The relative value relevance of accounting measures based on Chinese Accounting Standards and those based on International Financial Reporting Standards

By

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To my dear parents: Bei-Yang and Zhang-Jin, as well as my fiancé Joey.

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I certify that, except as noted above, this dissertation is my own work (except where acknowledgments otherwise indicate) and has not been submitted, in whole or in part, for another degree at this or any other university.

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LIST OF ACRONYMS

ADRs	American Depository Receipts
ASBE	Accounting Standards for Business Enterprises
BVPS	Book Value Per Share
CASs	Chinese Accounting Standards
CPA	Certified Public Accountants
CSRC	China Securities Regulatory Commission
EPS	Earnings Per Share
FDI	Foreign Direct Investment
FIEs	Foreign-Invested Enterprises
GAAP	Generally Accepted Accounting Practices
GBP	Great British Pounds
GDP	Gross Domestic Product
HAC	Heteroscedasticity-and-Autocorrelation-Consistent
HKD	Hong Kong Dollars
HKSE	Hong Kong Stock Exchange
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IFRSs	International Financial Reporting Standards
JSLEs	Joint Stock Limited Enterprises
LSE	London Stock Exchange
MOF	Ministry of Finance
NETS	National Exchange and Trading Systems
NPC	National People's Congress
NYSE	New York Stock Exchange
OLS	Ordinary Least Squares
PPP	Purchasing Power Parity
RMB	Renminbi
SETC	State Economic and Trade Commission
SEZs	Special Economic Zones
SHSE	Shanghai Stock Exchange
SOEs	State-Owned Enterprises
STAQS	Stock Trading Automated Quotation System

SZSE	Shenzhen Stock Exchange
TEJ	Taiwan Economic Journals
UAS	Uniform Accounting System
UK	United Kingdom
US	United States
USD	United States Dollars
WTO	World Trade Organisation

ABSTRACT

The objective of this dissertation is to investigate the relative value relevance of accounting information (earnings and book values of equity, based on two sets of financial statements) in relation to both A- and B-share prices over the following periods: (a) 1994 to 1997, (b) 1998 to 2004, and (c) 1994 to 2004. In particular, this dissertation focuses its investigation on Chinese companies that have issued two types of shares, namely, A-shares (issued to domestic investors) and B-shares (issued to foreign investors). These companies are required to prepare two sets of financial statements. One set of financial statements is prepared for the A-share investors and is based on Chinese Accounting Standards (CASs), while the other set is prepared for the B-share investors and is based on International Financial Reporting Standards (IFRSs).

Most of the prior studies that have investigated the relative value relevance of CASs-based and IFRSs-based accounting information: (a) have used sample periods which end before 1998; and (b) are biased in favour of the B-share market. Given that the first major step to converge CASs towards IFRSs occurred in 1998 when company managers were allowed to exercise judgement in making accounting estimates, it is therefore interesting to determine whether the improvements in CASs since 1998 have changed the value relevance of CASs-based information relative to IFRSs-based information, especially in the A-share market.

This dissertation adds to the existing literature by being the first comprehensive study to examine the relative value relevance of CASs- and IFRSs-based accounting data in relation to both the A- and B-share prices using a much larger sample and covering both the period before the convergence of CASs towards IFRSs and the period after the convergence. Furthermore, since this dissertation compares the value relevance of the CASs-based and IFRSs-based accounting information, its findings may shed some light on and contribute to the wider debate about the relevance or irrelevance of the IFRSs in developing countries.

This research uses the price model to conduct association tests between A-share prices and B-share prices and earnings and book values of equity under the two sets of financial statements: one based on CASs and the other on IFRSs. The Davidson Mackinnon (1981) J-test is employed to test the relative value relevance of these two competing sets of accounting information.

This dissertation has three main findings. Firstly, both the CASs-based and the IFRSs-based accounting information are value relevant in all the three sample periods (pre-1998, post-1998 and the full sample period) in both the A- and B-share markets. Secondly, for all the three sample periods and for both the A- and B-share markets, the IFRSs-based accounting information is more value relevant than the CASs-based accounting information. Finally, although there was no change in the value relevance of accounting information based on the two sets of accounting standards, the magnitude of the differences between the explanatory powers of the CASs-based and IFRSs-based accounting information narrowed significantly in the post-1998 period (when compared to the pre-1998 period) in both the A- and B-share markets. The results of this study appear to support China's efforts in the past ten years to converge CASs towards IFRSs.

Chapter 1
INTRODUCTION

1.1 Background

Since the economic reforms of the 1980s (which saw the introduction of a "socialist market economy", the opening of the economy to foreign investors, and China's accession to the World Trade Organisation (WTO) in 2001) the Chinese economy has grown rapidly. Specifically, the economy registered an average Gross Domestic Product (GDP) growth rate of 9.6% between 1980 and 2006 compared to an average of 7.4% ten years prior to the reform (National Bureau of Statistics of China, 2006). In order to: (a) promote and sustain a high economic development; (b) integrate China into the world economy; (c) promote the development of China's capital markets and (d) facilitate business activities between companies inside and outside China, the Chinese Ministry of Finance (MOF), which is responsible for the regulation of accounting, set itself a number of goals. These goals include encouraging investors' confidence in financial information, improving the transparency and comparability of financial reporting, and converging Chinese Accounting Standards (CASs) with International Financial Reporting Standards (IFRSs)[1] (Deloitte Touche Tohmatsu, 2006a).

During the last ten years, the MOF has made significant progress in the development of CASs and converging them with IFRSs. This progress was particularly marked in 1998 when the gap between CASs and IFRSs was significantly narrowed with respect to management's choice in making estimates for depreciation rates, allowance for doubtful debts and allowance for inventory write-downs. The latest milestone in the progress made by the MOF was the February 2006 announcement that CASs will converge with IFRSs in January 2007 (IASB, 2006).

The development of IFRSs has been based mainly on the financial reporting systems of countries with highly developed capital markets, such as the United Kingdom (UK) and the United States (US) (Eccher and Healy, 2000). It is therefore questionable whether

[1] Up to 2001, the Board of the International Accounting Standards Committee (IASC) was responsible for issuing International Accounting Standards (IASs). However, since 2001, the International Accounting Standards Board (IASB) became responsible for issuing IASs which are now designated International Financial Reporting Standards (IFRSs), a term that includes both IFRSs and IASs (IASB, 2005).

IFRSs are relevant for a developing country such as China. More importantly, the question arises as to whether IFRSs-based accounting measures (earnings and book values of equity) are more value relevant (or have greater information content) than the CASs-based accounting measures.

An interesting feature of China's "socialist market economy" is the regulation that allows Chinese companies to issue both A-shares and B-shares. A-shares can only be issued to (and traded among) domestic investors, while B-shares can only be issued to (and traded among) foreign investors. This arrangement (a) allows the Chinese government to continue to have control over the privatised State-Owned Enterprises (SOEs), and (b) allows the companies and the economy to enjoy the benefits that come with the participation of foreign investors. Chinese firms that have issued both A- and B-shares are required to prepare two sets of financial statements, namely, CASs-based financial statements (intended for domestic investors) and IFRSs-based financial statements (for foreign investors). Thus, China presents a unique opportunity to examine the relative value relevance of accounting information based on these two sets of accounting standards.

1.2 Prior studies and their limitations

Studies that have examined the value relevance of CASs-based and IFRSs-based accounting information have reported mixed results. For example, Bao and Chow (1999) conclude that for B-share prices, IFRSs-based accounting information is more value relevant than the CASs-based information. Eccher and Healy (2000) find that CASs-based accounting information is more value relevant than IFRSs-based information for the A-share market. However, Eccher and Healy (2000) do not show which one of the two sets of financial statements is more value relevant for the B-share market. Chen, Firth and Kim (2002) find that for the A-share market, IFRSs-based information does not provide additional value over that provided by CASs-based accounting data (incremental value relevant). Sami and Zhou (2004) examine the value relevance of CASs-based accounting information in relation to the A-share prices and the value relevance of IFRSs-based accounting information in relation to the B-share prices. They conclude that accounting information is more value relevant in the B-share market than in the A-share market.

However, a number of problems or limitations exist with these prior studies. Firstly, the first major step to converge CASs towards IFRSs occurred in 1998 when management was allowed to exercise judgement in providing for estimates. It would therefore be interesting to see whether the improvements in CASs since 1998 have changed the value relevance of CASs-based information relative to IFRSs-based information. However, most prior studies usually have a sample period of 5 years which ends before 1998 (see Bao and Chow, 1999; Eccher and Healy, 2000 and Chen, Firth and Kim, 2002). The only exception is Sami and Zhou (2004), who covered a period of 7 years from 1994 to 2000. Unfortunately, Sami and Zhou (2004) did not examine the relative value relevance of CASs-based and IFRSs-based accounting information in relation to the A- and B-share prices. Secondly, although there has been effective segmentation between A- and B-share markets when it comes to share ownership, there is nothing that prevents CASs-based and IFRSs-based financial statements being accessed by both classes of investors. Hence, it should be interesting to examine the relative value relevance of CASs- and IFRSs-based accounting data for both A- and B-share prices. However, other than Eccher and Healy (2000), no other prior study has examined the value relevance of accounting data based on CASs versus that based on IFRSs for the A-share market. The main limitation of the study by Eccher and Healy (2000) is that it used a returns model in which only an income statement measure (earnings) is the explanatory variable. Thus, hitherto, no research has investigated the relative value relevance of CASs- and IFRSs-based information using the price model (based on both income statement and balance sheet numbers) for the A-share market.

1.3 The research objective and its justification

Given the limitations of the prior studies presented above, the objective of this dissertation is to investigate the relative value relevance of the CASs-based and IFRSs-based accounting information (earnings and book values of equity) in relation to both A- and B-share prices over the following periods: (a) 1994 to 1997, (b) 1998 to 2004, and (c) 1994 to 2004.

Given that 1998 is a major landmark in terms of converging CASs towards IFRSs, it is thus interesting to see whether the improvements in CASs since 1998 have changed the relative value relevance between the CASs- and IFRSs-based accounting information

especially in the A-share market. Some of the prior studies imply that the two markets are separate in terms of accounting information (with the CASs-based information considered to be relevant only in the A-share market and the IFRSs-based information in the B-share market). However, although there has been effective segmentation between A- and B-share markets when it comes to share ownership, there is nothing to prevent CASs-based and IFRSs-based financial statements being accessed by both classes of investors (for example, Bao and Chow, 1999). In addition, this segmentation has been compromised since 2001, when the China Securities Regulatory Commission (CSRC)[2] allowed cross-shareholding in the two market segments by certain qualified investors. This dissertation is therefore the first comprehensive study to examine the relative value relevance of CASs- and IFRSs-based accounting data for both the A- and B-share markets using a much larger sample and covering the period before the 1998 convergence of CASs towards IFRSs and the period after the convergence. Finally, since this dissertation compares the value relevance of the CASs-based and IFRSs-based accounting information, its findings may shed some light on and contribute to the wider debate about the relevance or irrelevance of the IFRSs in developing countries.

1.4 Dissertation structure

The rest of this dissertation is arranged as follows. Chapter 2 reviews the development of the CASs and China's economic, social and political environment. Chapter 3 focuses on the prior studies on the subject of value relevance in China and in other (developed and developing) countries. Chapter 4 formulates the research objective and discusses the methodology adopted for this dissertation. The research results are presented, analysed and discussed in Chapter 5. Finally, Chapter 6 concludes the dissertation and presents suggestions for future research.

[2] The CSRC was set up in July 1992 as the Chinese equivalent of the Securities and Exchange Commission in the United States to monitor and regulate the stock markets in China.

Chapter 2
THE DEVELOPMENT OF CHINESE ACCOUNTING STANDARDS AND ITS ENVIRONMENT

2.1 Introduction

> *To a large extent, accounting is a product of its environment. That is, it is shaped by, reflects, and reinforces particular characteristics unique to its national environment* (Radebaugh and Gray, 1997, p. 46).

Environmental influence is crucial in understanding the development of Chinese accounting. In particular, it is difficult to comprehend Chinese accounting without a clear understanding of both its historical and recent eco-political developments (Enthoven, 1987).

Section 2.2 of this chapter begins with a description of the historical background to the development of Chinese accounting. The focus is on the transformation of Chinese accounting through three time periods. These periods are determined by political and economic changes in China. The first period is from ancient times to 1948. During this period a cash-based accounting system was developed and predominantly used. The second period, from 1949 to 1978, is regarded as the period of the planned economy under the leadership of the Chinese Communist Party. A Uniform Accounting System (UAS), adopted from the former Soviet Union, was employed during this period and was used mainly for the purpose of resource allocation by the state. The third period, from 1979 to the present, is a period of a socialist market economy in which a free market economy operates within a socialist market environment. Thus China has had to abandon most of the UAS used in the planned economy and has started developing new local accounting standards that are based on the accounting standards, mainly IFRSs, from the market-based economies.

Section 2.3 proceeds to discuss the development of current CASs in detail and section 2.4 examines the major differences between CASs and IFRSs. The development of the Chinese stock markets is described in section 2.5, while section 2.6 focuses on the financial reporting regulations for listed companies in China. Finally, section 2.7 summarises this chapter.

2.2 Historical background to the development of Chinese accounting

China has gone through many radical changes in the development of its accounting framework. As summarised in Table 2.1 below, China's accounting development started from a cash-based accounting system used in ancient times, followed by a central-planning-focused UAS that was used during the three decades of communist party rule. Finally, since the period of economic reform in the late 1970's to the present, there has been a focus on the convergence of its accounting standards with IFRSs.

TABLE 2.1

Changes in Chinese economy and accounting systems from ancient time to present

	Time Periods		
	Ancient – 1948	*1949 – 1978*	*1979 – present*
Type of economy	Capitalist economy	Planned economy	Socialist Market economy
Accounting system	Cash-based system	Uniform Accounting System (UAS)	CASs in process of convergence with IFRSs

2.2.1 Ancient times to 1948

The origin of accounting in China is difficult to trace, however the use of accounting to measure wealth and accomplishments has been noted as far back as the Xia Dynasty (2000-1500 BC) (Zhou, 1987, as cited in Graham and Li, 1997). Furthermore, the recording of accounting matters has been found on bone inscriptions from the Shang Dynasty (1562-1066 BC) (Shiyan City, 2003a).

However, the Western Zhou Dynasty (1100 -770 BC) can be regarded as the period when accounting was formally recognised in China. This is evident from the invention of the first complete single-entry bookkeeping system, and the creation of accounting as an occupation during this time. The word 'accounting' ('Kuai ji' in Chinese) was first used during this time and means the day-to-day recording of everything ('Kuai') and year-end recording ('ji') (Shiyan City, 2003b). At this stage, bookkeeping was a simple 'three column method' in which symbols such as 'ru' (in) and 'chu' (out) were used to record receipts and payments, in order to arrive at the closing balance for the period called 'yu'(Aiken and Lu, 1998).

Further developments in accounting were made during the Tang Dynasty (AD 618-907), and the Song Dynasty (AD 906-1279), in which "the four pillars accounting method", was used (Shiyan City, 2003b). The four pillars represent the opening balance, receipts and payments in the current period and the net amount at the end of the period. These four figures symbolise the four pillars that are important in supporting the structure. The relationship between the four figures is given as follows:

Balances brought forward + New receipts – Payments = Closing balance (Shiyan City, 2003b).

This single entry bookkeeping system was used in ancient China until the transition period of the late Ming Dynasty and the early Qing Dynasty in about the mid-1600s. This was the time when the Chinese form of double-entry bookkeeping called "Long Men Zhang" was created (Aiken and Lu, 1998).

The basic equation was:

Receipts - Payments = Keeping - Owing

In this system, 'receipts' encompass all the income earned by a business and 'payments' include all the expenses incurred by the business. 'Keeping' represents an increase of assets, while 'owing' means an increase in the liabilities of the business (Aiken and Lu, 1998).

These ancient cash-based accounting systems changed radically with the political change that followed the Xinhai Revolution when the Kuomintang ousted the Qing Dynasty, in the early 1900s. From the 1920s, a number of Chinese scholars who had studied overseas, returned to China and pioneered Western style accounting education. Gradually, accounting departments were established, and bookkeeping and accounting courses were introduced at university and college levels. This was the first time that university study became a way to understand and advance the principles and practices of accounting in China. Previously, accountants had only been trained under the master-apprentice system, that is, a system of on-the-job training whereby a person learns the accounting skills by becoming an apprentice of a skilled accountant (the master) (Graham and Li, 1997).

