASUREMENT								
CAS 1 Inventory	29[4.83] 0[0]	14 0	12 0	3 0	0 0	0 0	8 0	6 0
CAS 2 Long-term equity investments	11[1.83] 2[1.48]	5 2	4 0	2 2	0 0	0 0	5 0	0 2

CAS 20 Business combinations	79[13.17] 20[14.93]	59 14	19 6	1 0	0 1	0 0	49 5	10 8
CAS 4 Fixed assets	42[7.00] 18[3.33]	28 12	14 6	0 0	0 0	0 0	24 4	4 8
CAS 6 Intangible assets	34[5.67] 11[8.15]	23 9	7 2	4 0	0 0	0 0	23 5	4 4
CAS 12 Debt restructurings	99[16.5] 7[5.19]	9 2	29 0	61 5	1 1	0 0	6 1	2 0
CAS 21 Leases	21[3.50] 0[0]	2 0	4 0	15 0	0 0	0 0	0 0	2 0
PANEL C: IMPLEMENTATION OF CONDITIONALLY MANDATORY FV REQUIREMENTS FOR INITIAL MEASUREMENT								
CAS 5 Biological assets	7[1.17] 0[0]	0 0	7 0	0 0	0 0	0 0	0 0	0 0
CAS 7 Exchange of non-monetary assets	14[2.33] 1[0.74]	7 0	1 1	6 0	0 0	0 0	3 0	4 0
PANEL D: IMPLEMENTATION OF VOLUNTARY FV REQUIREMENTS FOR SUBSEQUENT MEASUREMENT								
CAS 3 Investment property	316[52.67] 77[57.04]	8 23	308 54	0 0	0 0	0 5	4 18	4 0

The italicised numbers are for financial firms and the numbers not italicised are for non-financial firms. The numbers in square brackets are the percentages based on 600 non-financial company-year observations, or 135 financial company-year observations.

Few companies had the assets, liabilities, or transactions to which conditionally mandatory use of FV is applicable, and if they had them, they did not prefer the adoption of FV. For example, *CAS 7 Exchange of non-monetary assets* states that where a non-monetary asset transaction satisfies both of the following two conditions, the FV of the assets and relevant payable taxes shall be regarded as the transaction cost if:

- (1) the transaction is commercial in nature; and
- (2) the FV of the assets received or transferred can be measured reliably.

However, table 3 shows that only 14 out of 600 non-financial company-year observations for 2007-2011 engaged in the transaction. Among these, seven used FV to initially measure relevant assets, one did not use FV, and the other six did not disclose any information. Three of the seven used the evaluated price provided by asset appraisers, but the other four did not disclose such information. Similarly, seven out of the 600 non-financial company-year observations (involving two companies) held biological assets. Although *CAS 5 Biological assets* requires enterprises to conditionally and mandatorily use FV for subsequent measurement, the two companies did not use the FV model.

Interestingly, most listed companies were not willing to adopt the FV model for subsequent measurement of investment property. They can, however, optionally use it when there is an active property market and reliable market prices, and when other relevant information of identical or similar property can be continuously obtained. Table 3 shows that 316 of 600 non-financial company-year observations had investment property involving 73 sample companies, but only two companies (eight observations) chose the FV model for subsequent measurement. Compared with non-financial companies, more financial companies chose the FV model: five out of 17 financial companies with investment property used the FV model for subsequent measurement.

Additionally, the FV is required by CASs for impairment tests of long-term assets. In practice, companies were more likely to recognise impairment losses of tangible assets (eg, fixed assets) than long-term equity investment, intangible assets, and goodwill. For example, untabulated results show that 135 out of 600 non-financial company-year observations recognised impairment losses of fixed assets, while only 24 (21) recognised impairment losses of intangible assets (goodwill). Meanwhile, 19 out of 135 financial company-year observations recognised impairment losses of fixed assets, while only four recognised impairment losses of intangible assets. Moreover, the quality of information disclosure on impairment tests was poor.

FINANCIAL ASSETS OR LIABILITIES

There was greater implementation of FV for this category. CAS 22 Recognition and measurement of financial instruments mandatorily requires that companies measure all financial assets and liabilities at FV in the initial recognition. With the exception of investments held to maturity, the FV model should be used for subsequent measurement of other financial assets and liabilities. However, few non-financial companies held such financial assets or liabilities, especially those which were derivative.

Table 4 shows that trading financial assets and available-for-sale financial assets were the two financial assets held by a high proportion of non-financial companies. Among the 600 non-financial company-year observations, 163 sample observations held trading financial assets, and 202 held available-for-sale financial assets.

Most sample companies used quoted prices of identical assets or liabilities in the active market or evaluated prices from asset appraisers as the FV of financial assets or liabilities. These companies also disclosed more detailed FV information related to financial assets or liabilities, compared with non-financial assets or liabilities. Additionally, the gains or losses from changes in FV on financial assets or liabilities had a small impact on the operating performance for most non-financial companies.

TABLE 4: IMPLEMENTATION OF FV ACCOUNTING FOR FINANCIAL ASSETS OR LIABILITIES BY FINANCIAL AND NON-FINANCIAL COMPANIES

	OBSERVATIONS INVOLVING MANDATORY FV REQUIREMENTS	COMPANIES INVOLVED	WHETHER FV MEASUREMENT WAS USED			IMPLEMENTATION BY FV HIERARCHY			
			Yes	No	Undisclosed	Level 1	Level 2	Level 3	Undisclosed
Trading financial assets	163[27.50] 131[97.04]	54 27	153 131	0 0	10 0	153 120	0 42	0 123	10 0
Trading financial liabilities	27[4.50] 57[42.22]	11 15	22 57	0 0	5 0	17 43	0 14	5 47	5 0
Available-for-sale financial assets	202[33.67] 127[94.07]	54 26	189 127	2 0	11 0	184 115	0 39	5 115	11 0
Held-to-maturity investments	11[1.83] 68[50.37]	10 19	0 21	6 0	5 47	0 0	0 0	0 0	5 21
Derivative financial assets	26[4.33] 89[65.93]	9 22	22 89	0 0	4 0	18 54	0 26	4 73	4 0
Derivative financial liabilities	5[0.83] 83[61.48]	3 19	4 83	0 0	11 0	2 52	0 26	2 73	11 0
Financial assets purchased for resale	0[00] 108[80]	0 25	-	-	-	-	-	-	-
Financial assets sold for repurchase	3[0.50] 114[84.44]	1 25	-	-	-	-	-	-	-
Hedging	10[1.67] 5[3.70]	4 3	9 4	0 0	1 1	9 4	0 0	0 0	1 1

The numbers in italics are for financial firms, the numbers not in italics are for non-financial firms and the numbers in square brackets are the percentages based on 600 non-financial company-year observations or 135 financial company-year observations.