The economy in China was mainly driven by the private sector until 1949, when the landscape changed once again.

2.2.2 Planned economy: 1949-1978

In 1949, the Chinese Communist Party led by Mao Zhedong took over China from the Kuomintang and the People's Republic of China was founded. The Soviet economic model was then adopted in order to achieve the ultimate goal of establishing China as a highly centralised and planned economy. As a result, enterprises that were previously owned by the Kuomintang government or bureaucrats or by foreigners were confiscated and transformed into SOEs (Huang and Ma, 2001).

At this time, China also adopted the Soviet system of accounting. Accounting education based on the Western accounting system was completely discarded, as the Western system was considered to be that of the capitalists. The accounting development at this time was focused solely on the translation of the Soviet Union's accounting theory and practices into Chinese (Aiken and Lu, 1998).

The Chinese MOF was established in 1949 as the department in charge of accounting affairs. It started to enforce the UAS, which is a state controlled and tax driven financial reporting system[3]. This UAS comprised a "uniform set of standard chart of accounts, a fund-oriented source, and application-type balance sheet, a somewhat conventional income statement and numerous analytical schedules" (Winkle, Huss and Chen, 1994, p.51). However, as the UAS was drafted by different sectors of the national economy (for example, the agriculture, railway and transportation, and telecommunication industry), it varied across sectors. Thus, each UAS provided the production and operations statistical data of a particular industry for the government's planning and control purposes.

It is argued that the reason for the establishment of the UAS was that at the beginning of the period of accounting reform, the quality of accountants was relatively poor as they did not have the professional judgement needed to implement the UAS. Hence, the accountants were not allowed to make any changes to the UAS (Zhang, 2005).

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[3] Please refer to Appendix A for a summary of the main characteristics of traditional Chinese accounting.

The accounting emphasis of the state at the time was focused on issues of counting quantities and on the comparison of costs and quantities. This was because the state wanted to focus attention on the central planning objectives and to avoid the use of "profits" in this socialist society (Winkle, Huss and Tang, 1992). As Graham and Li (1997) have observed "these new accounting objectives were more related to managerial than financial accounting, and the role of financial accounting in decision making was diminished during this period due to the increase in the role of the state in central planning and decision making" (Graham and Li, 1997, p. 249).

The political movements of the Great Leap Forward of the late 1950s, and the Cultural Revolution of the mid-1960s caused enormous turmoil in China's economy. These events were characterised by the emphasis on labour intensive production, such as farming and manufacturing, and by the elimination of the class struggle between the workers and capitalists. Accounting, which was considered to be unproductive labour and seen to be too complicated for the masses, was targeted for radical simplification. Terms such as debit and credit were replaced with simple terms such as plus and minus, and the accounting system and reporting were further simplified and made accessible to the masses (Winkle, Huss and Tang, 1992). Any remaining accounting theory at that time, as taught in the universities, was rejected and placed under official disrepute. On-the-job training became the mode of accounting education once again (Zhang, 2005).

2.2.3 Socialist market economy: 1979 to date

The period 1979 to the present was a time of economic recovery and reform for China. The CCP changed its focus from a class struggle to economic reconstruction. This is now generally known as the period of economic reform led by the late Chinese leader Deng Xiaoping.

In the late 1970s, the Chinese leadership realised that the Soviet economic model was not achieving its goals. With the need to restructure the economy, there was a shift from central control to a 'socialist market economy', in which capitalism and free enterprise now exist with state oversight and sometimes direct intervention (Graham and Li, 1997). In a socialist market economy, the government no longer dictates the price and quantity of products. Rather, it is the forces of demand and supply in the

market which drive these factors. For the first time since 1949, the economic role of the government has changed from that of the manager of both the macro- and micro-economy to that of the manager of the macro-economy only.

In contrast, other countries, such as Poland and Romania, which formerly had centrally planned economies, took a different approach. As MacLullich and Garau (2004) have noted, these Eastern European countries transformed directly from a communist and centrally planned economy to a free-market capitalist economy. This transformation resulted in great economic instability such as soaring unemployment and resistance by the SOEs. Nonetheless, this approach brought about favourable Foreign Direct Investment (FDI) inflows desperately needed by these countries.

In comparison to the Eastern European countries, China's method of reform differs in two ways. Firstly, due to the ideology of the socialist market economy, privatisation in China was only partial with the state continuing to be the single largest stakeholder (about 60% including indirect holding) in most SOEs (Sun and Tong, 2003). In contrast, Eastern European countries and the former Soviet Union fully privatised their SOEs. However, as Sun and Tong (2003) have found, this partial privatisation in China has only had limited success when compared to the privatisation programs in other post-communist countries. Secondly, China chose to liberalise its economy in the hope that this would eventually lead to political freedom. Conversely, the Eastern European countries introduced a democratic structure to their political system, hoping to energise and free the economic system (Hilmy, 1999).

Deng Xiaoping started the economic reform in the late 1970's by encouraging productivity in the countryside, adopting an open door policy to attract foreign capital, promoting China's international trade, and importing advanced technology and managerial expertise from abroad (Huang and Ma, 2001). Flexible policies and measures were also implemented including the establishment of four Special Economic Zones (SEZs) in Shenzhen, Zhuhai, Shantou and Xiamen for foreign trade and "open cities" which offered special privileges to Foreign-Invested Enterprises[4] (FIEs) (Zhang, 2005). These reform policies have resulted in rapid development in these areas with annual growth rate averaging 20% in the SEZs (China Broadcast, 2006). According to

[4] These are companies with foreign investors, usually formed as a joint venture between a Chinese company and a foreign company.

China's Minister of Commerce, Bo Xilai, these areas achieved a total GDP of US Dollars (USD) 120 billion in 2005, which was 14% higher than the national average GDP (China Broadcast, 2006). In addition, foreign investment in these areas exceeded USD 13 billion, more than one-fifth that of the entire country (China Broadcast, 2006).

However, these reform policies mainly targeted the South-eastern coastal region of China. The accelerated economic development in this region has, at the same time, widened the disparities in economic development between the South-eastern region and the rest of the country. In an attempt to rectify this imbalance, the government launched the "Develop the West"[5] program in 2000, "Revitalising the Northeast"[6] campaign in 2003, and most recently, "The Rise of the Central Areas"[7] strategy in 2006. These programs are mainly in the form of preferential policies offered by the government in terms of capital input, and other measures for encouraging foreign investment such as favourable tax incentives (China Internet Information Centre, 2006).

At the same time, China has undertaken a program to restructure the form and structure of the SOEs. Small and weak SOEs were sold off through auctions and underwent corporate transformation, while the medium and large ones were transformed into enterprises which issue shares to different types of investors (see sub-section 2.4.1) and have limited liability. These are referred to as Joint Stock Limited Enterprises (JSLEs) and are publicly listed on the various local stock markets. This restructuring has changed the ownership relationship between the government and SOEs as the government is no longer the sole owner of the SOEs nor is it responsible for all the debts of the SOEs. In contrast, the SOEs now have their own legal status and bear independent civil responsibilities. During this time, private enterprises, various corporations and FIEs were also formed and allowed to operate and compete with

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[5] The western region includes nine provinces and autonomous regions, namely, Gansu, Guizhou, Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Xinjiang and Yunnan, in addition to Chongqing Municipality, accounting for two thirds of the nation's total area and 22.8% of its population. However, its share of the national GDP only accounted for 17% in 1999. In the five years between 2000 and 2004, 60 key projects were started in western China, involving an investment of over RMB 850 billion (China Internet Information Centre, 2006).

[6] The three Northeast provinces of Heilongjiang, Liaoning and Jilin, known as the "industrial cradle of China," played a vital role in the country's industrial development from the 1950s to the early 1970s (China Daily, 2003). This campaign thus aims to revitalise this region and make it into the country's industrial base again.

[7] The Central Area includes the Anhui, Henan, Jiangxi, Hubei, Hunan and Shanxi provinces. They are the major contributors of China's grain and energy supply (Chinese Government, 2006).

state-owned ones (Zhang, 2005).

In addition, commodity, real estate, financial, labour, security and technology markets are being developed to cater for the needs of the market, and companies are being increasingly subjected to market influence such as demand and supply driven by the market (Xiao and Pan, 1997).

China's effort in economic reform over the past 27 years has resulted in many favourable outcomes. Most notable was its winning, in July 2001, the right to host the 2008 Olympic Games, and gaining accession to the WTO in September the same year. These events in turn, have boosted the confidence of both domestic and foreign investors in the Chinese market. During 2002, total domestic fixed investment grew by about 16%, the highest growth rate since 1996 (National Bureau of Statistics of China, 2006). Moreover, the total FDI inflows reached USD 52.7 billion, making it the country that received the most FDI in 2002 (Hong Kong Trade Development Council, 2003). Furthermore, China's commitment to economic reform has resulted in an average annual GDP growth rate of about 10% since the start of its economic reform in 1979. This growth rate in GDP enabled China to be ranked first in the world at the end of 2005. However, measured on a Purchasing Power Parity (PPP) basis, China rates as the second-largest economy in the world after the US, and with a GDP of USD 2.225 trillion in 2005, it overtook France and Italy and ranked fifth after the US, Japan, Germany and the UK (Central Intelligence Agency, 2006).

However, as Xiao and Pan (1997, p. 283) have noted: "these changes have posed serious problems for accounting, such as how to account for the capital structure, what information is relevant to investment decisions with the market orientation, and who should decide on accounting policies".

China thus realised that its old accounting system could not meet the demand for financial information by lenders, outside investors, investment bankers, and financial analysts. Initially, the MOF considered trying to adapt the traditional accounting system (i.e. the UAS) as a basis for the required market oriented accounting. However, after realising that the fundamentals of the UAS was incompatible with international accounting practices, the MOF decided to adopt a radical approach by abandoning most of the traditional accounting systems and adopting a system developed in the market

economies such as those of the UK and the US (Tang, 2000).

However, it is generally recognised that it is difficult to simply lift an existing set of standards or principles and impose them on another country as not all the standards developed by one country are relevant to another country (Chamisa, 2000). Indeed, there are frequent references by the Chinese policy makers to the concept of "guo-qing", or Chinese special circumstances, and to the fact that standards and regulations will be developed but only after considering Chinese needs and culture. As is the case with other former communist countries, such as Poland and Romania, it is recognised that due to the complexity of accounting rules and practices, the accounting system reforms must be a gradual process, starting from the most general principles and developing the more detailed regulations from these principles (MacLullich and Gurau, 2004).

2.3 Development of current Chinese Accounting Standards (CASs)

Xiao and Pan (1997) have identified three types of pressure that motivated the Chinese accounting standards-setting program.

The first pressure was to standardise domestic accounting practices. As discussed in section 2.2.2, different UASs had been used by various industries for accounting reporting purposes. These systems adopted different accounting methods and disclosure formats for different industries.

The second pressure was to meet the requirements of economic reforms. Before its economic reform, China had been a centrally controlled economy. The state was the sole owner and controller of businesses in China. Accordingly, accounting systems had only been designed to provide information to the government for its planning purposes. As a result of economic reform, and especially due to the establishment of the capital markets in China, demand for financial information by various stakeholders could not be met by the old accounting system.

Finally, there was the pressure to harmonise the Chinese accounting system with international accounting practices. The UASs were based on the accounting concepts geared towards a socialist economy. These UASs were therefore quite different from accounting systems used by market-based economies. This difference caused

difficulties for foreign investors who wished to conduct feasibility studies and make decisions about investing in China.

The importance and need for IFRSs is best presented by Zhang (2005, p.198) as follows:

> *"International accounting development is triggered by the development of multinational enterprises, the global capital market, and worldwide trade ... As a result, high-quality international accounting standards are needed to provide comparable and consistent financial information to assist in capital allocation, and to maximize the efficiency of capital markets throughout the world, ..."*

In order to realise the benefits of harmonised accounting practices, the first Chinese accounting standard, *Accounting Standards for Business Enterprises (ASBE)* was promulgated in 1992. It was a landmark in accounting reform, indicating that Chinese accounting practitioners and scholars had begun to make use of international accounting standards and Western experience from the US and the UK to direct further reform (see Appendix B for an outline of the 1992 ASBE). In the same year, the *Accounting System for Joint Stock Limited Enterprises* was promulgated for listed companies in order to standardise accounting practice and disclosures. It incorporated international accounting practices into accounting requirements for Chinese listed companies. Furthermore, *Accounting System for Foreign-Invested Enterprises* was issued for FIEs, which sets out a prescribed format for the financial statements of enterprises with foreign investment.

In 1998, the *Accounting System for Joint Stock Limited Enterprises* was revised to further harmonise it with international practices. For the first time since the reform of the accounting standards, Chinese companies had some degree of discretion in selecting accounting methods and making accounting estimates. For example, managers are now allowed to use their judgement to make allowances for bad debts and inventory write-downs (Haw, Qi and Wu, 1999).

As part of a continual process in harmonising the Chinese accounting standards with the IFRSs, a new ASBE was issued by the MOF in 2001. This new ASBE provides definitions for the fundamental principles of accounting such as going concern,

materiality and the basic elements of financial statements. It also specifies classifications, recognition and measurement of the basic elements (i.e. assets, liabilities, equities, income and expenses). Furthermore, it provides a broad guideline and summary of general principles in accounting for various accounting issues such as consolidation, contingencies and income taxes which are based on the principles of IFRSs (Deloitte Touche Tohmatsu, 2006a) (see Appendix C for a description of the content of the 2001 ASBE).

The 2001 ASBE is applicable to all Chinese business enterprises (other than financial institutions and small enterprises) and it supersedes all previously promulgated accounting regulations such as the *Accounting System for Joint Stock Limited Enterprises* and the *Accounting System for Foreign-Invested Enterprises.*

However, the 1992 ASBE and the subsequently improved 2001 ASBE are essentially conceptual frameworks, which provide little guidance on how to account for complex business transactions. Consequently, since 1993, the MOF has developed and issued detailed accounting standards formulated under the guidelines of ASBE[8].

In 1993, with funding from the World Bank, the MOF engaged Deloitte Touche Tohmatsu (hereafter, 'Deloitte') as consultants to develop some 30 accounting standards appropriate to China's developing socialist market economy.

The development of these accounting standards in general was guided by three principles:

> *"(1) the standards should be adapted to a socialist market economy and the economic structure that has many forms of ownership with the public ownership having a dominant position;*
> *(2) the standard-setting should draw on foreign theory, international conventions, and China's own practices, and should be in harmony with the standards promulgated by the IASC to the extent possible; and*
> *(3) the standards should be in harmony with fiscal and taxation rules but should maintain their independence."* (Xiao and Pan, 1997, p. 281)

[8] It should be noted that in February 2006, the MOF issued the latest set of 38 accounting standards which are collectively called 'ASBE'. This ASBE includes the 2001 ASBE and the CASs, but will only be effective from 1 January 2007. See sub-section 2.5.3 for detail.

Exposure drafts on 30 accounting standards were published between 1994 and 1996. However, due to implementation difficulties, only 16 final standards had been issued and became effective by 2001 (see Table 2.2). It should be noted that, although the scope of applicability of each CAS is different (only six are applicable to all enterprises), many issues addressed in the individual CASs are also included in the 2001 ASBE, which is applicable to JSLEs and FIEs. All the 16 CASs are applicable to the listed companies examined in this dissertation as they are JSLEs that must adopt ASBE.

For the period 2001 to 2005, the MOF did not issue any standards even though new exposure drafts were published. This could be due to the many changes to the IFRSs during that period. To help preparers of financial statements, the MOF has also issued other pronouncements, such as guidelines for specific industries (Deloitte Touche Tohmatsu, 2006a). Since 2002, 11 sets of industry-specific guidelines have been issued (see Table 2.3).

However, in February 2006, it was formally announced that CASs would converge with IFRSs with effect from January 2007 (IASB, 2006). Since that announcement, the MOF has adopted a new basic standard (similar to the IASB framework) and 38 new CASs that are substantially in line with IFRSs, except for certain modifications that reflect China's unique circumstances and environment. Although these CASs do not reflect a literal translation of IFRSs, they do, however, address nearly all the issues covered in IFRSs (see Table 2.4). The basic standard and CASs are jointly known as 'ASBE'. This comprehensive 2006 ASBE thus replaced the 16 CASs and the 2001 ASBE. From 1 January 2007, all listed Chinese enterprises are required to comply with the 2006 ASBE. Other Chinese enterprises are encouraged to apply these standards (Deloitte Touche Tohmatsu, 2006b).

TABLE 2.2

The 16 promulgated Chinese Accounting Standards as at 31 December 2001

No.	*Accounting Standard*	*Effective Date*	*Applicability*
1	Disclosure of Related Party Relationships and Transactions	01 January 1997	Listed Enterprises
2	Cash Flow Statements (minor revision in 2001)	01 January 2001	All Enterprises
3	Events Occurring After the Balance Sheet date (revised 2003)	01 July 2003	Enterprises which adopt the ASBE
4	Debt Restructuring (revised significantly in 2001)	01 January 2001	All Enterprises
5	Revenue	01 January 1999	Listed Enterprises
6	Investments (minor revision in 2001)	01 January 2001	Joint Stock Limited Enterprises (prior to 1 January 2001 listed enterprises only)
7	Construction Contracts	01 January 1999	Listed Enterprises
8	Changes in Accounting Policies and Estimates and Correction of Accounting Errors (minor revision in 2001)	01 January 2001	All Enterprises (prior to 1 January 2001 listed enterprises only)
9	Non-monetary Transactions (revised significantly in 2001)	01 January 2001	All Enterprises
10	Contingencies	01 July 2000	All Enterprises
11	Intangible Assets	01 January 2001	Joint Stock Limited Enterprises
12	Borrowing Costs	01 January 2001	All Enterprises
13	Leases	01 January 2001	All Enterprises
14	Interim Financial Reporting	01 January 2002	Listed Enterprises
15	Inventories	01 January 2002	Enterprises who adopt the ASBE
16	Fixed Assets	01 January 2002	Enterprises who adopt the ASBE

Source: Deloitte Touche Tohmatsu, 2006a

TABLE: 2.3

Accounting guidelines for 11 industries

Applicable industries	*Issue Date*	*Effective Date*
Telecommunication	22-Sep-02	1-Jan-03
Construction contractors	25-Sep-03	1-Jan-04
Civil Aviation	19-Jun-03	1-Jan-03
Publishing enterprises	14-Jan-04	1-Jan-04
Railway transportation	1-Jul-04	1-Jan-04
Agricultural	22-Apr-04	1-Jan-05
Insurance brokers	20-Sep-04	1-Jan-05
Investment enterprises	25-Oct-04	1-Jan-05
Film industry	9-Dec-04	1-Jan-05
Shipping and port industry	9-Dec-04	1-Jan-05
Enterprises engaged in trust activities	5-Jan-05	5-Jan-05

Source: Deloitte Touche Tohmatsu, 2006a

TABLE: 2.4

List of standards covered in the 2006 "Accounting Standards for Business Enterprises" (2006 ASBE)

No.	*Title*	*No.*	*Title*
0	Basic Standard (similar to IASB's framework)		
1	Inventories	20	Business combinations
2	Long-term equity investments	21	Leases
3	Investment properties	22	Recognition and measurement of financial instruments
4	Fixed assets	23	Transfer of financial assets
5	Biological assets	24	Hedging
6	Intangible assets	25	Direct insurance contracts
7	Exchange of non-monetary assets	26	Re-insurance contracts
8	Impairment of assets	27	Extraction of petroleum and natural gas
9	Employee compensation	28	Changes in accounting policies and estimates and correction of errors
10	Enterprise annuity fund	29	Events occurring after the balance sheet date
11	Share-based payment	30	Presentation of financial statements
12	Debt restructurings	31	Cash flow statements
13	Contingencies	32	Interim financial reporting
14	Revenue	33	Consolidated financial statements
15	Construction contracts	34	Earnings per share
16	Government grants	35	Segment reporting
17	Borrowing costs	36	Related party disclosure
18	Income taxes	37	Presentation of financial instruments
19	Foreign currency translation	38	First time adoption of Accounting Standards for Business Enterprises

Source: Deloitte Touche Tohmatsu, 2006b

2.4 International Financial Reporting Standards (IFRSs) and Chinese Accounting Standards (CASs): a comparison

The proponents of global accounting standards argue that the use of IFRSs would facilitate international trade, and enable the comparison of financial statements across countries by removing differences caused by different national accounting standards. This would reduce the cost of doing business and facilitate decision-making by international investors (Barthes, 1989).

However, standards developed by the IASB are primarily based on those for countries with highly developed capital markets, such as the US and the UK (Eccher and Healy, 2000). Thus, the MOF's approach is to establish a set of CASs suitable to China's needs, while striving toward convergence with IFRSs in an orderly manner.

In April 2005, Deloitte published a comparison of CASs and IFRSs (Deloitte Touche Tohmatsu, 2005). The main differences between these two accounting standards can be summarised into five categories as follows:

1. Differences between Chinese accounting regulations and IFRSs.

(a) Before 1998, Chinese accounting regulations restricted the allowance for doubtful debts to a proportion of accounts receivable prescribed by the state. For example, an allowance of 3% of the outstanding accounts receivable for enterprises with foreign capital; 1% for enterprises engaged in agriculture, construction and real estate development; and 0.3-0.5% for enterprises in other industries could be created. IFRSs do not impose such restrictions and managers use their judgement in making the allowances based on information available regarding the likely outcome of debt collection. Bad debts have been a major concern for companies operating in China, and a significant portion of trade debtors are overdue. Therefore, the allowances made based on the IFRSs were normally much greater than those based on domestic accounting requirements (Bao and Chow, 1999).

(b) Before 1998, Chinese accounting regulations required inventory to be reported at historic cost. However, according to IFRSs, inventory is reported at the lower of cost and net realisable value.

(c) Before 1998, Chinese regulations prescribed the straight-line method of depreciation with residual values ranging from 3% to 5% of the cost of a depreciable asset. An approval from the tax bureau was needed for adopting accelerated depreciation methods and the depreciation rate could not exceed 30%. According to IFRSs, depreciation for non-current assets should be provided on a systematic basis during the estimated useful life of the assets. Furthermore, several depreciation methods are allowed under IFRSs, with the estimated residual value and depreciation rates determined by management.

(d) Chinese regulations only allow for the use of a cost model to measure non-current assets. This is partly because China's market for second-hand assets and its valuation expertise are still in the formative stages. In contrast, IFRSs allows both the cost and revaluation models.

Note that the first three differences listed above were harmonised with IFRSs when the *Accounting System for Joint Stock Limited Companies* was revised in 1998. However, as the measurement for the non-current assets is still different, the depreciation amount will still be quite different under the two accounting standards.

2. Differences due to specific government policy.

For instance, according to the government policy, enterprises are required to provide for staff welfare at 14% of total salaries paid, regardless of the actual expenditure incurred. According to the IFRSs, such expenditure is charged as periodic expenses based on the amount incurred rather than paid (Bao and Chow, 1999).

3. Areas where the required practices by the CASs and IFRSs may not be different, but differences exist in professional judgement by domestic auditors and international auditors.

For example, both CASs and IFRSs require that sales revenue should be recognised when the risk and rewards of ownership of the goods are transferred to the buyer. However, inconsistencies might exist between local and international auditors in determining the timing of revenue recognition (Bao and Chow, 1999).

4. Certain accounting conventions applied in the IFRSs have not been adopted by the MOF.

An example of this is the use of fair value under IFRSs which is non-existent in China. This is due to the inexperience of the accounting profession and the virtual non-existence of valuation markets in China (Deloitte Touche Tohmatsu, 2006a).

5. Finally, differences arise where the MOF has either not developed a CASs, because of limited application in China (for example, hyperinflation), or where the MOF is currently developing new standards (Deloitte Touche Tohmatsu, 2006a).

Table 2.5 presents a summary of the major differences between CASs and IFRSs as well as a comparison of the differences before and after the 1998 regulation change. This table shows that the 1998 regulations resulted in significant progress in harmonising CASs with the IFRSs.

TABLE 2.5

Summary of differences between CASs and IFRSs

Items	*1992 Regulation*	*1998 Regulation*	*IFRSs*
Bad debts allowance	Allowance based on a government-approved percentage from 0.3% to 3%	Allowance determined by the management.	Same as the 1998 regulation.
Inventory valuation	Historic cost	Valuation based on the lower of cost or net realisable value.	Same as the 1998 regulation.
Depreciation for fixed assets	Straight-line with residual value averaging from 3% to 5% of costs; accelerated depreciation at the rate of not more that 30% needs approval from Tax Bureau.	Several methods allowed, estimated residual value and useful life determined by management.	Same as the 1998 regulation.
Revaluation of fixed assets	Not allowed.	Not allowed.	Revaluation is allowed.
Investment valuation	Both current and long-term investments valued at historical cost.	Current and long-term investments valued at lower of cost or market.	Same as the 1998 regulation, except that upward revaluations are allowed.
Amortisation of intangible assets	Minimum amortisation period is prescribed.	Amortisation period is determined by an estimate of the period over which the benefit accrues.	Same as the 1998 regulation, except for recognition of intangible assets with indefinite useful lives is also provided.
Staff welfare	Provision at 14% of total salaries paid is required. In addition, a fixed percentage of after-tax profit is transferred to reserve for staff welfare fund.	No change.	Amount incurred is recognised as expense in the income statement.
Consolidation	Consolidation required when more than 50% ownership is held.	Consolidation when there is more than 50% ownership or there is control over an enterprise.	Same as the 1998 regulation.
Equity/Cost method	Equity method used for more than 50% ownership.	Equity method required for 20-50% ownership.	Same as the 1998 regulation.
General recognition and measurement principles	Recorded at amount to be paid or received. Generally do not consider the effect of discounting on deferred payment.	No change.	Recorded at amount to be paid or received or at fair value, as appropriate. Discounting required for deferred payments.

Sources: Bao and Chow, 1999; Chen, Sun and Wang, 2002 and Deloitte Touche Tohmatsu, 2005

2.5 Chinese stock markets: recent developments, size and characteristics

There are two official national stock exchanges in China, namely, the Shanghai Stock Exchange (SHSE), which was established in 1990, and the Shenzhen Stock Exchange (SZSE), which was founded in 1991. There are three major classes of securities listed on the SHSE and the SZSE - namely, equities (A-shares which are held by Chinese citizens and B-shares issued to foreign investors), bonds (treasury, corporate, convertible bonds and bond repurchase) and close-end unit trusts.

Over the past 15 years, the sizes of the two stock exchanges have increased rapidly, especially with respect to the equities market. In 1991, there were only eight companies with A-shares listed on the SHSE and five companies (with A-shares) listed on the SZSE. By the end of 2004, the SHSE had 837 listed companies (783 companies issued only A-shares, 10 companies issued only B-shares, and 44 companies issued both A-shares and B-shares). Also, by the end of 2004, the SZSE had 540 listed companies (484 issued only A-shares, 14 companies issued only B-shares, and 42 companies issued both A-shares and B-shares).

The total market capitalisation of these two stock exchanges has also increased significantly. On the SHSE, market capitalisation grew from Renminbi (RMB)[9] 2.9 billion in 1991 to RMB 2.601 trillion in 2004 (SHSE Factbook, 2004). On the SZSE, market capitalisation grew from RMB 8 billion in 1991 to RMB 1.104 trillion in 2004 (SZSE Factbook, 2004). The total market capitalization of both stock exchanges reached RMB 3.705 trillion (about USD 447 billion) at the end of 2004, which is approximately 23% of China's GDP[10] for that year.

2.5.1 Domestic versus foreign shares

The shares issued by Chinese companies are classified as domestic (A-shares) and foreign (B-, H-, N-and L-shares). A- and B-shares are traded on the two stock exchanges within China, and the other types of shares (i.e. H-, N-and L-shares) are traded on other stock exchanges. Nevertheless, each type of these shares carries the same voting, dividend and liquidation rights in the issuing companies.

[9] The Chinese currency is officially called Renminbi, but is popularly known as Yuan.

[10] China's GDP for 2004 year was RMB 15.98 trillion (National Bureau of Statistics of China, 2006).

The majority of A-shares are issued by the SOEs to Chinese investors and can be classified into four categories based on ownership. These are: state shares, institutional shares, employee shares and tradable A-shares. On average, the state and institutional shares represent two-thirds of the total A-shares in issue, while the employee and tradable A-shares represent the remaining one-third.

The *state shares* are held by government through a designated government agency, and are not allowed to be publicly traded. The *institutional shares* are owned by domestic institutions including non-banking financial institutions such as mutual funds, trust and investment companies, insurance companies, finance companies and securities firms. Most of these institutions are partially owned by the central or local government[11]. These shares are traded only among the institutions through nationwide computer systems called Stock Trading Automated Quotation System (STAQS) or National Exchange and Trading Systems (NETS) in Beijing. The *employee shares* are offered to workers and managers of listed companies, usually at a substantial discount. After a holding period of 6 to 12 months, the company may file an application with the CSRC to allow its employees to sell the shares on the open market. Once sold on the market, they become tradable A-shares. On average, employee shares account for less than 2% of the total shares and act purely as an incentive scheme rather than providing a controlling interest. The *tradable A-shares* are held and traded mostly by individuals[12]. There is no restriction on the number of shares traded or on the minimum holding periods for the individuals. It is required however, that tradable A-shares account for no less than 25% of total outstanding shares when a company makes its Initial Public Offering (National People's Congress, 1993). These A-shares are the only type of equity that is traded among domestic investors on the two Chinese stock exchanges. The volumes reported by the two stock exchanges comprise only the tradable A-shares. With the specific aim of attracting foreign investors, selected SOEs were allowed in 1992 to issue shares called B-shares on the SHSE and SZSE. These are to be held

[11] The dominant position of non-tradable state and institutional shares in many listed companies has seriously hampered the reform of corporate governing structures in these companies (People's Daily, 2002a). Since 2001, the Chinese government has attempted to reduce these non-tradable shares. This was deemed crucial to enhance transparency and boost corporate profitability. However, progress has been slow (People's Daily, 2002a).

[12] In 2002, the CSRC allowed certain foreign institutional investors that satisfy designated requirements to invest in A-shares listed in Shanghai and Shenzhen. However, the requirements to be met are quite stringent, and each licensed foreign investor is only permitted to acquire up to 10% of A-shares in a domestic listed firm (People's Daily, 2002b).

exclusively by foreign investors, including the residents of Hong Kong and Taiwan[13]. Owners of B-shares have the same rights and bear the same obligations as holders of A-shares. All B-shares are denominated in RMB, however the Shanghai's B-shares are traded in, and their dividends are paid in, USD, while the Shenzhen's B-shares are traded in, and their dividends are paid in, Hong Kong Dollars (HKD). Individual investors are allowed to hold a maximum of 25% of a company's B-shares, but total foreign ownership is restricted to a maximum of 49% of a company's total issued shares.

Chinese enterprises started applying to list on the Hong Kong Stock Exchange (HKSE) as H-shares from the beginning of 1993. These enterprises are selected by the CSRC for their economic importance, profitability, management quality, technology and international significance (Sun and Tong, 2000). By February 2005, there were 109 companies with H-shares listed on the HKSE (TEJ Database).

N-shares are Chinese companies with a secondary listing on the New York Stock Exchange (NYSE) in the form of American Depositary shares and L-shares are Chinese companies with a listing on the London Stock Exchange (LSE). Both shares are denominated in RMB, but are quoted in USD on NYSE and Great British Pounds (GBP) on LSE. A summary of the major differences in the various types of shares issued by Chinese companies is presented in Table 2.6.

2.5.2 Some special characteristics of Chinese capital markets

As the A- and B-shares issued by a company have the same voting and distribution rights, they should, in theory, have the same value. However, in practice, the prices of these two types of shares have been significantly different, with B-share prices being

[13] However, in February 2001, with the aim of boosting the trading volume and improving the liquidity of the B-share market and converging the prices between A- and B-market, the State Council approved legislation that allows domestic investors with legal foreign exchange accounts to trade in B-shares. Due to this change, the SHSE and SZSE B-share market indices have risen two- and three-fold, respectively (Sun and Tong, 2003). However, the markets remain segmented because the foreign-currency market is tightly administered by the China Bank, and foreign investors have limited access to the A-share market (Sami and Zhou, 2004).