In terms of industry difference, financial companies held significantly more financial assets or liabilities than non-financial companies. Indeed, table 4 shows that all financial companies held trading financial assets, and only one did not have available-for-sale financial assets. Meanwhile, they largely depended on quoted prices of identical assets or liabilities in active markets, and evaluated prices from asset appraisers, to measure the FV of financial assets or liabilities. For example, as the input of FV on different trading financial assets, 120 observations used the quoted price of identical assets in active markets, 42 observations used the quoted prices of similar assets in active markets, and 123 observations used the evaluated prices estimated by asset appraisers.

Compared with non-financial companies, financial companies felt a larger impact from the gains or losses from changes in FV of financial assets or liabilities. For example, the average (median) gains from investment in financial instruments divided by current net profit is 52.13% (23.87%) for financial companies, but only 23.94% (1.83%) for non-financial companies. Meanwhile, the large difference between the average and the median indicates that the impact of gains or losses from investment in financial instruments on operating performance is significantly different among the sample companies.

ANALYSES BASED ON QUESTIONNAIRE SURVEYS OF LISTED COMPANIES

NON-FINANCIAL ASSETS OR LIABILITIES

We used questionnaires to survey the adoption of FV accounting for asset impairment, investment property, merges and acquisitions (M&A), and executive share-based payment plans in 85 listed companies. Panel A of table 5 shows that nearly half of the companies recognised an impairment loss on fixed assets in the past three accounting years, but the companies were less likely to recognise any impairment loss on intangible assets and goodwill. This is consistent with the findings based on hand-collected data. Compared with intangible assets and goodwill, obtaining and measuring the FV of fixed assets is easier, which may increase the likelihood of recognising an impairment loss on fixed assets. Indeed, the findings based on our CFO interviews (section 5) further support this conjecture.

Panel B shows that about 65% of companies had no investment property, while among the remaining 29 (35%) companies with investment property, ten used the FV model for subsequent measurement and 19 used the cost model. This indicates that more companies preferred the cost model for subsequent measurement of investment property, which is consistent with the results based on the hand-collected data from the annual reports.

Panel C suggests that over 75% of companies experienced business combinations not under common control, and most of them used the valuation outcomes provided by asset appraisers to identify the FV of related assets and liabilities in the process of business combinations. However, over 20% of the companies directly used the carrying values of related assets and liabilities to measure their FV. These results are similar to the findings obtained from the annual reports: of the 79 non-financial company-year observations involving business combinations not under common control, about 75% used FV to identify related assets and liabilities involved, while around 25% used their carrying values.

Finally, panel D indicates that about 32.94% of the companies implemented SBPPs, including stock options, restricted stocks, and share appreciation rights. These companies largely depended on the external asset appraisers to estimate the FV of these equity instruments: over 85% of the companies with SBPPs used the appraisal results from the external asset appraisers. About 55% of the companies with SBPPs used the Black-Scholes model to estimate the FV of these equity instruments, and few companies used Binomial Tree. In addition, 31% directly used the closing stock price (or the difference between the closing stock price and the granting price) at the granting date as the FV of these equity instruments. These methods were used because it is easy to do so.

TABLE 5: THE IMPLEMENTATION OF FV ACCOUNTING FOR NON-FINANCIAL ASSETS OR LIABILITIES (RESULTS BASED ON QUESTIONNAIRE SURVEYS)

		N	Frequency (%)
PANEL A: ASSET IMPAIRMENT			
Impairment of fixed assets	Yes	38	46.91
	No	43	53.09
Impairment of intangible assets	Yes	18	22.78
	No	61	77.22
Impairment of goodwill	Yes	20	30.30
	No	46	69.70
PANEL B: INVESTMENT PROPERTY			
Did the company have investment property?	Yes	29	35.37
	No	53	64.63
Measurement model for investment property	The FV model	10	34.48
	The cost model	19	65.52
PANEL C: MERGERS AND ACQUISITIONS			
Did the company experience business combinations not under common control?	Yes	64	75.29
	No	21	24.71
How to identify the FV of related assets or liabilities	Use the carrying values	13	20.97
	Use the valuation outcomes	46	74.19
	Other	3	4.84
PANEL D: EXECUTIVE SHARE-BASED PAYMENT PLANS (SBPPs)			
Did the company implement SBPPs?	Stock options	20	23.53
	Restricted stocks	15	17.64
	Share appreciation rights	4	4.71
	No SBPPs	57	67.06
Who estimated the FV of equity instruments?	External asset appraisers	24	85.71
	Accountants	3	10.71
	Other	1	3.57
Method used to estimate the FV of equity instruments	Black-Scholes model	16	55.17
	Binomial tree	4	13.79
	The closing stock price	9	31.04

FINANCIAL ASSETS OR LIABILITIES

Table 6 reports the adoption of FV accounting for financial assets or liabilities based on the questionnaire surveys. It shows that, compared to non-financial assets or liabilities, the sample companies had less financial assets or liabilities.

The results also illustrate that trading financial assets and available-for-sale financial assets were the two main financial assets for the sample companies. Specifically, 32.94% of companies had available-for-sale financial assets, and 18.82% had trading financial assets; equity instruments made up most of the available-for-sale financial assets and trading financial assets.

Most of the companies used FV, particularly Level 1 FV, to measure financial assets or liabilities. The main reason for this may be that obtaining the FV of these financial assets or liabilities from identical and similar assets and liabilities on the markets is easier than for non-financial assets or liabilities. The findings reported in section 5 on the difficulties of implementing FV accounting provide further support for this.