TABLE 2.6

Summary of the different types of shares issued by Chinese companies

Type of share	*Currency in which they are Traded*	*Stock Exchange on which they are traded*	*Shareholder Restriction*
A	RMB	SHSE or SZSE	Restricted to Chinese citizens
B	USD or HKD	SHSE or SZSE	Restricted to Foreign investors
H	HKD	HKSE	None
N	USD	NYSE	None
L	GBP	LSE	None

consistently much lower than those of A-shares. A number of researchers (Bailey, 1994; Chakravarty, Sarkar, and Wu, 1998; Fernald and Rogers, 1998; Poon, Firth and Fung, 1998; Bao and Chow, 1999; Fung, Lee and Leung, 2000 and Chen, Lee and Rui, 2001) have looked at this market segmentation on the Chinese market in an attempt to explain this phenomenon. They found that there is a distinct segmentation between the A-share and B-share market which prohibits an inter-flow of capital.

Upon further analysis, the main reasons for the discount of B-share prices seem to be the illiquidity[14] of the B-share market (Bailey, 1994 and Chen, Lee and Rui, 2001); asymmetrical information[15] in the B-share market (Chakravarty, Sarkar, and Wu, 1998) and differential demand elasticity[16] as suggested by Sun and Tong (2000).

However, Chen, Lee and Rui (2001) provide a different view. They argue that B-share prices reflect the market fundamentals more closely than A-share prices, while A-share prices are more likely to be driven by non-market fundamentals. Furthermore, A-share investors are likely to be following trends rather than making rational decisions with regards to buying and selling shares. Therefore, they conclude that A-shares are trading at a premium rather than B-shares trading at a discount.

Su (2003) agrees with Chen, Lee and Rui (2001). For the sample period 1997 to 1998, it was observed that most individual A-share investors have a short-term investment

[14] Most B-shares were held for long-term investment purposes, thus lower liquidity.

[15] This is because foreign investors find it more difficult than the domestic investors to acquire and access information about the local economy and firms due to language barriers, different accounting standards and lack of reliable information about the local economy and firms.

[16] This is because the H-shares are a close substitute for B-shares. China is perceived to be more politically uncertain than Hong Kong. Thus, for investors to buy B-shares rather than H-shares, they require an incentive in the form of a discounted share price.

horizon and tend to be speculative. These investors are either blind to a share's fundamentals or trade shares without using a firm's financial information correctly. In contrast, B-share investors are typically large institutional investors who hold the shares for long-term investment purposes, and are more rational in making decisions.

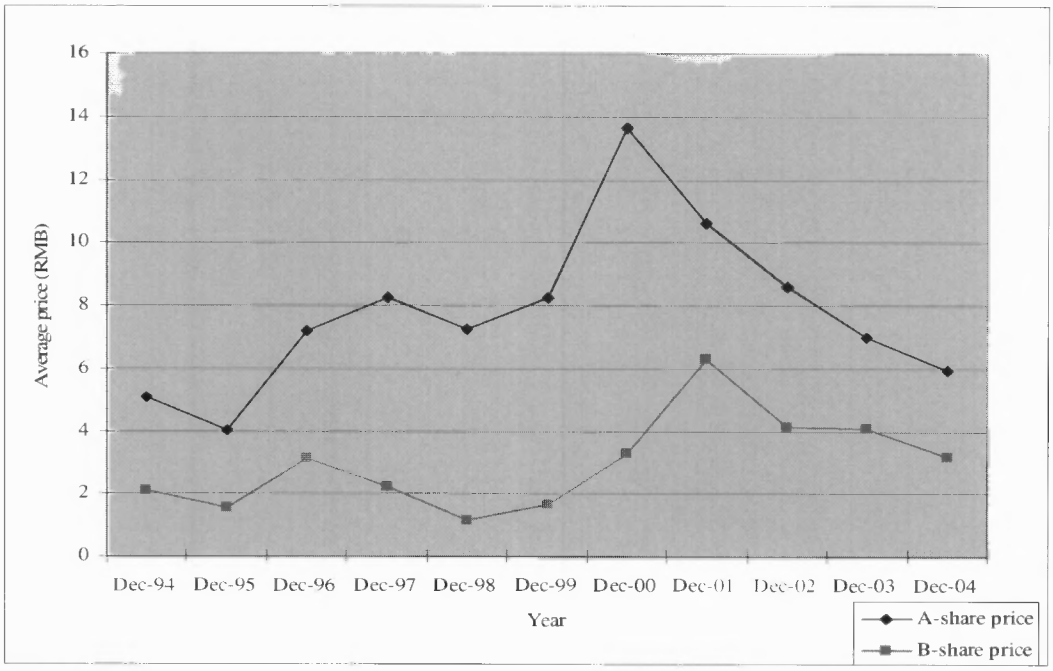
Another important aspect of the Chinese capital market is that the two stock markets can be regarded as efficient as the share prices follow the 'random walk theory'. More specifically, the returns on the Shenzhen and Shanghai stock exchanges cannot be predicted using their own history of share prices (Liu, Song and Romilly, 1997). However, collectively, they appear, at best, to be efficient in the weak form (Liu, Song and Romilly, 1997 and Chen and Sun, 2000 cited by Xiao, Yang and Chow, 2004).

The recent changes in the ownership structure of the shares on the stock markets, namely, floating the non-tradable A-shares, allowing certain local investors to hold B-shares and certain qualified foreign investors to hold A-shares (see footnotes 11, 12 and 13 on page 24) should slowly improve market efficiency, narrow the gap of segmentation, and in the long run should result in convergence of the share prices of A- and B-shares.

As can be seen from Figures 2.1 and 2.2, although A-share prices are constantly above B-share prices, differences between A- and B-share prices have indeed narrowed. This is evident in the years 2001 to 2004, during which there is a notable decrease in the differences to below 100%. The substantial price difference in 1998 between A-shares and B-shares, as indicated by Figure 2.2, could be the effect of the Asian financial crisis. Despite the fact that China survived the crisis due to healthy foreign reserves, low foreign debt and strong domestic demand (Fernald and Babson, 1999), Figure 2.1 reveals that the average B-share price in 1998 is at its lowest point on the graph. This indicates that the foreign investors reacted negatively to the event. In contrast, although the A-share price also decreased, it did not fall as much as the B-share price. This could indicate information asymmetry between these two classes of investors. That is, A-share investors might be more informed about the status of the economy in China than their B-share counterparts.

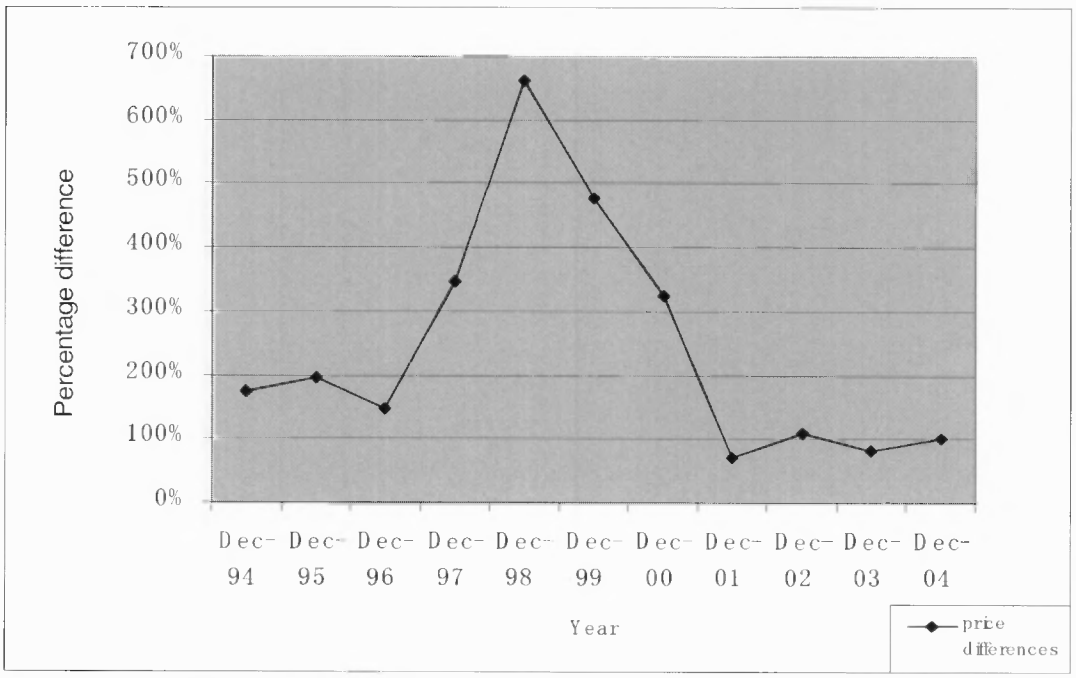
Another observation on Figure 2.1 is the noticeable peak in share prices in 2000 for A-shares and in 2001 for B-shares. As mentioned in sub-section 2.2.3, the major

FIGURE 2.1
Share price comparison between A- and B-shares on the SHSE and SZSE: 1994 to 2004



Based on data obtained from the Taiwan Economic Journal (TEJ) database

FIGURE 2.2
Share price differences between A- and B-shares on the SHSE and SZSE: 1994 to 2004



Based on data obtained from the TEJ database

events such as the accession to the WTO and winning the right to host the 2008 Olympic Games occurred in 2001 and significantly boosted investors' confidence in the Chinese market. On the one hand, the effect of these events was reflected positively on the A-share prices in 2000 which most probably was due to information prior to 2001 that China would join the WTO as well as speculation that it would host the 2008 Olympics Game. On the other hand, the effect of these events was only reflected in the B-share prices in 2001 (the year in which the events occurred). This finding seems to support the information asymmetry theory proposed by Chakravarty, Sarkar, and Wu (1998), suggesting that the B-share investors find it more difficult than the domestic investors to acquire and access information about the local economy. Alternatively, it may also suggest that A-share investors are more speculative than B-share investors. Thus, the A-share investors tend to focus on short-term gains and follow rumours or trends in pricing their shares. This suggestion is also supported by Chen, Lee and Rui (2001) and Su (2003).

2.6 Financial reporting regulations for listed companies

A number of financial reporting regulations applicable to listed companies have been promulgated by the CSRC since 1993. These specify the content and format of the prospectus, interim reports and annual reports (CSRC, 1993, 1995, 1996 and 1997). According to these regulations, a company should prepare an annual report by the 30th of April of the year following its financial year end[17]. The financial statements in the annual report should be prepared in compliance with relevant accounting regulations and standards issued by the MOF, and should be audited by a designated Certified Public Accountants (CPA) firm that is authorised by the CSRC to audit listed companies.

The annual report for a public-listed company typically consists of the following sections:

1. a brief introduction of the company,
2. a 3-year summary of accounting and operations data,
3. chairman or managing director's statement,
4. the directors' report,

[17] All Chinese companies are required to use the calendar year as their financial year.

5. financial statements (consist of a balance sheet, an income statement, a cash flow statement, notes and attached schedules),
6. statement of material events,
7. description of related companies, and
8. notice of the annual shareholders' meeting.

In practice, the disclosures in the annual reports of most listed companies are kept very brief. Su (2003) has identified the following seven major characteristics in Chinese companies' annual reports:

1. The focus is on the company's short-term objectives and strategies.
2. There is an emphasis on disclosure of technological innovation.
3. Although discussion is required of the company's immediate industry, the wider political, social and demographic context is largely neglected.
4. An emphasis is placed on reporting material events and legal proceedings.
5. Business opportunities and risks do not feature as important.
6. Little emphasis is placed on the competitive market forces that influence the company's businesses.
7. The requirements for financial statements are relatively simple.

The reason for the disclosure mentioned above might be because the major stakeholder of most of these companies is the Chinese government which is familiar with the environment in which these firms operate.

Listed companies that issued A-shares are required to publish summaries of CASs-based financial statements in at least one of the securities newspapers, or a journal selected by the CSRC[18], by the 30th of April of the year following its financial year end. Apart from publishing summarised financial statements, listed companies are also required to: (a) submit copies of full reports to the various government agencies, regulatory bodies, banks and financial institutions, and (b) keep copies at their headquarters for review by investors.

Furthermore, companies issuing B-shares should also prepare IFRSs-based financial statements in accordance with IFRSs and publish them in an overseas (including Hong Kong) newspaper either in Chinese or English. This should be done on the same day

[18] There are seven securities newspapers and one journal selected by the CSRC for this purpose. They are: *China Securities News, Shanghai Securities News, Securities Times, Financial Times, Economic Daily, China Daily, China Reform,* and *Security Markets Weekly.*

that the summarised CASs-based financial statements are published in Chinese newspapers. If such a company issued both A- and B-shares, a summarised reconciliation between the two sets of accounting earnings is required along with the summarised CASs-based financial statements in the local newspaper. This reconciliation is released to the A-share investors only, but not B-share investors.

As a result of the narrowing of the differences between CASs and IFRSs especially after 1998 (see section 2.4), the difference between CASs-based earnings and IFRSs-based earnings is expected to decrease as well (Chen, Gul and Su, 1999). However, as revealed by Figures 2.3 and 2.4, in practice, there is no significant reduction in the earnings gap after the 1998 regulation change. The large earnings differences in 2001 and 2002 as shown on Figure 2.4 could be due to the unfamiliarity of preparers of CASs-based financial statements with the new CASs which became effective in those years (see section 2.3). Interestingly, the earnings gap appears to have actually reversed after 2002. On average, the CASs-based earnings are higher than the IFRSs-based earnings. Chen, Sun and Wang (2002), argue that this continual earnings gap is due to the lack of rigorous implementation and effective enforcement of the new accounting standards[19]. Specifically, they find that, the persistent earnings difference is due to earnings management[20] and lack of quality auditing of the CASs-based financial statements.

The auditing of financial statements of Chinese listed companies depends on whether the statements are based on CASs (for A-shares) or IFRSs (for B-shares). Financial statements prepared under CASs are audited by Chinese auditors, while statements prepared under IFRSs are audited by the Big Four[21] international accounting firms or large Hong Kong firms. However, as IFRSs are considered to be of higher quality than CASs, and international auditors such as the Big Four firms are thought to provide higher quality audits than their Chinese counterparts, the financial statements prepared under IFRSs are usually considered to be more reliable than the statements prepared

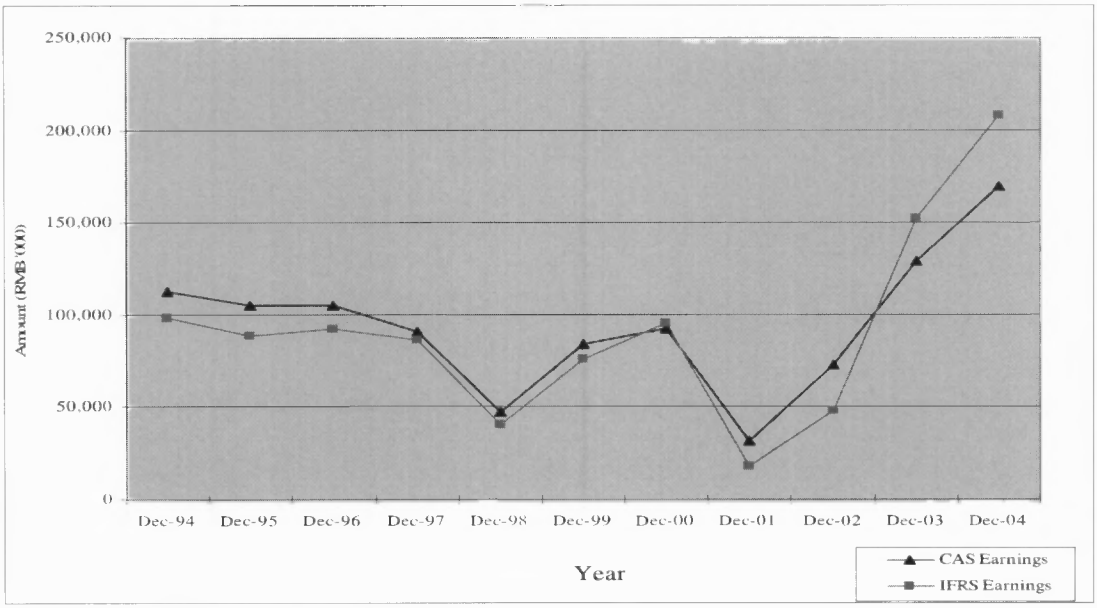
[19] For example, anecdotal evidence in Chinese newspapers shows that bad debts allowances and inventory valuations were still reported as the primary factors for the earnings gap in 2000 (Guo, 2001, cited in Chen, Sun and Wang, 2002).