TABLE 6: THE IMPLEMENTATION OF FV ACCOUNTING FOR FINANCIAL ASSETS OR LIABILITIES (RESULTS BASED ON QUESTIONNAIRE SURVEYS)

	DID THE COMPANY HAVE THIS ASSET OR LIABILITY?		DID THE COMPANY USE FV?		IMPLEMENTATION BY FV HIERARCHY		
	YES	NO	YES	NO	Level 1	Level 2	Level 3
Trading financial assets	16 (18.82)	69 (81.18)	15 (93.75)	1 (6.25)			
Including: bonds	10 (11.76)	75 (88.24)	8 (80.00)	2 (20.00)	5 (62.50)	1 (12.50)	2 (25.00)
Funds	8 (9.41)	77 (90.59)	8 (100.00)	0 (0.00)	6 (75.00)	1 (12.50)	1 (12.50)
Equity instruments	14 (16.47)	71 (83.53)	14 (93.33)	1 (6.67)	11 (78.57)	2 (14.29)	1 (7.14)
Derivative financial assets	12 (14.12)	73 (85.88)	11 (91.67)	1 (8.33)	9 (81.82)	0 (0.00)	2 (18.18)
Available-for-sale financial assets	28 (32.94)	57 (67.06)	20 (71.43)	8 (28.57)			
Including: bonds	6 (7.06)	79 (92.94)	6 (100.00)	0 (0.00)	5 (83.33)	0 (0.00)	1 (16.67)
Funds	6 (7.06)	79 (92.94)	5 (83.33)	1 (16.67)	1 (20.00)	3 (60.00)	1 (20.00)
Equity instruments	27 (31.76)	58 (68.24)	19 (70.37)	8 (29.63)	16 (84.21)	0 (0.00)	3 (15.79)
Held-to-maturity investments	13 (15.29)	72 (84.71)	7 (53.85)	6 (46.15)	4 (57.14)	1 (14.29)	2 (28.57)
Trading financial liabilities	12 (14.12)	73 (85.88)	11 (91.67)	1 (8.33)	7 (63.64)	3 (27.27)	1 (9.09)
Derivative financial liabilities	10 (11.76)	75 (88.24)	10 (100.00)	0 (0.00)	7 (70.00)	0 (0.00)	3 (30.00)
Hedging	8 (9.41)	77 (90.59)	7 (87.50)	1 (12.50)	6 (85.71)	0 (0.00)	1 (14.29)

Numbers in brackets illustrate frequency.

5. Factors affecting the implementation of FV accounting

In this section, we use interviews with CFOs and questionnaire surveys of CFOs, auditors, and financial analysts to investigate the factors that affect companies' implementation of FV accounting.

EVIDENCE FROM CFO INTERVIEWS

THE DIFFICULTY IN OBTAINING FV INFORMATION

A crucial condition for applying FV is the existence of efficient asset pricing markets (Zeff, 2007). China started marketisation in the 1980s and had achieved a 73% degree of marketization by 2003 (Institute for Economic and Resource Management Research, 2005). Markets were less developed and inactive for many assets or liabilities, and this was considered to be a major barrier to FV implementation.

When talking about the adoption of FV for testing the impairment of intangible assets, interviewee A said: 'We would test the impairment of intangible assets based on the actual situation, but it is very difficult to find their FV. For example, because every company has its own business model and these models are considerably different across companies, and thus their patents (as intangible assets) are incomparable. Actually, we don't know how to test their impairment, therefore, we generally consider there is no impairment in practice.'

Similarly, interviewee D also expressed frustration at the difficulty in obtaining the FV of her company's fixed assets.

However, the difficulty in obtaining Level 1 FV of financial assets or liabilities was relatively low because there were active markets. Interviewee F stated, 'The categories and portfolios of the derivative financial instruments (such as forward exchange, held-to-maturity financial products company have invested) are currently simple in China. As a result, it is relatively easy to obtain their market prices.'

THE LACK OF FV-RELATED TECHNICAL KNOWLEDGE

A crucial condition for attaining high-quality accounting information is the existence of a solid accounting infrastructure, including preparer readiness and high-quality auditing (FASC, 1999, 2000). Indeed, Chinese preparers, auditors and users of financial reports might not be fully ready to adopt IFRS, and its FV-related standards especially, given that higher education in accounting was suspended during the Cultural Revolution and there was no accounting profession between 1950s and 1980s (Tang, 2000; Chen et al., 2001; Xiao et al., 2004).

Interviewee L considered that the main difficulty surrounding FV adoption in China was that accountants in his company lacked the relevant technical knowledge. Interviewees B and D also revealed that it was very difficult for their accountants to estimate FV due to limited technical knowledge, and thus they needed the help of relevant technical professionals.

As a result, companies largely depended on external asset appraisers. When talking about the FV valuation of acquisitions, interviewee L said, 'We directly accepted the results provided by asset appraisers because we are not professionals ... There were negotiations and discussions in the process of the acquisition, but we almost always obeyed asset appraisers.'

Meanwhile interviewee E, from a company with investment property, stated, 'Based on the appraisal price from the asset appraisers, we may adjust the price according to some factors that affect the price of investment property, but just a little bit because the asset appraisers are authoritative professionals that accountants could not challenge.'

Interviewee E argued, 'Overall, we think the evaluated price is reliable because asset appraisers are professionals. They have industrial valuation standards and perfect methods for the process of valuation although they do have assumptions and estimates. More importantly, the asset appraiser we have employed is the biggest one in the asset appraisal industry. There are rumours that they collude with their clients to manipulate the evaluated prices but, considering their reputation, this is unlikely.'

Of course, managers typically negotiate with the asset appraisers to adjust the appraisal prices for their benefits. Interviewee A argued, 'It is necessary to negotiate about models and processes of FV estimation between trading parties and asset appraisers during the period of acquisition. Apart from national laws or rules, we discuss all other issues to maximise our benefits, such as the options to choose an investment property as a reference.' Interviewee D said, 'We discuss with asset appraisers about the results of valuation, but we have not interfered into the process of valuation because they are professionals.'

THE NEED FOR SIGNIFICANTLY MORE PROFESSIONAL JUDGMENT

FV embedded in principles-based IFRS requires more professional judgment and this is not consistent with the tradition of the rules-based uniform accounting systems in China (Xiao et al., 2004). Consequently, this presented a huge challenge to accountants implementing FV accounting. Indeed, the interviewees indicated that accountants desire more detailed rules and guidance on the application of FV.

Interviewee E, for example, said, 'Concerning the accounting treatment of FV, the CAS only stipulates principled terms rather than detailed rules, which leads to many problems in practice. We are almost confused.' Interviewee I also requested that regulators issue more detailed rules to solve their puzzles in the adoption of the FV model for re-measuring investment property.

THE HIGH COST AND COMPLEXITY OF MEASURING FV

The high cost and complexity of measuring FV largely reduces the incentives for companies to implement FV accounting, particularly when they can optionally use FV measurement. For example, interviewee L - from a company where the ratio of investment property to total assets is only 0.1% - said:

'The reason we use the cost model is largely that it is simple and less costly. If using the FV model, we have to employ the asset appraisers to estimate the FV, which would generate high expenses.'

Note that the high cost of measuring FV is closely linked to the first two factors. This is because the high difficulty in obtaining the FV of assets or liabilities and the lack of FV-related technological knowledge increases the reliance on external asset appraisers.

RELIABLE VALUATION OR EARNINGS MANIPULATION?

We conducted interviews in four companies that used the FV model to measure investment property, and all interviewees unanimously argued that their main motivation had been to report the real value of investment property. For example, interviewee K said, 'The main reason for our decision to adopt the FV model to re-measure investment property is to reflect its real value, rather than to manipulate earnings through the FV model like what market (participants) think.'

By contrast, however, interviewee J argued that the cost model could reliably reflect the real value: 'The city where my company operates is the largest fabric market in Asia, where hundreds of manufacturers and traders are based and they rent property ... As these tenants historically made enormous contributions to the prosperity of the market, they thus remained an important determinant of the rental prices, and had the rights of renewal and each renewal lasted six years. This was the reason why the likelihood was low for our company to change the tenants and increase the rental rates. As a result, the rates were far lower than the market price. Therefore, the FV model could not reflect the real value of investment property.'

Indeed, some interviewees considered earnings management to be the main motivation for companies to adopt the FV model. Interviewee G, from a company adopting the cost model, argued, 'At the end of 2008, the results from an investigation by the MoF showed that few companies adopted the FV model. I do not know what the exact number was, but I think the main purpose for companies to choose the FV model is to increase their profits.' He added, 'Honestly, the current methods for estimating FV, such as the market approach and income approach, are unreliable.'

Auditor C described how one client company used the FV model to manipulate earnings for financing purposes: 'Recently, I have audited a client company that first used the cost model to measure investment property and then switched it to the FV model when it prepared to issue bonds. Due to gains from the change in FV on investment property over the past years, its net profits have significantly increased by over ten times from about ten million even though its investment property locates in remote places. As the sources and methods for estimating the FV of investment property are extremely unreasonable, apparently, the company used FV to manage earnings.'

THE IMPORTANCE OF THE FAIR VALUED-ASSETS AND LIABILITIES

When the ratio of investment property to total assets was very low, companies had weak incentives to adopt the FV model due to the cost of accounting measurement. However, with a high ratio, companies' incentives may increase considerably. Indeed, interviewee E said, 'we hesitated over whether we should switch to the FV model from the cost model or not in 2007 and 2008, but we did not change because of the volatility of markets at that time. Nevertheless, we eventually adopt the FV model as a result of the rapid development of investment property in our company.' Interviewee K also stated, 'As investment property increases in our company, we would re-consider whether to adopt the FV model although we prefer the cost model at present due to the volatility of market price.'

THE IMPACT OF FV ON THE VOLATILITY OF OPERATING PERFORMANCE

Prior empirical studies confirm that FV accounting is significantly related to high levels of earnings volatility (Barth et al., 1995; Hodder et al., 2006). This may reduce the incentives for companies to use FV when they prefer stable earnings. Interviewee G revealed:

'The main reason for our company to adopt the cost model is the consideration of prudence. Currently, the real estate markets are booming, but the sudden changes of the markets due to regulations one day may cause tremendous impacts on accounting earnings and the volatility of earnings. The imperfect markets in China may lead to important effects on the volatility of operating performance if adopting the FV model. We will keep using the cost model in the future unless the markets of investment property in China become considerably more mature and perfect.'

EVIDENCE FROM THE QUESTIONNAIRE SURVEYS

In this section we further investigate the factors that affect the implementation of FV accounting. First, we investigate how auditors felt about FV adoption, and its impacts, in order to corroborate the reasons our CFOs gave as to why companies adopt FV. Next, we identify the difficulties in implementing FV accounting based on the responses from CFOs, auditors, and financial analysts.

HOW AUDITORS PERCEIVE FV ADOPTION

Using the questionnaire survey, we first asked auditors about their clients' attitude towards the adoption of FV accounting. Panel A of table 7 shows that 43.88% of auditors perceived a negative attitude among most of their clients towards FV adoption, while 43.37% were neutral and only 12.76% were positive. This is consistent with earlier findings from our hand-collected data and interviews, which revealed that companies did not prefer the FV model (eg, for investment property). When we further investigated the reasons using auditors' responses on a scale of 1 (not at all influential) to 5 (extremely influential), panel B shows that the auditors thought that earnings management and meeting the requirements of regulators were the two main reasons for the positive attitude of their clients towards FV adoption. These were followed by market value management and a desire to improve the quality of accounting information.

Interestingly, this is contrary to what we found when we interviewed CFOs, who argued that companies were more likely to adopt FV (eg, for re-measuring investment property) in order to reliably reflect the real value of related assets (ie, to improve the quality of accounting information) rather than to manage earnings. However, as auditors are independent third parties, the results based on their perceptions may be more reliable. Indeed, it is less likely that CFOs would admit that earnings management motivated their adoption of FV accounting.

Based on the same scale, panel C in table 7 indicates that the responding auditors considered the high complexity of estimating FV to be the most important reason for their clients' negative attitude towards FV adoption. The second most important reason was the incompetence of the clients' accountants. Consistent with the results based on CFOs' interviews, the auditors perceived two other factors to be responsible for their clients' negative attitude towards FV: the increased volatility of earnings due to FV use, and the high cost of estimating FV.

TABLE 7: AUDITORS' PERCEPTIONS OF THEIR CLIENTS' ATTITUDE TOWARDS FV ADOPTION

PANEL A: ATTITUDE OF MOST CLIENTS TOWARDS FV ADOPTION		
	N	Frequency (%)
Positive	25	12.76
Negative	86	43.88
Neutral	85	43.37
Total	196	100.00
PANEL B: REASONS FOR THEIR CLIENTS' POSITIVE ATTITUDE TOWARDS FV ADOPTION		
	N	Mean
To manage earnings	23	3.70
To meet the requirements of regulators	23	3.70
To manage market value	22	3.59
To improve the quality of accounting information	24	3.42
PANEL C: REASONS FOR THEIR CLIENTS' NEGATIVE ATTITUDE TOWARDS FV ADOPTION		
	N	Mean
High complexity of estimating FV	83	4.22
The client's accountants are incompetent	78	4.06
Increasing volatility of earnings due to FV use	74	3.96
High cost of estimating FV	76	3.79
The client is forced to adopt FV by external forces (e.g. regulators)	71	3.75
Tax planning considerations	72	3.19

Respondents were asked to evaluate the attitude among their clients towards FV adoption, and to indicate the level of each factor on a scale of 1 (not at all influential), 2 (slightly influential), 3 (moderately influential), 4 (very influential), and 5 (extremely influential).