[20] The controlling shareholders (i.e. government agencies) of listed companies and securities regulators evaluate the performance of the company based on CASs-based financial statements rather than IFRSs-based financial statements.

[21] The Big Four international auditing firms are: PricewaterhouseCoopers, Ernst and Young, Deloitte and KPMG.

FIGURE 2.3

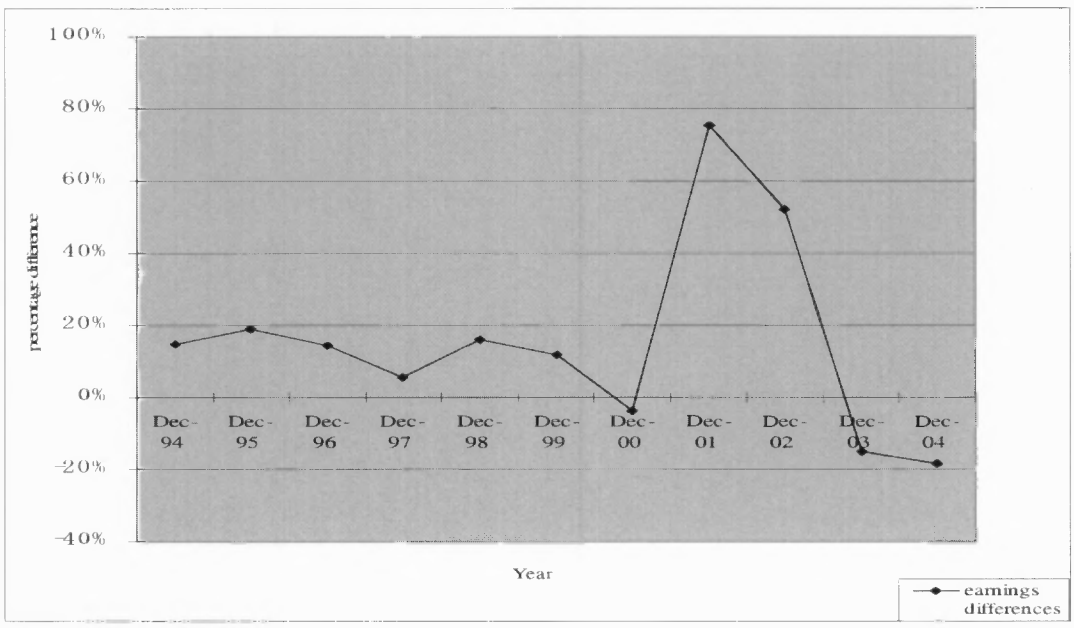
Average earnings reported under CASs versus IFRSs on the SHSE and the SZSE: 1994 to 2004



Based on data obtained from the TEJ database

FIGURE 2.4

Earnings difference between CASs and IFRSs on the SHSE and the SZSE: 1994 to 2004



Based on data obtained from the TEJ database

using CASs (Defond, Wong and Li, 2000). In early 2006, the MOF adopted 48 new Chinese Auditing Standards that are similar to the International Standards on Auditing issued by the International Auditing and Assurance Standards Board (Deloitte Touche Tohmatsu, 2006b). These new auditing standards should enhance the quality of audit work by Chinese Certified Public Auditors and thus, improve the reliability of the financial statements audited by the local auditing firms.

Listed Chinese firms are also required to make timely disclosures of significant events that may have material impact on their share prices, as stipulated in the *Provisional Regulations on the Administration of the Issuing and Trading of Stock*. However, anecdotal evidence indicates that most firms tend to delay the disclosures of significant events until the release of annual reports. While listed firms are required to provide semi-annual reports by the end of August, it is not mandatory that they be audited. As a result, the annual report has become the most significant and reliable source of information on listed Chinese firms for domestic and foreign investors (Haw, Qi and Wu, 2000).

In order to strengthen the governance of the listed companies, the CSRC and the State Economic and Trade Commission (SETC) jointly issued the *Code of Corporate Governance*[22] for listed companies during 2001. Further, in 2003, the CSRC revised its *Form and Content Standard No.2* for corporate annual reports which requires, *inter alia*, that managers and financial executives guarantee in writing that the information contained in the financial reports is true and complete (Deloitte Touche Tohmatsu, 2006b).

Other regulations include the *Financial Rules for Business Enterprises*, promulgated in 1992, which prescribes detailed accounting practices such as the accounting measurement and methods to be used for each asset and liability. There is also the *Financial Accounting and Reporting Rules for Enterprises*, which was issued by the State Council in 2000. It focuses on such financial accounting and reporting matters as bookkeeping, preparation of financial statements and reporting practices.

The main regulations affecting listed companies in China are listed in Table 2.7.

[22] For a detailed copy of the code of corporate governance, please visit the following site: http://www.csrc.gov.cn/en/jsp/detail.jsp?infoid=1061968722100&type=CMS.STD

TABLE 2.7

Major regulations governing financial disclosure of listed companies in China

Authority	*Regulations*	*Effective Date*
National People's Congress (NPC)	Accounting Law (amended 2000)	21-Jan-1985
	Company Law	1-Jul-1994
	Securities Law	1-Jul-1999
State Council	Provisional Regulations on the Administration of the Issuing and Trading of Stock	22-Apr-1993
	Provisional measures on Prohibition of Falsification in Securities Transactions	15-Aug-1993
	Financial Accounting and Reporting Rules for Enterprises	Since 2000
The Ministry of Finance (MOF)	Accounting System for Joint Stock Limited Enterprises (JSLEs) (amended 1998)	From 1-July-1992 to 1-Jan-2001 as replaced by 2001 ASBE
	Accounting System for Foreign-Invested Enterprises (FIEs)	From 1-July-1992 to 1-Jan-2001 as replaced by 2001 ASBE
	Accounting Standards for Business Enterprises (ASBE)(amended 2001)	1-Jul-1993
	Financial Rules for Business Enterprises	1-Jul-1993
	Detailed Accounting Standards	Since 1993
China Securities Regulatory Commission (CSRC)	Detailed Implementation Rules for Information Disclosure by Public Companies	10-Jun-1993
	Standards for Content and Format for Information Disclosure by Public Companies No.1-7	Since 1995
	Code Of Corporate Governance for Listed Companies	7-Jan-2001
Shanghai Stock Exchange (SHSE)	Guidelines on Information Disclosure of the Listed Companies	Since 1990
	Guidelines on the Operation of the Listed Companies	Since 1995
Shenzhen Stock Exchange (SZSE)	Rules on Information Disclosure of the Listed Companies	Since 1993

Source: Su, 2003

2.7 Summary

Environmental factors are very important in shaping the development of a suitable accounting system in China. Historically, Chinese accounting has gone through many changes driven mainly by its political and economic changes.

The Chinese accounting system has evolved from a traditional cash-based system in ancient times, to the UAS used in the centrally planned economy, when the CCP took over the control of China in 1949. Following the economic reform in 1979, which focused on economic reconstruction and sought to attract foreign capital, the accounting system changed again to one similar to that of a market economy.

The current accounting standards in China have been developed with the aim of converging towards the IFRSs and this development is a continuing process. Starting in 1992, the ASBE, the *Accounting System for Joint Stock Limited Enterprises* and the *Accounting System for Foreign-Invested Enterprises* were developed as conceptual frameworks for different types of enterprises. In 1998, to enhance harmonisation with international practices, the *Accounting System for Joint Stock Limited Enterprises* was revised to allow for management judgement in accounting estimates, such as the determination of allowances for doubtful debts, depreciation on fixed assets and inventory valuation. In order to further converge with IFRSs, a new ASBE was promulgated in 2001, which replaced the *Accounting System for Joint Stock Limited Enterprises* and the *Accounting System for Foreign-Invested Enterprises.* This 2001 ASBE: (a) is applicable to most business enterprises in China, and (b) is essentially a conceptual framework, which provides little guidance on how to account for complex business transactions. Since 1993, detailed accounting standards have been developed under the guidelines of the ASBE and based on IFRSs with adaptations in areas to suit China's special circumstances. Due to the difficulties of implementation and major changes to the IFRSs, only 16 CASs had been issued by the end of 2005. However, in a recent joint press release by the MOF of China and the IASB, it was announced that the CASs will converge with the IFRSs in early 2007 and 38 new standards are expected to be issued and become effective in 2007.

Despite the efforts to converge with IFRSs, through modifications to CASs, certain differences exist between CASs and IFRSs. The major differences between these two

sets of accounting standards are due to:

- Differences between Chinese accounting regulations and IFRSs (which have been largely narrowed after 1998);
- Specific government policies imposed on Chinese firms;
- Differences in professional judgements by domestic auditors versus those by international auditors even though the requirements of the statement under both CASs and IFRSs are the same;
- The non-application of certain accounting conventions in the Chinese market, such as the non-use of the fair value model due to the lack of a valuation market for second hand goods and
- Differences in areas where standards are still to be developed.

The Chinese stock markets developed rapidly after the economic reform of 1979. Two types of shares are traded on the stock exchanges, namely, A-shares, which are issued to Chinese citizens only, and B-shares which are issued to foreign investors. Due to the segmentation in the A-share and B-share markets, the B-share prices are usually traded at a discount relative to A-share prices. Various researchers have argued that the reason B-share prices are traded at a discount could be as a result of illiquidity, or information asymmetry in the B-share market or due to differential demand elasticity or a combination of these factors. However, other researchers such as Chen, Lee and Rui (2001) and Su (2003) argue that A-shares are trading at a premium, and B-shares are fairly priced as foreign investors are more knowledgeable and rational than domestic investors. Empirical evidence (provided in this study) reveals that the differences in the A- and B-share prices have narrowed in recent years. This phenomenon could be a result of the recent changes in the ownership structure of the shares on the stock markets, namely, allowing certain local investors to hold B-shares and certain qualified foreign investors to hold A-shares. The other characteristic of the Chinese stock markets is that they appear to be efficient in the weak form.

Due to the existence of the two types of investors in the Chinese stock markets, two sets of financial reports are required to be prepared. Financial reports prepared under CASs are reported to the A-share investors, and financial reports based on IFRSs are prepared for B-share investors. In addition, reconciliations between the CASs-based earnings and IFRSs-based earnings are required to be published in a local newspaper for companies issuing both A- and B-shares. This provides a unique opportunity that

allows one to investigate the value relevance of accounting information based on the two sets of accounting standards. The next chapter reviews the prior studies in this area.

Chapter 3
PRIOR STUDIES ON VALUE RELEVANCE

3.1 Introduction

The previous chapter highlighted the historic development of the Chinese accounting system and standards as well as the main characteristics of the Chinese stock markets. A unique characteristic of the Chinese market is that when a company issues both A- and B-shares, two sets of financial statements are required to be issued. CASs-based financial statements are prepared for A-share investors, while IFRSs-based financial statements are prepared for B-share investors.

Therefore, China provides a unique situation for the examination of the value relevance (or information content) of accounting information. For example, (a) examining the value relevance of CASs-based accounting information in relation to A-share prices/returns, and IFRSs-based accounting information in relation to B-share prices/returns; (b) investigating the relative value relevance between CASs-based and IFRSs-based accounting information; and (c) studying the incremental value relevance of IFRSs-based accounting information over CASs-based information for A-share and B-share prices/returns.

The remainder of this chapter is arranged as follows: section 3.2 describes the objective of financial statements, section 3.3 discusses the definition and interpretation of the term 'value relevance'; thereafter, section 3.4 reviews the prior literature on value relevance by examining studies done in both developed and developing countries and finally focuses on the limited research literature on the Chinese market. Section 3.5 concludes this chapter.

3.2 The objective of financial statements

According to paragraph 12 of the Framework for the Preparation and Presentation of Financial Statements (IASB, 2005, p. 38), "the objective of financial statements is to provide information about the financial position, performance and changes in financial position of an entity that is useful to a wide range of users in making economic decisions." This objective of decision usefulness: (a) represents a departure from what

Matthew et al. (1991) refer to as the traditional or classical stewardship objective; and (b) is broad (in that it incorporates the stewardship objective and relates to a wide range of users: investors, creditors, managers, employees, customers, the public, governments and their agencies). This change has generated interest (among academic and professional accountants as well as regulatory authorities such as governments, securities exchanges and accounting standard setting bodies) in research that seeks to measure the usefulness of accounting information.

Campbell (1984) suggests five approaches in measuring the usefulness of accounting information. These approaches are:

1. To study the perceptions of the usefulness of information. This is usually done using research methods such as surveys and interviews with users of the financial statements (for example, Chang and Most, 1985).
2. To study the predictive ability of the information. An example of this is the use of financial information to predict future cash flows.
3. To study the utilisation of information items in decision processes. This is typically done using protocol analysis through interviews with the users of the financial statements (for example, Campbell, 1984).
4. To study the value of information (in an economic sense) as measured by improvement in performance. This would be more relevant to a management accountant, who might use the improvement in performance of a particular division as a measure of the value of the accounting information (e.g. return on investments), and
5. To study 'information content' as indicated by either capital market reactions or association tests.

This last approach, also known as the value relevance or market relevance of accounting information, is the approach adopted in this dissertation.

3.3 Definition and interpretation of value relevance

The term value relevance (market relevance or information content) is defined as: 'the relevance of financial statement information to investors for valuation purposes' (Francis and Shipper, 1999, p. 319).

Francis and Shipper (1999) suggest several interpretations in measuring the value

relevance of financial information. These are as follows (pp.325-326):

> *"Interpretation 1, financial statement information leads stock prices by capturing intrinsic share values toward which stock prices drift. Value relevance would then be measured as the profits generated from implementing accounting-based trading rules.....*
>
> *Interpretation 2, financial information is value relevant if it contains the variables used in a valuation model or assists in predicting those variables.....*
>
> *Interpretation 3, the statistical association measures whether investors actually use the information in question in setting prices, so value relevance would be measured by the ability of financial statement information to change the total mix of information in the marketplace.....*
>
> *Interpretation 4, a statistical association between accounting information and market values or returns, particularly over a long window; might mean only that the accounting information in question is correlated with information used by investors.*

Interpretation 1 assumes that accounting numbers reflect the intrinsic values of the share while share prices do not. This assumption is based on evidence from the stock market indicating that the market behaves irrationally, which distorts the realistic values of companies. An example of this is the "Internet Bubble" in the late 1990's. Despite the accounting numbers of many internet companies indicating no profits earned, the share prices of the companies were very high (Malkiel, 2003). However, this interpretation is not used in this dissertation because numerous adjustments for shifts in risk over time (some are often unable to be adjusted for appropriately) have to be made in carrying out the tests under this assumption. Examples of the use of this interpretation can be found in Ou and Penman (1989a, 1989b) and Harris and Ohlson (1990).

Interpretation 2 focuses on the ability of earnings to predict future dividends, future cash flows, future earnings, or future book values. These are then used as variables in the discounted dividend valuation model, discounted cash flow model, or a discounted

residual income model (Francis and Shipper, 1999). However, as a typical emerging market, the Chinese capital market does not (as yet) possess the skills in predicting this forecasted information and thus this interpretation is not used in this dissertation.

Francis and Shipper (1999, p. 325) suggest that "interpretation 3 implies that value relevance is measured in terms of 'news', implying that value-relevant information changes stock prices because it causes investors to revise their expectations." The earliest study using this interpretation can be dated back almost 40 years. Ball and Brown (1968, p. 161) state: "an observed revision of stock prices associated with the release of the income report would thus provide evidence that the information reflected in income numbers is useful." There have been a number of studies done on the Chinese market using this interpretation (for example, Abdel-Khalik, Wong and Wu, 1999; Haw, Qi and Wu, 2000; Gao and Tse, 2001 and Su, 2003). However, this interpretation is not used in this dissertation since earnings expectations on Chinese companies are difficult to obtain, and the method used for testing this interpretation involves the use of estimates (i.e. earnings expectations). These estimates may not be accurate as there is very little analyst coverage of companies on the Chinese stock markets (Eccher and Healy, 2000).