DIFFICULTIES IN IMPLEMENTING FV ACCOUNTING

Finally, we investigated the difficulties in implementing FV by surveying CFOs, auditors and financial analysts. Columns 2, 4, and 6 in table 8 reveal the averages of their opinion on the main barriers encountered in FV adoption based on a scale of 1 (strongly disagree) to 5 (strongly agree). The CFOs, auditors, and financial analysts consistently indicated that the leading challenge to FV implementation was the difficulty in obtaining the required FV in a less developed and less active market, with the averages being 3.90, 4.21, and 4.06.

The second barrier was imperfect accounting standards and insufficient guidance on the application of FV in the present accounting standards. Here, the averages were recorded as 3.69 for CFOs, 3.83 for auditors, and 3.80 for financial analysts. This is followed by the high complexity of measuring and disclosing FV, with the averages recorded as 3.71 for CFOs, 3.93 for auditors, and 3.69 for financial analysts.

These results resonated with our findings from the interviews reported above, suggesting that in China the most serious impediments in FV implementation are the less developed and inactive markets; the tradition of rules-based uniform accounting systems; and the complexity of FV measurement. CFOs, auditors and financial analysts, meanwhile, revealed some additional challenges: imperfect supporting systems and facilities; the high additional cost of measuring and disclosing FV; and the lack of FV-related technical knowledge among accountants.

TABLE 8: PERCEIVED BARRIERS TO THE IMPLEMENTATION OF FV

	CFOS		AUDITORS		FINANCIAL ANALYSTS	
	(1)	(2)	(3)	(4)	(5)	(6)
	N	Mean	N	Mean	N	Mean
Difficult to obtain FV in a less developed and less active market	77	3.90	193	4.21	208	4.06
Imperfect accounting standards and insufficient guidance on the application of FV	77	3.69	183	3.83	189	3.80
High complexity of measuring and disclosing FV	77	3.71	191	3.93	208	3.69
Imperfect supporting systems and facilities	77	3.32	175	3.65	207	3.70
High additional cost of measuring and disclosing FV	77	3.55	184	3.76	207	3.45
Lack of FV-related technical knowledge among accountants	77	3.25	180	3.85	207	3.37
Low independence of external auditors	77	2.91	178	2.60	208	3.53
Low professional competence of external auditors	77	2.82	181	2.85	207	2.99
Low independence of external asset appraisers	77	2.97	182	3.09	208	3.63
Low professional competence of external asset appraisers	77	2.92	181	3.09	206	3.15

Respondents indicated the level of agreement with the above statements on a scale of 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Interestingly, CFOs, auditors, and financial analysts held different opinions on the effect of independence and professional competence of external auditors and asset appraisers on FV implementation. In particular, CFOs did not consider the low level of independence and the low level of professional competence of external auditors and asset appraisers to be significant barriers to FV application in China. The results reported in column 2 of table 8 show that the averages of the low level of independence and the low level of professional competence were 2.91 and 2.82 for external auditors, and 2.97 and 2.92 for external asset appraisers.

Auditors, perhaps unsurprisingly, did not consider the low level of independence and the low level of professional competence of auditors to be major impediments to FV implementation, and were indifferent regarding the independence and the professional competence of external asset appraisers. Column 4 of table 8 indicates that the averages for the low level of independence and the low level of professional competence were only 2.60 and 2.85 for external auditors and 3.09 and 3.09 for external asset appraisers. In contrast, column 6 of table 8 suggests that according to financial analysts, the low level of independence of external third parties - including auditors and asset appraisers and the low competence of asset appraisers - were major impediments to FV accounting implementation, although the professional competence of external auditors was not.

As different groups responded to these issues from their own standpoint, it is understandable that their responses varied. From an investor protection perspective, however, the views of financial analysts seem most reliable. Auditors and CFOs are the providers of FV information, while financial analysts are the users of FV information. If auditors and CFOs considered the independence and professional competence of external auditors and external asset appraisers to be low - and thus a barrier to FV accounting implementation - this would mean that they admitted that external auditors and asset appraisers could not provide sufficient assurance of the reliability of FV information. Essentially, it would be self-denying. In contrast, financial analysts may have a deep understanding of the level of independence and competence of auditors and asset appraisers in the process of using FV information.

6. The usefulness of FV information for investors and companies

Below we analyse the usefulness of FV information as perceived by our interviewees and questionnaire respondents, and also attempt to identify what specific FV information was deemed useful.

INTERVIEW EVIDENCE FROM FINANCIAL ANALYSTS

Since financial analysts are primary users of accounting information, we first examine what they perceived to be the usefulness of FV information for making investment decisions or giving investment advice.

Generally, financial analysts believed that FV information was useful in making investment decisions or giving investment advice, but they felt it necessary to make adjustments to the information because managers could make use of the considerable discretions in FV measurement and disclosure (especially in relation to Level 3 FV) and thus might engage in earnings management.

For example, sell-side analyst C said, 'I think that FV adoption in financial statement is good. It does not increase the difficulty of investment decisions for us. If FV accounting is implemented appropriately, it enriches accounting information. However, if FV accounting is overused and even abused, it would become a burden for us. When managers can freely choose to use FV or not, it would be largely dependent on their intention.'

Sell-side analyst E argued, 'In most cases, we treat the adoption of FV as a disturbance term. While I could not conclude that all companies use FV for accounting fraud, FV adoption disturbs our analysis and judgment at least. For example, why do we discount the predicted earnings of FS, a listed company which uses the FV model to measure investment property? While it conservatively uses FV measurement, the adoption of the FV model for re-measuring investment property causes major difficulties for us in predicting its operating performance because its use of FV does not have a consistent principle we can follow, and has excessive discretions, which may hide some operating problems when we try to understand its real operating conditions through financial statements.'

This indicates that while FV adoption was considered useful for Chinese investors, it could to some extent also become a burden because of the need for adjustments. Indeed, when asked whether they adjusted the FV data provided by companies, four out of six analysts indicated that they definitely did, particularly when the FV was estimated through models. Sell-side analyst E remarked, 'Taking the adoption of FV in mergers and acquisitions (M&As) as an example, we would re-evaluate according to our analyses, and discount the price (provided by companies) if we think it is high. Normally, we would judge the price of M&As through valuing the acquired company by ourselves.'

Furthermore, as the impact of FV adoption on investment decisions or advice by financial analysts may be largely related to the effect of gains or losses from changes in FV on current earnings, we asked financial analysts their opinion on the usefulness of these gains or losses. The financial analysts contended that this information was useful for them to make investment decisions or give investment recommendations, but the level of usefulness would depend on several conditions. These included the characteristics of companies and their industries, particular types of assets or liabilities, and whether the gains or losses from the change in FV were recurring or non-recurring. For example, sell-side analyst D pointed out, 'When analysing the gains or losses from changes in FV, we first need to discuss whether it is recurring or not, and then further distinguish companies and their industries. We may delete the non-recurring gains or losses from the change in FV.'