With regard to the fourth interpretation, Francis and Shipper (1999, p. 327) state: "value relevance is measured by the ability of financial statement information to capture or summarize information, regardless of source, that affects share values." This is the interpretation adopted in this dissertation. It is also the focus of many researchers in the field of value relevance studies (see for example, Lev and Zarowin, 1999; Francis and Shipper, 1999; Sami and Zhou, 2004 and Bao and Shah, 2005). This interpretation is also espoused by Barth, Beaver and Landsman (2001 p. 80), who suggest that the major purpose of value relevance research is "to extend our knowledge regarding the relevance and reliability of accounting amounts as reflected in equity values."

Tests of the value relevance of competing financial information (as is the case in this dissertation) can be divided into two types. These are tests for incremental information content, and tests for the relative information content of the competing financial information.

Biddle, Seow and Siegel (1995, p. 3) define the distinction between incremental and

relative information content as:

> *"Incremental information content comparisons assess whether one accounting measure (or set of measures) provides information content beyond that provided by another. Relative information content comparisons ask a subtly different question, which is whether one measure provides greater information content than another."*

For this dissertation, the focus is on relative information content only since the objective of CASs is to converge with IFRSs. Therefore, it is more interesting to see which set of accounting information (CASs-based or IFRSs-based financial statements) produces more value relevant information.

3.4 Prior empirical studies on value relevance of accounting information

With the trend of increasing global economic activities, more and more companies are seeking listings on foreign stock exchanges in order to gain access to foreign capital. Hence, studies comparing the usefulness of financial statements prepared in accordance with local Generally Accepted Accounting Practices (GAAP) or a more widely recognised GAAP such as IFRSs or US GAAP have become prevalent over the years, both in developed and developing markets. In particular, prior empirical studies have examined the value relevance of financial statements' items such as accounting earnings, book value of equity, operating cash flows and accruals. The rest of this section reviews prior empirical studies on value relevance under these sub-sections, namely: prior empirical studies of value relevance in developed countries, studies in developing countries and those done on the Chinese market.

3.4.1 Prior empirical studies on value relevance in developed countries

The information content of reported earnings and its components has been a major focus of accounting research since the late 1960s in the developed countries (for example, Ball and Brown, 1968; Beaver, Clark and Wright, 1979; Bowen, 1981; Lipe, 1986 and Fairfield, Sweeney and Yohn, 1996). These studies find positive associations between share returns and reported earnings or some specific components of earnings.

More recently, the examination of value relevance of accounting information has been

expanded to include balance sheet measures of assets and liabilities (Lansman, 1986; Eccher, Ramesh and Thiagarajan, 1996 and Burgstahler and Dichev, 1997). The most popular method used in the study of the value relevance of accounting information is the price model based on the theoretical work by Ohlson (1995), which examines the association between book value of equity and equity valuation. This valuation model is based on the clean surplus accounting assumption[23], which is a linear additive function of earnings and book values of equity. The essence of the model is that book value represents a share's measure of value, while earnings measures increments to book value (Bauman, 1996).

Using the Ohlson (1995) model, some recent studies report a steady decline in the value relevance of earnings over time, but report an increase in the relevance of book value information (Collins, Maydew and Weiss, 1997; Ely and Waymire, 1999; Lev and Zarowin, 1999 and Francis and Shipper, 1999).

However, in their study, Collins, Maydew and Weiss (1997) find that, over a period of forty years, the combined relevance of earnings and book values have increased slightly. Furthermore, the studies by Ely and Waymire (1999) and Francis and Shipper (1999) conclude that there is no consistent evidence that the combined value relevance of earnings and book values has declined over time. Lev and Zarowin (1999) (who covered a much shorter period of 19 years) find a systematic decline in the combined relevance of earnings and book value. They suggest that the reason for their different finding is most probably due to the difference in the examined periods. Nevertheless, these studies suggest that both the balance sheet and the income statement contain information that is value relevant in the U.S. market.

Some studies have tested for the information content of earnings and cash flows (Rayburn, 1986; Wilson, 1986, 1987; Biddle, Seow and Siegel, 1995 and Cheng, Liu and Schaefer, 1997). The results are generally consistent and show that both cash flows and earnings provide incremental information content. There is also evidence that discretionary accruals have incremental information content in the mature market of the US (Subramanyam, 1996). In contrast, Bernard and Stober (1989), find little evidence that either operating cash flows or accruals have incremental information

[23] The clean surplus assumption provides that changes in book value of equity are equal to earnings minus dividends.

content. Dechow (1994) examines the relative ability of each measure (that is, earnings and cash flows) in reflecting firm performance. She concludes that earnings better summarise firm performance, as cash flows are predicted to suffer more severely from timing and matching problems that reduce their ability to reflect firm performance.

Other studies have also examined the incremental and relative value relevance of foreign GAAP earnings versus earnings adjusted to US GAAP by foreign companies with shares, or American Depository Receipts (ADRs) traded in US exchanges (Pope and Rees, 1992; Amir, Harris and Venuti, 1993; Bandyopadhgay, Hanna and Richardson, 1994; Harris, Lang and Moller, 1994; Barth and Clinch, 1996 and Chan and Seow, 1996). These studies generally conclude that earnings based on domestic GAAPs have information content. However, the results of these studies provide mixed evidence on the value relevance of earnings reconciliations from non-US to US GAAP. Alford, Leftwich and Zmijewski (1993) find that foreign GAAP earnings in some countries are more timely or value relevant than earnings based on US GAAP. They argue that it is doubtful that one set of accounting standards is optimal for companies in all countries since the characteristics of investors differ across various capital markets.

Furthermore, some studies have examined the value relevance of local GAAP relative to IFRSs (Niskanen, Kinnunen and Kasanen, 1994, 2000; Auer, 1996 and Harris and Muller, 1999). The results again are mixed. Niskanen, Kinnunen and Kasanen (1994) and Auer (1996) find that IFRSs-based earnings have higher incremental information content than local GAAP in Finland and Switzerland, respectively. However, Harris and Muller (1999) and Niskanen Kinnunen and Kasanen (2000), find that the earnings under local accounting standards (i.e. US GAAP and Finnish accounting standards) are more highly associated with stock returns than IFRSs amounts.

3.4.2 Prior empirical studies on value relevance in developing countries

There have always been debates and doubts about the relevance of IFRSs in developing countries (for example, Perera, 1985, 1989 as cited in Chamisa, 2000). The findings below, however, confirm the value relevance of IFRSs in a number of developing countries.

Jermakowicz, and Gornik-Tomaszewski (1998) examine the information content of

earnings, derived from the new accounting standards[24], in the emerging capital market of Poland for the period 1995 to 1997. They find that the annual earnings reported according to the new accounting rules by listed firms on the Warsaw Stock Exchange are significantly correlated with share prices.

Graham and King (2000) employ the Ohlson (1995) model (or price model) to investigate the value relevance of earnings and book values in six Asian countries, namely, Indonesia, Korea, Malaysia, the Philippines, Taiwan, and Thailand[25]. They find that earnings and book value are positively and significantly related to stock prices across all six countries. However, their results also show significant differences across the six countries, which are generally consistent with accounting practice differences.

Jindrichovska (2001) investigates the relationship between accounting numbers based on IFRSs and share returns in the transitional economy of the Czech Republic. Despite the relative illiquidity of the Czech market compared to markets in the developed countries, he finds that there is a significant relationship between the stock returns and annual earnings of the companies listed on the Prague Stock Exchange.

Bao and Shah (2005) extend the work done by Graham and King (2000), by examining the accounting differences on value relevance in seven Asian countries (Hong Kong, Singapore, Indonesia, Korea, Malaysia, the Philippines, and Thailand) using a ranking method suggested by Basu, Hwang and Jan (1998). They find that the value relevance in the less developed markets such as Malaysia and the Philippines is higher than in the more developed markets such as Hong Kong and Singapore. They argue that the investors in the less developed markets might not have access to reliable information, other than the financial statements, to help their investing decisions. Thus, the financial statements contain more relevant information for these investors than the investors in the more developed markets. Overall, the findings indicate that the causes of the value relevance differences among these countries are: accounting standards and their interpretations, applications and enforcements.

El Shamy and Al-Qenae (2005) investigate the change in the value relevance of

[24] In 1995, Poland's accounting law was changed to be fully compliant with the European Union regulations.

[25] The accounting standards developed in these countries are partly based on IFRSs or US GAAP.

earnings and book values in equity valuation over the last 20 years (from 1980 to 2001) in Kuwait. They find that earnings and book values combined or individually, have significant explanatory power for share prices in Kuwait. Consistent with international studies, the combined value relevance of earnings and book values has increased over time, especially since the adoption of IFRSs in 1990.

The findings on the various developing capital markets that have adopted IFRSs generally support the value relevance of IFRSs in those markets.

3.4.3 Prior empirical studies on value relevance on the Chinese market

Over the past decade, there has been increasing interest in accounting research on the Chinese market. Some studies focus on the value relevance of CASs-based accounting information in relation to the A-share prices, whilst other studies emphasise the relative value relevance between CASs-based and IFRSs-based information. This increased interest in value relevance research in China arose mainly as a result of the opening of the two stock exchanges in the 1990s and the increased international activities which caused the Chinese government to revise its accounting systems to be in line with international standards.

A number of recent studies have examined the value relevance of accounting information, under CASs in relation to the A-share prices. Generally, the findings are that accounting information based on the Chinese accounting standards is value relevant, and that these results are comparable to similar studies in other markets (as discussed in sub-sections 3.4.1 and 3.4.2).

Haw, Qi and Wu (1999) examine the information content of earnings in China using a return model (this model is consistent with the specification used in Easton and Harris, 1991, and Chan and Seow, 1996, where stock returns are regressed on earnings and changes in earnings), and find that CASs-based earnings are value relevant in relation to A-share returns.

Chen, Chen and Su (2001) focus on both the income statement and the balance sheet, and examine the value relevance of both earnings and book values of equity using the return model and the price model. For the period 1990 to 1997, their findings provide

evidence that both book values of equity and earnings based on CASs are value relevant to the A-share market. This is true for both the pooled regression[26] and the year-by-year regression[27]. The empirical results of previous studies in the US (for example, Easton and Harris, 1991; Alford, Leftwich and Zmijewski, 1993 and Collins, Maydew and Weiss, 1997) and the results from Chen, Chen and Su (2001) are generally comparable. Furthermore, Chen, Chen and Su (2001) also find that accounting information appears to be more value relevant for firms issuing both A- and B-shares than for firms issuing only A-shares.

Haw, Qi and Wu (2001) study the relative and incremental information content of earnings, accruals and operating cash flows based on CASs. Consistent with the international studies, they find that earnings have relative information content greater than that provided by operating cash flows. Furthermore, they find that discretionary accruals provide incremental information beyond that contained in nondiscretionary accruals. This leads to their conclusion that discretionary accruals improve the relevance of earnings in reflecting the fundamental values of listed Chinese companies.

To date, the author is only aware of four studies that examine the relative or incremental value relevance of CASs- and IFRSs-based accounting data in the Chinese capital markets. The results reported provide mixed evidence. The reasons for these mixed results could be due to the fact that the different studies use different data sets and different testing methods.

Bao and Chow (1999) employ the Ohlson model and conduct association tests between B-share prices and the earnings and the book values of equity under the two sets of accounting information: one based on CASs and the other on IFRSs. The Davidson-MacKinnon J-test is used to assess which of the two sets of accounting information is more closely associated with the share prices. For the period 1992 to 1996, Bao and Chow (1999) find that earnings and book values of equity, based on IFRSs, have greater relative information content than the CASs-based measures. In

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[26] A pooled regression is one in which time series and cross-sectional observations are combined or pooled together. The basic motivation for a pooled regression is that if the model is properly specified, pooling provides more efficient estimation, inference and possibly prediction (Gujarati, 1995, p. 523).

[27] A year-by-year regression or a cross-sectional regression, examines the regression for a particular year across all firms in the sample. In contrast, a time series regression examines the regression of each firm across all the years.

addition, the results of yearly regression analysis generally suggest that the explanatory power of the IFRSs-based earnings and book values (in terms of share prices) increased over time.

Eccher and Healy (2000) examine the relative value relevance of the two sets of accounting information (CASs- and IFRSs-based) for both A-share and B-share returns using various return models. Using a sample of firms issuing both A- and B-shares between 1993 and 1997, they investigate the value relevance of both earnings and components of earnings (i.e. accruals and cash flows). The results suggest that both sets of earnings and components of earnings are highly correlated with both A- and B-share returns. When comparing the relative value relevance of the two sets of accounting information using the Vuong (1989) test[28], A-share returns are more highly related to the CASs-based earnings than to IFRSs-based earnings. In contrast, for B-share returns, the explanatory power of CASs-based earnings is indistinguishable from that of IFRSs-based earnings. Eccher and Healy (2000) conclude that for the B-share market, information produced using IFRSs is no more useful than that prepared using CASs. They argue that the reason is probably the absence of effective controls and infrastructure in China to monitor the additional reporting judgement available to managers under IFRSs.

Chen, Firth and Kim (2002) employ both a modified Ohlson (1995) model and a modified return model in examining the incremental information content of the two sets of accounting data. This is done for CASs and the reconciliations under IFRSs, for companies with both A- and B-shares covering the period 1993 to 1997. They find that both the price and return models yield similar results. Furthermore, the results of the return model are consistent with the findings of Eccher and Healy (2000). They report that overall both CASs- and IFRSs-based accounting information have more explanatory power for B-share prices and returns than for A-shares as measured by adjusted R^2. CASs- and IFRSs-based accounting information appear to be equally value relevant in relation to the B-share prices. In comparison, book values of equity do not appear to be value relevant in relation to the A-share prices and the A-share market appears to place most weight on CASs-based earnings. Only in recent years have A-share prices and returns appeared to be reflecting some of the IFRSs-based

[28] The Vuong (1989) test is a test of nonnested model used to evaluate the relative explanatory power of two sets of variables.

accounting information.

Sami and Zhou (2004) use the Ohlson (1995) model to examine the information content of accounting information on A- and B-share prices. The sample is based on the companies that issued both A- and B-shares from 1994 to 2000. For the A-share model, they use CASs-based accounting information, and for the B-share model, they use IFRSs-based data. This study used R^2 for the comparison of the relative explanatory power of the two models on share prices. The study shows that accounting information influences the pricing process in both the A- and B-share markets. It further reveals that the accounting information in the B-share market is more value relevant than that in the A-share market. The value relevance level in the A-share market fluctuates, with low relevance in 1994 and 1995, a peak in 1996 and a decrease from 1997. They argue that the reasons for this are the changes in the disclosure environment. In contrast to the findings of Chen, Firth and Kim (2002), Sami and Zhou (2004) find that the book values of equity are more value relevant in relation to A-share prices than earnings. They suggest that this may arise because of how the A-share market perceived the earning-management behaviour by listed companies, causing investors to ignore the information content of earnings.

Table 3.1 summarises the four studies discussed above which examine the relative and incremental value relevance of CASs- and IFRSs-based accounting data in the Chinese capital market. The research "gaps" and the shortcomings of these prior studies are identified and discussed in the next chapter.

3.5 Summary

This chapter reviews the prior research in the field of the value relevance of accounting information. As is discussed in section 3.1, there are many interpretations of value relevance. The interpretation adopted in this dissertation, is that, the value relevance of accounting information is the ability of accounting numbers to summarise the information underlying the stock prices.