THE IMPACT OF FV ADOPTION: QUESTIONNAIRE SURVEY RESULTS

In order to gain a deeper understanding of the usefulness of FV information, this subsection further analyses the perceived impact of FV adoption on financial analysts' earnings forecasts, on the quality of accounting information and on the decisions of company managers. To do so, it uses questionnaire surveys of CFOs, auditors, and financial analysts.

Panel A in table 9 first reports the impact of FV adoption on analyst forecasts perceived by financial analysts, auditors, and listed company CFOs. It is based on a scale of -2 (extremely negative influence), -1 (negative influence), 0 (no influence), 1 (positive influence), and 2 (extremely positive influence). Columns 2 and 3 show that the average accuracy, frequency, timeliness, and specificity level of analysts' earnings forecasts were 0.68, 0.29, 0.45, and 0.71 respectively, and so were significantly larger than 0 at the 1% level.

This indicates that the financial analysts perceived FV information to have a significant and positive effect on the quality of analysts' earnings forecasts. Specifically, it improved their accuracy, frequency, timeliness, and specificity level. This is consistent with the results obtained from our financial analyst interviews (see section 6).

Similarly, columns 5 and 8 show that the mean accuracy of analysts' earnings forecasts were 0.51 and 0.59 – significantly different from 0 at the level of 1%. This suggests that our sample auditors and CFOs also believed that FV information could significantly improve the accuracy of analysts' earnings forecasts.

Panel B in table 9 reports the responses from financial analysts, auditors, and CFOs when asked about the impact of FV on the quality of accounting information. Columns 2 and 3 show the response of financial analysts: the average perceived effect of FV accounting on the total quality of accounting information was 1.1, suggesting that FV adoption had a significant and positive effect on the quality of accounting information. Specifically, the average ratings for transparency, relevance, timeliness, reliability, comparability, and conservatism were 1.12, 0.87, 0.69, 0.99, 0.87, and 0.62 respectively – all significantly above 0 at the level of 1%. Moreover, consistent with the financial analysts' perceptions, auditors and CFOs also believed that FV adoption had a significant and positive influence on the total quality of accounting information and also significantly improved the transparency, relevance, timeliness, reliability, and comparability of accounting information.

Meanwhile, CFOs considered that the impact of FV adoption on conservatism of accounting information was positive, though only marginally significant, while auditors perceived that the impact was insignificant. The perceptions of our responding CFOs further support the existing empirical evidence. For example, Badia et al. (2016) confirm that companies recurring recognised FVs of financial instruments measured using levels 2 and 3 inputs exhibit higher conditional conservatism. They argue that this is because companies have incentives to exercise whatever discretion they have over recurring FV measurements in order to attain the well-documented contracting and other benefits of conditional conservatism.

Finally, as columns 2 and 3 in panel C of table 9 show, our responding financial analysts' felt that the mean effect of FV adoption on internal decision-making, accuracy of the company's earnings forecasts, incentive effect of the companies' executive compensation contracts, and the monitoring role of the company's debt contracts were 0.90, 0.83, 0.70, and 0.77 respectively. These averages are all significantly larger than 0 at the 1% level. The responding auditors and company CFOs had similar perceptions as shown in columns 5, 6, 8, and 9.

In general, these results indicate that respondents felt that FV information improved the efficiency of the company's internal decision-making, increased the accuracy of the company's earnings forecasts, strengthened the incentive effect of the company's executive compensation contracts, and enhanced the monitoring role of the company's debt contracts.

TABLE 9: PERCEIVED IMPACT OF FV ADOPTION

	ANALYSTS' PERCEPTIONS			AUDITORS' PERCEPTIONS			CFO PERCEPTIONS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	N	Mean	T test	N	Mean	T test	N	Mean	T test
PANEL A: THE IMPACT ON ANALYSTS' FORECASTS									
Accuracy of forecasts	192	0.68	8.02***	169	0.51	5.75***	75	0.59	4.49***
Frequency of forecasts	192	0.29	4.63***						
Timeliness of forecasts	190	0.45	6.98***						
Specificity level of forecasts	191	0.71	10.13***						
PANEL B: THE IMPACT ON THE QUALITY OF ACCOUNTING INFORMATION									
Total quality of accounting information	191	1.10	17.15***	174	0.48	5.84***	75	0.85	7.23***
Transparency	192	1.12	17.27***	174	0.56	7.19***	76	0.72	5.49***
Relevance	191	0.87	13.91***	171	0.65	9.60***	75	0.69	7.03***
Timeliness	191	0.69	10.13***	171	0.47	6.37***	75	0.33	2.76***
Reliability	192	0.99	12.66***	172	0.24	2.62***	75	0.63	4.46***
Comparability	191	0.87	11.15***	171	0.42	4.78***	75	0.47	3.82***
Conservatism	191	0.62	7.58***	172	-0.04	-0.45	75	0.23	1.67*
PANEL C: THE IMPACT ON COMPANIES									
Efficiency of internal decision-making	190	0.90	14.46***	170	0.67	9.29***	75	0.61	4.99***
Accuracy of earnings forecasts	189	0.83	10.69***	170	0.57	6.41***	75	0.53	4.32***
Incentive effect of the executive compensation contracts, including equity-based compensation	189	0.70	10.38***	166	0.62	8.84***	75	0.63	6.05***
Monitoring role of the debt contracts (eg, loan agreement)	189	0.77	10.76***	165	0.62	8.72***	75	0.47	3.97***

Respondents were first asked to indicate the level of influence on a scale of -2 (extremely negative influence), -1 (negative influence), 0 (no influence), 1 (positive influence), and 2 (extremely positive influence), T test, tests whether the mean response is significantly different from 0 = no influence; ***, **, and * indicate significant at 1%, 5%, and 10%, respectively (two-tail test).

WHAT FV INFORMATION IS USEFUL FOR VALUING AN ENTERPRISE?

The preceding subsection illustrated that FV accounting had a positive effect on analysts' earnings forecasts and on the quality of accounting information. However, we also investigated what FV information is useful for financial analysts, as primary users of accounting information, in their valuation of an enterprise. To do so we used a questionnaire survey based on a scale of 1 (not at all useful) to 5 (extremely useful).

We extracted seven categories of FV information related to the main areas of FV application in China. Table 10 shows that all categories of FV information were considered to be useful. However, the most useful information was the gains or losses from changes in FV in the profit and loss account. This included the gains and losses from changes in FV related to trading financial assets or liabilities, investment property, debt restructuring, and exchange of non-monetary assets, and it had a mean value of 4.11. This information was the most useful because it could have a primary and large impact on financial statements.

The financial analysts surveyed considered the information on the methods, models, assumptions and parameters for estimating FV (disclosed in the notes to financial statements) to be the second most useful to them, with a mean value of 3.99. This is consistent with suggestions made by the interviewed financial analysts on how to overcome the difficulties of FV adoption in China. The respondents also rated the information on share-based payment expenses as part of administrative expenses in the notes to financial statements as highly useful. The information on impairment of fixed assets, intangible assets and goodwill was also perceived to be useful for investors.

Additionally, the list of FV information considered to be highly useful included unrealised holding gains or losses from changes in FV of available-for-sale financial assets. Unlike other gains or losses from changes in FV which are included in the current net income, the unrealised holding gains or losses from changes in FV of available-for-sale financial assets are excluded from the current net income. Indeed, they are treated as one component of other comprehensive income in the notes to financial statements. This suggests that the respondents considered the FV information as being useful regardless of whether or not it affected the current income.

TABLE 10: USEFULNESS OF FV INFORMATION FOR VALUING THE ENTERPRISE

	N	Mean
Information on gains or losses from changes in FV in the profit and loss account	206	4.11
Information on the methods, models, assumptions and parameters for estimating FV disclosed in the notes to financial statements	205	3.99
Information on share-based payment expenses as part of administrative expenses in the notes to financial statements	205	3.93
Information on impairment of fixed assets	206	3.95
Information on impairment of intangible assets	206	3.86
Information on impairment of goodwill	206	3.78
Information on unrealised holding gains or losses for available-for-sale financial assets as one part of other comprehensive income in the notes to financial statements	206	3.91

Respondents were asked to indicate the level of usefulness on a scale of 1 (not at all useful), 2 (slightly useful), 3 (moderately useful), 4 (very useful), and 5 (extremely useful).

7. Summary and discussion of findings

THE EXTENT OF FV ACCOUNTING IMPLEMENTATION

Our analysis of the sample annual reports and questionnaire surveys shows that listed Chinese companies complied well with the mandatory and partially mandatory requirements for the use of FV to measure non-financial assets and liabilities. However, the companies did not prefer to use FV to measure non-financial assets and liabilities when this was conditionally mandatory or voluntary. We also found that they were more likely to recognise impairment losses on fixed assets than on intangible assets and goodwill, because it was relatively easier to obtain information on the FV of the former.

Moreover, the companies largely depended upon the asset appraisers to estimate the FV of (especially non-financial) assets or liabilities. In general, the amount of FV-related disclosure concerning non-financial assets and liabilities was small and the quality was low.

In contrast, there was greater use of FV (mainly Level 1 FV) to measure financial assets and liabilities, by either financial or non-financial companies. There was also a greater amount of FV-related disclosure concerning financial assets and liabilities.

Some of our findings on the extent of FV accounting implementation in China are consistent with the findings of prior studies. For example, Christensen and Nikolaev (2013) find that companies in the EU are unwilling to adopt FV accounting for non-financial assets, and FV accounting is used when reliable FV estimates are available at a lower cost. Cairns et al. (2011) investigated 195 companies listed in the UK and Australia following the adoption of IFRS in January 2005, and also confirmed that few companies voluntarily use FV measurement for tangible, intangible, and financial assets. Jung et al. (2013), meanwhile, find that CFOs of companies in the US are resistant to the FV option for non-financial assets.

In addition, our finding of the low volume and quality of FV-related information disclosure is consistent with findings by the CSRC. CSRC (2008, 2013), through an analysis of the annual reports of listed Chinese companies, found many issues related to FV information disclosure. For example, the study found little disclosure of the method of estimating the FV of stock options, available-for-sale financial assets, and financial assets without quoted prices from publicly active markets.

Several reasons may have contributed to the low volume and quality of FV information disclosure in China. First, there are imperfect accounting standards in China, and insufficient guidance is available on the application of FV in the present accounting standards. For example, when companies invest in non-tradable shares classified as available-for-sale financial assets, the fact that the current standards do not specify the methods of estimating their FV caused inconsistency and low quality of information disclosure (CSRC, 2008).

Second, many disclosure requirements of CASs were not observed. For example, some companies did not disclose information on the impairment of goodwill. This is despite the fact that CAS 8 requires that goodwill arising from a business combination be tested for impairment annually, irrespective of whether there is any indication that the goodwill may be impaired (CSRC, 2014).

Third, the low quality of FV-related information disclosure may be related to earnings management. For example, the increasing use of the employee equity-based payout plans has led companies to incur significant incentive expenses. To reduce such expenses, managers may manipulate the estimation of the FV of stock options and restricted stocks. Insufficient disclosure, then, may help mask earnings management.

FACTORS THAT AFFECT THE IMPLEMENTATION OF FV ACCOUNTING

The results from our CFO interviews and questionnaire surveys of auditors, CFOs and financial analysts suggest four things:

1. the implementation of FV accounting in practice was encouraged by a need to meet the regulatory requirements;
2. there was a desire to manage earnings and market values;
3. there was a drive to improve the quality of accounting information; and
4. there was a perception that FV more reliably reflects the value of the assets and liabilities.

The results also indicate the existence of a number of barriers. The most important barriers were the difficulty in obtaining FV in a less developed and less active market, the high complexity of estimating and disclosing FV, and the existence of imperfect accounting standards and insufficient guidance. Other important impediments include the imperfect supporting systems and facilities, the high additional cost of measuring and disclosing FV, accountants' shortage of FV-related technical knowledge, the need for significantly more professional judgement, and the effect on the volatility of operating performance.

Moreover, opinion diverged on a few issues. For example, the interviewed CFOs insisted that the reason for adopting FV was to reliably reflect the real value of related assets (eg, investment property) but not to manage earnings. However, the auditors responding to our questionnaire survey perceived that the main incentive was indeed to manage earnings. Note that this mixed evidence echoes prior studies. While some research (eg, Quagli and Avallone, 2010) demonstrates that managerial opportunism and earnings management were an important motivation for companies to implement FV accounting, other studies such as Guthrie et al. (2011) show that earnings management is not a significant factor affecting FV adoption.

In addition, the auditors and CFOs did not consider the lack of auditor and asset appraiser independence and competence to be an important barrier. The financial analysts, however, considered that the lack of auditor and asset appraiser independence and the low competence of asset appraisers were important impediments. Different groups adopted a different standpoint in response to these questions. In our opinion, however, the financial analysts were in a neutral position, and so their view may be more reliable.