Many studies have been done on the subject of value relevance, especially in developed countries. The general conclusion is that accounting numbers such as earnings and book values have information content. Furthermore, there are a growing number of

TABLE 3.1

Summary of research on the relative and incremental value relevance of CASs- and IFRSs-based accounting data in the Chinese capital market

Authors	Area of research	Method	Period	Data	Sample size	Data Source
Bao and Chow, 1999	Relative value relevance of two sets of accounting data (CASs and IFRSs-based) for B-share investors	Ohlson Model and Davidson-MacKinnon J-Test	5 years 1992-1996	B-share prices, EPS based on CASs, EPS based on IFRSs, BVPS based on CASs, BVPS based on IFRSs.	213 observations	TEJ
Eccher and Healy, 2000	Relative value relevance of the two sets of accounting data (CASs and IFRSs-based) for both A-share and B-share investors	Return model and Vuong's Test	5 years 1993-1997	A-share returns, B-share returns; EPS based on CASs, and EPS based on IFRSs.	83 companies, 171 observations	TEJ
Chen, Firth and Kim, 2002	Incremental information content of accounting data for domestic and foreign investors	Modified Ohlson and Return models	5 years 1993-1997	A-share returns, B-share returns; A-share price, B-share price; EPS based on CASs, and difference in EPS based on CASs and IFRSs; BVPS based on CASs, BVPS based on CASs and IFRSs.	82 companies, 298 observations	CASs-based data from annual reports published in financial newspapers; IFRSs-based data and A- and B-share prices are from the SHSE and SZSE.
Sami and Zhou, 2004	Relative information content of CASs-based accounting data in relation to A-share prices versus IFRSs-based accounting data in relation to B-share prices.	Ohlson Model and R^2	7 years 1994-2000	A-share prices, EPS based on CASs, BVPS based on CASs; B-share prices, EPS based on IFRSs, BVPS based on IFRSs.	81 companies, 401 observations	TEJ

studies comparing the usefulness of accounting information based on local GAAP (e.g. German, French, Swiss and Finnish) versus those based on either US GAAP or IFRSs. These studies find that accounting information measured under local GAAP is value relevant to the investors. However, relative to IFRSs or US GAAP, the findings provide mixed results.

Contrary to doubts about the value relevance of IFRSs-based accounting information in developing countries, the limited studies reviewed generally conclude that, in these countries, accounting information based on IFRSs is value relevant in equity valuation.

Sub-section 3.3.3 examined the handful of value relevance studies done in the Chinese market. The findings in general support the value relevance of CASs-based accounting information in the Chinese markets and these results are comparable to similar studies in other markets. To date, only four studies have compared the value relevance of CASs- and IFRSs-based accounting information in the two market segments (i.e. A-share and B-share markets) in China. However, the results provide mixed evidence. Bao and Chow (1999) focus on the B-share market. They suggest that IFRSs-based accounting data is more value relevant in relation to the B-share prices than CASs-based accounting information. Eccher and Healy (2000) and Chen, Firth and Kim (2002) find that for A-share prices, CASs-based accounting information is more value relevant than IFRSs-based data. However, the B-share market does not seem to distinguish between the information content of CASs-based or IFRSs-based data. Sami and Zhou (2004) compare the value relevance of CASs-based accounting data in relation to A-share prices with IFRSs-based information in relation to B-share prices. They conclude that accounting information in the B-share market is more value relevant than that in the A-share market.

Overall, the studies reviewed in this chapter show that accounting information is value relevant in both developed and developing markets, including the Chinese market. In addition, accounting information based on IFRSs is generally value relevant, especially in the developing countries. When examining the relative value relevance of accounting data based on IFRSs and those based on local GAAP, mixed results are found in both the developed market and Chinese market. This dissertation builds on prior studies by investigating the relative value relevance of the CASs-based and the IFRSs-based accounting information (earnings and book values of equity) in relation to

both A- and B-share prices over the periods 1994 to 1997, 1998 to 2004, and 1994 to 2004. The next chapter discusses the research methodology which underpins this investigation.

Chapter 4
RESEARCH METHODOLOGY

4.1 Introduction

The objective of this dissertation is to investigate the relative value relevance of the CASs-based and the IFRSs-based accounting information (earnings and book values of equity) in relation to both A- and B-share prices over the following periods: (a) 1994 to 1997, (b) 1998 to 2004, and (c) 1994 to 2004. On the one hand, as discussed in detail in Chapter 2, the period 1994 to 1997 is characterised by major differences between CASs and IFRSs, as CASs were more rigid and rule-driven while IFRSs allow more flexibility in terms of judgements made by management. On the other hand, the period since 1998 sees a major convergence of CASs towards IFRSs. This chapter discusses the research methodology adopted to address the research objective.

The rest of this chapter is organised as follows. Section 4.2 presents the research objective, motivation and expectation of the results based on knowledge obtained from prior chapters; section 4.3 describes the sample selection and data source. The research design and regression assumptions are discussed in sections 4.4 and 4.5, respectively. Then, the limitations of the tests in this dissertation are explained in section 4.6. Finally, section 4.7 concludes the chapter.

4.2 Research motivation and expectation

The research objective of this study is motivated by several factors. Firstly, given that the first major attempt to harmonise the CASs with the IFRSs took place in 1998, it would be interesting to see if the improvements in CASs since 1998 have changed the relative value relevance of the accounting information especially in the A-share market. If this dissertation provides evidence that the differences in the value relevance of the two sets of financial statements (in relation to A-share prices) have narrowed in the post-1998 period, an important question would be raised. Specifically, it would be essential to ask whether or not it would still be necessary to continue to require companies to prepare the two sets of financial statements. Secondly, some of the prior studies imply that the two markets are separate in terms of accounting information (with the CASs-based information considered to be relevant only in the A-share market and

the IFRSs-based information in the B-share market) (see Sami and Zhou, 2004). Furthermore, the study by Bao and Chow (1999) examined the relative value relevance of the CASs-based and IFRSs-based accounting information in relation to the B-share prices only (that is, ignoring the A-share prices). However, although there has been effective segmentation between A- and B-share markets when it comes to share ownership, there is nothing to prevent CASs-based and IFRSs-based financial statements being accessed by both classes of investors (for example, Bao and Chow, 1999). In addition, as mentioned in Chapter 2, this segmentation has been compromised since 2001, when the CSRC allowed cross-shareholding in the two market segments by certain qualified investors. This dissertation is therefore the first comprehensive study to examine the relative value relevance of CASs- and IFRSs-based accounting data for both the A- and B-share markets using a much larger sample and covering the period before the convergence of CASs towards IFRSs and the period after the convergence. Finally, since this dissertation compares the value relevance of the CASs-based and IFRSs-based accounting information, its findings may shed some light on and contribute to the wider debate about the relevance or irrelevance of the IFRSs in developing countries. The efforts made by the Chinese MOF to converge the CASs towards IFRSs suggest that they consider the IFRSs-based information to be more relevant in the A-share market than CAS-based information.

Although Eccher and Healy (2000) found that CASs-based earnings are more value relevant than IFRSs-based earnings for the A-share market, their model did not take into account the effect of book values of equity. Some researchers, such as Collins, Maydew and Weiss (1997) and Francis and Shipper (1999), find book values of equity to be an important variable in the value relevance literature. In addition, as per the discussion in Chapter 2, investors consider IFRSs-based information to be more reliable than CASs-based information due to the quality of the IFRSs and the audit work by international auditors. As a result, for the A-share market, it is expected that accounting information based on IFRSs will be more value relevant than CASs-based information for the period before 1998. As CASs converges towards IFRSs, especially after 1998, CASs-based information should thus become more value relevant to the A-share market. However, as observed in Chapter 2, the continual gap post-1998, between the CASs-based earnings, and IFRSs-based earnings suggests that IFRSs-based information might still be more value relevant for the A-share market. Nonetheless, the difference in the explanatory power of the two sets of accounting data for A-share

prices is expected to decrease post-1998, as the CASs-based information becomes more comparable with the IFRSs-based information.

Based on evidence from Bao and Chow (1999), it is expected that for the B-share market, IFRSs-based accounting information should have greater information content than CASs-based information over the three periods. However, as with the A-share market, it is expected that the difference in the explanatory powers of the two sets of accounting data for B-share prices will decline.

Furthermore, to obtain more insight into and explanation for the results obtained, yearly regressions will also be conducted. As per the findings of Sami and Zhou (2004), the effect of the special events in 2000 and 2001, such as China's accession to the WTO and gaining the right to host the 2008 Olympic Games, is expected to be revealed in the yearly analysis.

4.3 Sample selection and data source

4.3.1 Data sources

Data for this dissertation were obtained from two sources, namely Datastream which provided the annual share prices, the earnings per share (EPS) figures and the number of shares and the Taiwan Economic Journals (TEJ) Database which supplied the book values of equity figures. Book values of equity per share (BVPS) figures were then calculated by dividing the book values of equity by the number of shares. The reason for using the two sources is that Datastream does not have CASs-based book values of equity numbers. To ensure consistency, the book values of equity figures based on both CASs and IFRSs were obtained from the TEJ. The reason for using per share figures is due to scale effect considerations as explained in sub-section 4.3.4.

4.3.2 Period selection

The sample data was collected for the period from 1994 to 2004. The reasons for selecting 1994, as the beginning of the sample period are two-folds. Firstly, the stock exchanges only started in the early 1990s and the quantity of data available in the first 3 years is very small. Secondly, there was a major exchange rate adjustment on 1

January 1994, when the Chinese government devalued the Chinese RMB from USD 1.00 to RMB 5.80 to RMB 8.70. Thus, data is only included from 1994 to exclude this one-time event.

4.3.3 Sample selection

The population for this dissertation is made up of only those listed Chinese companies that issued both A- and B-shares. Since the focus of this study is to investigate the properties of accounting data under CASs and IFRSs, only the firms that issued both A- and B-shares are of interest. The first step was therefore to identify all the firms that issued both A- and B-shares. In the Shanghai stock market, 44 firms were identified. In the Shenzhen stock market, the number was 42. Appendix D provides the list of these 86 selected firms.

The second step was to extract those firms' records (i.e. share price, EPS, BVPS) that were available for at least one year between 1994 and 2004. For each firm-year, all these records need to be present for the regression tests. To ensure the reliability of the data, three companies were randomly selected and relevant data items were compared with the published financial reports of these companies. However, no major discrepancies were found.

As reported in Table 4.1, in Panel A, for the period 1994 to 1997, the sample comprises 264 firm-years with at least one year of A-share prices and 270 observations with B-share prices. For tests requiring CASs-based data, the number of firm-years declines to 186 for A-shares and 183 for B-shares. This reduction in firm-years is because of a lack of either EPS or BVPS data. For tests using IFRSs-based amounts, the sample is limited to 182 A-share observations and 187 B-share observations. Panel B presents the sample used for the period 1998 to 2004, starting with 584 observations for A-shares and 602 firm-years for B-shares. For models using CASs-based data, 552 observations are used for both A- and B-shares. For models using IFRSs-based information, the number of firm-years included is 543 and 549 for A- and B-shares, respectively. Finally, Panel C shows the sample selection procedure for the full sample period (1994 to 2004). It starts with 848 and 872 observations for A- and B-share prices, respectively. For the tests using CASs-based (IFRSs-based) information, the sample reduces to 738 (726) firm-years for A-shares and 734 (736) firm-years for

B-shares. Since complete financial and market data are not available for all the sample firms for all the 11 years examined, the number of firm-years analysed in the testing varies from year to year.

4.3.4 Data adjustment

4.3.4.1 Outliers

Outliers are defined as extreme values that are very far removed from the rest of the data set. These data points may be either observational errors, or extreme sample values. Outliers are important as they might bias the analysis (Jacobs, 1983).

TABLE 4.1

Sample selection for periods: 1994 to 1997, 1998 to 2004 and 1994 to 2004

Panel A: 1994-1997	**CASs**		**IFRSs**	
	A-shares	B-shares	A-shares	B-shares
Populations: Firm-years	344	344		
Less firm-years of missing share prices	(80)	(74)		
Firms with at least one year of share price data	264	270	264	270
Less firm-years of missing CASs or IFRSs accounting data	(78)	(87)	(82)	(83)
Final sample observations #	**186**	**183**	**182**	**187**
Panel B: 1998-2004				
	A-shares	B-shares	A-shares	B-shares
Populations: Firm-years	602	602		
Less firm-years missing share prices	(18)	0		
Firms with at least one year of share price data	584	602	584	602
Less firm-years of missing CASs or IFRSs accounting data	(32)	(50)	(41)	(53)
Final sample observations #	**552**	**552**	**543**	**549**
Panel C: full sample (1994-2004)				
	A-shares	B-shares	A-shares	B-shares
Populations: Firm-years	946	946		
Less firm-years of missing share prices	(98)	(74)		
Firms with at least one year of share price data	848	872	848	872
Less firm-years of missing CASs or IFRSs accounting data	(110)	(138)	(122)	(136)
Final sample observations #	**738**	**734**	**726**	**736**

The final sample observations for A-shares and B-shares differ under CASs and IFRSs. For example, Panel A shows 186 observations for A-shares under CASs and 182 observations under IFRSs. This arises due to missing data. If, for example, EPS under CASs is missing and all the other variables are available, the firm year is included in the IFRSs sample, but not in the CASs sample. However, for the J-test the entire firm-year is excluded.

Draper and Smith (1998, p. 371 as cited in Gujarati, 2003) warned that "automatic rejection of outliers is not always a wise procedure. Sometimes the outlier is providing information that other data points cannot due to the fact that it arises from an unusual

combination of circumstances which may be of vital interest and requires further investigation rather than rejection." They suggested that as a general rule, outliers should be rejected only if they can be confirmed as errors.

As there was not enough information available, it was not possible to identify the outliers as errors. In addition, tests conducted using data excluding the outliers showed no significant difference in the regression results[29]. Hence, the outliers were not excluded.

4.3.4.2 Scale effect

Lo (2005) has pointed out that scale can lead to a number of econometric problems, such as coefficient bias, R^2 bias, and heteroscedasticity. Thus, per-share values were used, as recommended by the various studies (Christie, 1987; Kothari and Zimmerman, 1995 and Brown, Lo and Lys, 1999).

4.4 Research design

4.4.1 The model selection

The two types of model used for the value relevance studies were identified in Chapter 3, as the return model and the price model. In this dissertation, only the price model is used for the following reasons:

- The price model, based on Ohlson (1995), shows how a firm's market value is related to both book value of equity and accounting earnings. Since these two components of accounting information play different roles in the pricing of shares, the use of the Ohlson model will enable the assessment of the value relevance of both the income statement and the balance sheet. In comparison, the return model only enables the evaluation of the value relevance of accounting earnings (Chen, Chen and Su, 2001).
- The price model is also preferred over the return model as accounting information can be value relevant if it affects stock prices even though it does not provide new information to affect stock returns (Kothari and Zimmerman, 1995).

[29] These results are not reported in this dissertation.

- Finally, the return model is not considered necessary as the findings of the prior studies, such as Chen, Firth and Kim (2002), which used both the return and price models reveal that the results of the return model are generally consistent with those of the price model.

The Price Model is as follows:

For A-Shares:

$$P_{Ait} = \alpha + \beta_1 EPS_{Kit} + \beta_2 BVPS_{Kit} + \varepsilon_{it}$$

Where:

P_{Ait}	A-share price (quoted in RMB) of firm i four months after the fiscal year end of year t (i.e. on 30 April in year t+1)[30].
α	The intercept of the regression
β_1	The coefficient of the independent variable EPS_{Kit}
β_2	The coefficient of the independent variable $BVPS_{Kit}$
K	Accounting standards in either CASs or IFRSs
EPS_{Kit}	The earnings per share (based on either CASs or IFRSs) of firm i at year t
$BVPS_{Kit}$	The book values of equity per share (based on either CASs or IFRSs) of firm i at year t
ε_{it}	The error term

For B-Shares:

$$P_{Bit} = \mu + \delta_1 EPS_{Kit} + \delta_2 BVPS_{Kit} + \nu_{it}$$

Where:

P_{Bit}	B-share price of firm i four months after the fiscal year end of year t (i.e. on 30 April in year t+1). As the B-share prices are quoted in foreign currency: USD for firms listed on SHSE, and HKD for firms listed on SZSE, the share prices are translated into RMB using the ruling exchange rate on 30 April.
μ	The intercept of the regression

[30] This is because all companies in China have the same financial year end (31 December) and are required to publish their annual reports by 30th April of the following year.