We identified some implementation difficulties that are similar to those identified by practitioners in developed economies, such as complexity of FV standards, impractical FV standards guidance, and the concerns over earnings management (Harrington, 2011; Harris, 2011; Wallace, 2011). Some implementation difficulties have also been documented in prior studies in the context of developed countries. For example, Christensen and Nikolaev (2013) find that companies in the EU are unwilling to adopt FV accounting for non-financial assets because it is considered to be too costly to obtain reliable FV estimates. Jung et al. (2013) find that, according to CFOs of US companies, the choice of FV for measuring non-financial assets is motivated by the perception that FV is able to provide a better picture of a company's position, and hindered by the prohibitive cost of determining FV and unknown benefits of using FV.

Importantly, we identified four factors that may be specific to the Chinese environment:

- the high difficulty in obtaining the FV of some assets and liabilities;
- a lack of FV-related technical knowledge among accountants;
- a lack of necessary professional judgement; and
- a low level of auditor and asset appraiser independence and competence.

Moreover, these factors are closely related to the following Chinese institutional characteristics: the strong tradition of adopting uniform accounting systems (Xiao et al., 2004; Ezzamel et al., 2007; Ezzamel and Xiao, 2015); a poorly developed accounting infrastructure (Xiao et al., 2000) and asset pricing markets; and weak corporate governance mechanisms and legal enforcement.

THE USEFULNESS OF FV INFORMATION

The financial analysts we interviewed and the CFOs, auditors and financial analysts who responded to our questionnaire surveys all agreed that FV information was useful. However, the financial analysts felt that adjustments might be needed due to perceived earnings management, and that the usefulness of FV information depended on certain factors, such as whether the gains or losses from the change in FV were recurring or non-recurring.

FV information was considered useful because it enhanced analyst forecasts by improving their accuracy, frequency, timeliness and specificity level. Respondents also felt that the information improved the quality of accounting information in general by improving its transparency, relevance, timeliness, reliability, and comparability. Moreover, they felt that FV information improved the efficiency of companies' internal decision making, management earnings forecasts, the effectiveness of executive compensation contracts, and the monitoring effect of debt contracting. The financial analysts also suggested that some specific items of FV information were useful for valuing the enterprise – particularly the information on gains or losses from changes in FV in the profit and loss account, and the information on the methods, models, assumptions and parameters for estimating FV.

Some of the findings from the questionnaire surveys are consistent with prior empirical studies (eg, Barth, 1994; Dietrich et al., 2001; Song et al., 2010; Cairns et al., 2011; Campbell, 2015). For example, Song et al. (2010) find similar evidence on the relevance of FV measurement. Dietrich et al. (2001) investigate the reliability of mandatory annual FV estimates for UK investment property, and find that FV estimates are considerably less biased and more accurate measures of selling price than historical cost amounts. Cairns et al. (2011) find that mandatory requirements of FV measurement related to financial instruments and share-based payments have increased comparability using listed companies in the UK and Australia. And finally, Herrmann et al. (2006) argue that FV measures for property, plant, and equipment are superior to historical cost based on the characteristics or predictive value, feedback value, timeliness, neutrality, representational faithfulness, comparability, and consistency.

In addition, our results on the role of FV accounting in executive compensation contracts are consistent with the findings of Livne et al. (2011) and Shao et al. (2012). Specifically, Livne et al. (2011) find that CEO cash bonuses are positively related to FV valuation, because FV may be a good measure of current managerial effort. Shao et al. (2012) also confirm that FV accounting is useful in executive compensation contracting in China.

However, our findings are inconsistent with some prior empirical findings on the usefulness of FV accounting in debt contracting. For example, Demerjian et al. (2016) and Ball et al. (2015) find that FV accounting is less useful in the direct contracting role, causing lenders to modify contract definitions of financial covenants to exclude the effect of FV adjustments. These studies argue that FV may be subjective and manipulative, with undesirable volatility, and that it is consequently unfavourable to debt contracting. However, the adoption of FV accounting may be a mechanism through which conservative accounting facilitates efficient contracting by more timely impairment loss recognition (e.g., Lawrence et al., 2013). FV also provides a more accurate and realisable liquidation value of assets, particularly those with very low cost bases (Demerjian et al., 2016). This may help enhance the usefulness of FV accounting in debt contracting.

8. Policy implications

The findings above enabled us to elicit the following policy implications.

First, there is a need to perfect FV accounting standards and provide more typical cases and greater operational guidance. This should help overcome several barriers to FV adoption, including the high complexity of estimating the FV of relevant assets or liabilities (especially at Level 3), the need for significantly more professional judgment, and the lack of FV-related technical knowledge. Meanwhile, greater and more timely training on FV accounting should be provided to accountants to improve their professional knowledge, develop the necessary professional judgement and break away from the uniform system tradition (Xiao, Weetman and Sun, 2004; Ezzamel, Xiao and Pan, 2007; Ezzamel and Xiao, 2015).

Second, there is a need to further perfect the factor markets (Zeff, 2007) and build authoritative data platforms in order to overcome one of the most important challenges encountered in the implementation of FV. The high level of difficulty in obtaining FV information on relevant assets or liabilities from markets. It is because of such difficulty that few companies chose the FV model when presented with the choice. This also explains why companies largely depended on the work of external asset valuation experts, and why the quality of FV disclosure was low.

Third, it is very important to improve the quality of information disclosure. On the one hand, our surveys show that the quality of FV information disclosure was very low in practice. On the other hand, there is a strong demand from investors for FV information, as shown in our questionnaire surveys of securities analysts and fund managers. Thus, FV information should be more fully and timely disclosed in the notes to financial statements, particularly Level 3 FV information including the models, methods, assumptions, parameters, etc for estimating FV. There should also be more rigorous enforcement over the requirements surrounding the quantity and quality of FV disclosure.

Moreover, there is a need to improve relevant regulatory measures relating to companies, asset appraisers, and external auditors. Our results indicated that companies used FV accounting to manage earnings by opportunistically choosing the FV model and selecting methods, assumptions, and particularly parameters for estimating FV. Hence, it is important to enhance the supervision over the use of FV accounting, especially when managers have discretions.

Additionally, given the high complexity of FV accounting and the lack of FV-related technical knowledge, company managers largely depended on the work of external asset appraisers. However, managers have strong incentives to negotiate with these hired asset appraisers for their own benefits. Therefore the professionalism and independence of such asset appraisers is crucial to maintaining the high quality of FV information. Similarly, external auditors can play an important role in overcoming the difficulties and challenges in the process of implementing FV accounting and improving the quality of FV information, but this requires auditors to strengthen up their professional competence and independence.

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