δ_1 The coefficient of the independent variable EPS $_{Kit}$

δ_2 The coefficient of the independent variable BVPS $_{Kit}$

K Accounting standards in either CASs or IFRSs

EPS $_{Kit}$ The earnings per share (based on either CASs or IFRSs) of firm i at year t

BVPS $_{Kit}$ The book values of equity per share (based on either CASs or IFRSs) of firm i at year t

v_{it} The error term

Therefore the price model will have four permutations as summarised in Table 4.2:

TABLE 4.2

The four permutations of the price model used in the testing

	CASs	*IFRSs*
A-Share	$P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \varepsilon_{it}$	$P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \theta_{it}$
B-Share	$P_{Bit} = \mu_0 + \mu_1 EPS_{CASs\,it} + \mu_2 BVPS_{CASs\,it} + v_{it}$	$P_{Bit} = \delta_0 + \delta_1 EPS_{IFRSs\,it} + \delta_2 BVPS_{IFRSs\,it} + \varphi_{it}$

4.4.2 Testing for relative value relevance

The commonly used methods as identified in the prior studies are the Davidson and MacKinnon's nonnested[31] J-test (hereafter 'the J-test'), used by Bao and Chow (1999), and Chan and Seow (1996); the Vuong test employed by Dechow (1994) and Eccher and Healy (2000); then the adjusted R^2 applied by Sami and Zhou (2004).

The Vuong test and the J-test both evaluate the alternative models in order to derive the 'true' model. However, as the Vuong test is more suitable for tests with large sample sizes (Biddle, Seow and Siegel, 1995), the J-test is preferred over the Vuong test for the purpose of this dissertation. Therefore, following Bao and Chow (1999), the J-test is used to assess which one of the two competing sets of explanatory variables is more

[31] Two competing models are said to be nonnested because one cannot be derived as a special case of another as the variables used by the two models are different sets of variables. Alternatively, two models are nested if one model can be derived from the other, for example, model A has X_1, X_2 and X_3 as independent variables, and model B has X_1 and X_2 as independent variables. By testing the hypothesis that coefficient of X_3 is equal to zero and it is not rejected, model A reduces to model B (Gujarati, 1995, p. 487).

closely associated with the dependent variables.

Adjusted R^2 is a simple method that chooses the model with the highest adjusted R^2. However, as Gujarati (1995) has pointed out, the goodness of fit measure alone cannot suggest that the model with the highest R^2 ranking fits the data best. Although the adjusted R^2 cannot be used to determine which of the alternative models is statistically significant enough to be the 'true' model, it can be used to compare the changes in the explanatory power of CASs and IFRSs models over time.

4.4.2.1 Procedure for the J-test

For the A-share market the following pair of hypotheses is tested (this exercise is repeated using B-share prices):

$$H_{10}: P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \varepsilon_{it}$$

$$H_{1a}: P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \theta_{it}$$

The mechanism of this test is as follows:

- The A-share prices are regressed on IFRSs-based earnings and book values of equity (i.e. H_{1a}) to obtain a set of estimated share prices, $PRICE_{IFRSs\,it}$.
- Then, the estimated share prices are added as an additional explanatory variable to the CASs model (i.e. H_{10}) and thus the following model is estimated:

$$P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \alpha_3 PRICE_{IFRSs\,it} + \varepsilon_{it}$$

- The hypothesis (H_{10}) uses the CASs model as the reference model and tests that α_3 is not significantly different from zero.
- If this hypothesis is not rejected, it indicates that the IFRSs model has no additional explanatory power over the CASs model.
- H_{10} will be rejected if α_3 is significantly different from zero.

However, the rejection of H_{10} does not imply the validity of H_{1a}. Therefore, a second pair of hypotheses, stated below, is also tested:

H_{20}: $P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \theta_{it}$

H_{2a}: $P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \varepsilon_{it}$

A similar testing procedure is followed:

- Firstly, the A-share prices are regressed on the CASs model (i.e. H_{2a}) to obtain the predicted A-share prices, $PRICE_{CASs\,it}$.
- The estimated share prices are then added to the IFRSs model (i.e. H_{20}) as a third explanatory variable and the following model is estimated:
  $P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \beta_3 PRICE_{CASs\,it} + \theta_{it}$

- This time, the IFRSs model is treated as the reference model and the second hypothesis (H_{20}) that β_3 is not significantly different from zero is tested.
- This hypothesis is rejected if β_3 is significantly different from zero. This shows that the CASs model, representing the influence of variables not included in the IFRSs model, has additional explanatory power beyond that contributed by the IFRSs model.

Using the joint results from the testing of the two hypotheses described above, the relative value relevance of the two models can be determined. There are typically four kinds of outcome that can be expected from these joint tests as summarised in Table 4.3.

1. If H_{10} is accepted and H_{20} is rejected, this would suggest that the A-share prices are more closely associated with earnings and book values of equity based on CASs rather than IFRSs.
2. If H_{20} is accepted and H_{10} is rejected, then the IFRSs model is more value relevant.
3. It is also possible for both hypotheses to be rejected which means that neither model seems compatible with the data, and
4. If neither of the hypotheses is rejected, the two models are either very similar or not very informative.

TABLE 4.3

The four types of outcome from the J-test

	Null Hypothesis: H_{10} CASs model as a true model	*Null Hypothesis: H_{20} IFRSs model as a true model*	*Meaning of the outcome*
Outcome 1	Accept	Reject	CASs model is more value relevant.
Outcome 2	Reject	Accept	IFRSs model is more value relevant.
Outcome 3	Reject	Reject	Neither of the two models is compatible with the data.
Outcome 4	Accept	Accept	Both models are very similar.

4.5 Regression assumptions

For all the tests, the regression model's assumptions, regarding the error terms and explanatory variables, are considered and accounted for. This is to ensure the validity of statistical outcomes. More specifically, for the error terms, this means they are random variables with a mean value of zero, and that they are normally distributed, homoscedastic[32] and independent. For the explanatory variables, there is no exact linear relationship or multicollinearity between them.

If the error terms do not have zero mean values, the intercept in the regression equation cannot be estimated. However, in reality, the intercept is not important. In addition, the slope coefficients remain unaffected if this assumption is violated. Thus, this assumption is not of concern here (Gujarati, 2003).

Gujarati (2003) contends that the central limit theorem can be relied upon, if the sample size is large enough (30 or more observations). The usual test procedures, namely the t- and F- tests, are still valid even if the error terms are not normally distributed.

Thus, in line with the other prior studies, and for the purpose of this dissertation, it is assumed that even if the error terms are not normally distributed, this will not have a material impact on the findings of the regressions.

[32] Homoscedasticity implies that the error terms have constant variance, while heteroscedasticity means that the error terms have unequal variance (Van Den Honert, 1999).

White (1980) (as per Eviews[33]) has derived a heteroscedasticity-consistent covariance matrix estimator, which provides correct estimates of the coefficient covariances in the presence of heteroscedasticity of an unknown form.

Newey and West (1987) (as per Eviews) have developed a procedure where the standard errors in the Ordinary Least Squares (OLS) regressions are corrected for heteroscedasticity and autocorrelation. The corrected standard errors are known as 'Heteroscedasticity and Autocorrelation Consistent' (HAC) standard errors, or simply as Newey-West standard errors.

Eviews provides adjustments for both White and Newey-West procedures. The White estimates will be applied to the regressions with a heteroscedasticity problem only. The Newey-West procedures will be used in cases where serial correlation or both serial correlation and heteroscedasticity are present.

Finally, in the case of near or high multicollinearity, the only problem is that this makes precise estimation of the coefficients difficult as it results in large standard errors. Gujarati (2003) suggests a few remedial measures when the multicollinearity is serious. For example, the simplest thing to do is to drop variables that are highly correlated. Pooling the data or combining the cross-sectional and time-series data usually also alleviates this problem. Lastly, one can "do nothing", because multicollinearity is essentially a data deficiency problem, not a problem with OLS or the statistical technique in general. In addition, even if one or more of the regression coefficients cannot be estimated with precision, a linear combination of these can still be estimated relatively efficiently.

No adjustments for multicollinearity are needed in these regressions since (a) the tests performed in this dissertation are based on the technique of pooling the data and (b) dropping any of the variables (i.e. EPS and BVPS) can actually cause specification bias of the regression models.

[33] Eviews is a statistical software package used in this dissertation.

4.6 Limitations and assumptions

There are certain limitations and assumptions in this dissertation. Firstly, there are data constraints and a lack of data for all firms. This is especially prominent during the earlier part of the sample period, however, the sample size is sufficient for analysis purposes. Secondly, firms missing CASs or IFRSs accounting data are not matched for regression tests, resulting in differences in the final sample observations between the CASs-based sample and the IFRSs-based sample. However, it is submitted that as the difference is not significant and for this reason, and in order to maximise the sample size for each regression test, no adjustments were made. Thirdly, consistent with the prior studies, the use of a price model assumes clean surplus accounting, which might be violated in some Chinese companies. Finally, the data are assumed to be normally distributed, and the stock markets are assumed to be efficient for the functioning of the regression model. It is nonetheless submitted that, whilst these limitations rendered the research environment less than ideal, none of them detracted significantly from the validity of the research or from the soundness of any of the conclusions reached.

4.7 Summary

This chapter identifies the "gaps" in the prior studies discussed in Chapter 3, and presents the research objective of this dissertation together with its motivation and the expected outcomes. The chapter also describes the sample selection procedures and the research design used to test for relative value relevance.

The research objective of this dissertation has been stated as follows: to investigate the relative value relevance of the CASs-based and the IFRSs-based accounting information (earnings and book values of equity) in relation to both A- and B-share prices over the following periods: (a) 1994 to 1997, (b) 1998 to 2004, and (c) 1994 to 2004. As per the evidence discussed in Chapter 2, it is expected that for all three periods, the IFRSs model will be more value relevant for both A-share and B-share markets. However, as a result of the improvement in CASs, it is expected that the difference in the explanatory power of the two models will decrease after 1998. A year-by-year regression will also be performed to provide further detail with respect to the change in value relevance over time.

The data used for the value relevance tests were obtained from Datastream and the TEJ database. All companies that issued both A- and B-shares between 1994 and 2004 were selected. The EPS, and BVPS based on CASs and IFRSs, as well as A- and B-share prices were also extracted for these firms with respect to each year. Due to a lack of financial and market data for some of these companies in the earlier years, the number of firm-years varies from one year to the next. Finally, outliers and scale effects were considered before the data were used in the tests.

The price model is selected over the return model as the preferred model to be used for the value relevance tests. This is because it incorporates the use of both the income statement and balance sheet information. The J-test is adopted as the method used to test the relative value relevance of the two sets of accounting information (i.e. one based on CASs and the other based on IFRSs). The adjusted R^2 is used to test whether there are any changes in the explanatory power of the CASs and IFRSs models over time. To ensure validity of the testing results, regression assumptions were also considered and, where necessary, appropriate adjustments were made.

A few limitations have also been identified which are inherent in the design of the methodology. Firstly, there is the lack of data for all firm-years especially in the earlier part of the sample period. Secondly, for the operation of the price model, this dissertation assumes that clean surplus accounting holds in Chinese companies. Lastly, it is also assumed that the error terms of the data follow a normal distribution and that the Chinese capital market is efficient. The test results are presented in the next chapter.

Chapter 5
ANALYSIS AND INTERPRETATION OF THE RESULTS

5.1 Introduction

The previous chapter highlights the research objective of this dissertation which is to examine the relative value relevance of the CASs-based and IFRSs-based accounting information (earnings and book values of equity) in relation to both A- and B-share prices over the following periods: (a) 1994 to 1997, (b) 1998 to 2004, and (c) 1994 to 2004.

The objective of this chapter is to present the findings, based on the methodology described in Chapter 4. In addition, the results are compared and contrasted to the findings of previous studies, and an attempt is made to explain the differences observed. This chapter begins with a section detailing the descriptive statistics on the variables prior to the start of the value relevance tests. It is then followed by a discussion of the research results. In addition, the results of the yearly regressions, conducted to provide further insights, are presented. The last section sums up the chapter.

5.2. Summary of descriptive statistics

Table 5.1 presents descriptive statistics on the variables used in the analysis for A- and B-shares for the periods pre-1998, post-1998 and the full sample period in Panels A, B and C, respectively. As shown in Panel A, for the period 1994-1997, the average price in RMB, of A-shares is 8.273 (with a median of 7.435), and that of the B-shares over the same period is 2.405 (1.749). However, the A-share prices appear to be more volatile than the B-share prices. This is evident from the larger standard deviation (4.604) in A-share prices compared to 1.883 in B-share prices. This finding is consistent with prior studies (Bailey, 1994; Chakravarty, Sarkar, and Wu, 1998; Bao and Chow, 1999; Fung, Lee and Leung, 2000; Chen, Lee and Rui, 2001 and Sami and Zhou, 2004) which show that B-shares in China are generally less volatile and are traded at a discount relative to A-shares.

For the period after 1998, the average of A- and B-share prices have both increased to 9.242 and 3.921, respectively. The difference between the averages of A- and B-share

prices decreased from 5.868 (for the period before 1998) to 5.321. This finding is consistent with the evidence observed in Chapter 2, Figure 2.2 of sub-section 2.5.2, where the graph shows a narrowing of the difference between A- and B-share prices over the years.

Overall, for the period 1994 to 2004, Panel C shows that the average price of A-shares is 8.629 (with a median of 7.845), and that of B-shares over the same period is 3.451 (2.831). This is consistent with the finding presented in Figure 2.1 of sub-section.2.5.2, which shows A-share prices being higher than B-share prices for the entire sample period. The difference in the average prices between A- and B-shares (i.e. 5.178) has declined compared to the findings reported in other studies. For instance, Sami and Zhou (2004) reported 9.998 and 3.266 as the average prices for A- and B-shares, respectively (i.e. a difference of 6.732) for the period 1994 to 2000.

Table 5.1 also shows that the average IFRSs-based values are more conservative than the average CASs-based values. This is because the IFRSs-based EPS and BVPS are lower than those based on CASs for all the three periods.

Nevertheless, there appear to be some changes in the differences between the CASs-based EPS and IFRSs-based EPS. The difference between EPS based on CASs and IFRSs is 0.090 for the period before 1998, and it has declined to 0.031 for the period after 1998. This finding seems to suggest that the earnings difference between CASs and IFRSs has decreased over the years. Conversely, Figures 2.3 and 2.4 reveal that this is not the case. The reason for this decrease is most probably the effect of the 'negative differences' experienced in the years 2003 to 2004 in which the IFRSs-based EPS amounts are higher than the CASs-based amounts, thus reducing the positive differences.

TABLE 5.1

Descriptive statistics for the variables

Panel A: descriptive statistics for the period 1994 – 1997

Variables	Valid N[a]	Mean	Median	Standard Deviation
Share prices				
PRICE A	264	8.273	7.435	4.604
PRICE B	270	2.405	1.749	1.883
CASs-based				
EPS	244	0.195	0.170	0.189
BVPS	189	1.863	1.682	1.400
IFRSs-based				
EPS B	238	0.105	0.030	0.169
BVPS B	196	1.820	1.683	0.739

Panel B: descriptive statistics for the period 1998 – 2004

Variables	Valid N[a]	Mean	Median	Standard Deviation
Shares prices				
PRICE A	584	9.242	8.535	4.581
PRICE B	602	3.921	3.562	2.651
CASs-based				
EPS	573	0.135	0.090	0.191
BVPS	559	2.202	1.888	1.943
IFRSs-based				
EPS B	597	0.104	0.040	0.229
BVPS B	552	2.101	1.933	1.517

Panel C: descriptive statistics for the total sample period 1994 - 2004

Variables	Valid N[a]	Mean	Median	Standard Deviation
Share prices				
PRICE A	848	8.629	7.845	4.675
PRICE B	872	3.451	2.831	2.537
CASs-based				
EPS	817	0.153	0.120	0.192
BVPS	748	2.116	1.841	1.826
IFRSs-based				
EPS B	835	0.104	0.030	0.214
BVPS B	748	2.027	1.814	1.362

[a] *Valid N: refers to the number of firm-year observations.*

The correlation coefficients[34] between the variables are presented for all three time periods in Panels A, B and C in Table 5.2 below. These results provide preliminary evidence that both A- and B-share prices are positively related to CAS- and IFRSs-based EPS and BVPS. In addition, it is also observed that for both A- and B-shares, the price correlation with IFRSs-based BVPS is the highest compared to the price correlation with the other explanatory variables, for all three periods.

TABLE 5.2

Pearson correlation coefficients

Panel A: Correlation between variables for the period 1994-1997

VARIABLE	PRICE A	EPS_{CASs}	$BVPS_{CASs}$	PRICE B	EPS_{IFRSs}	$BVPS_{IFRSs}$
PRICE A	1					
EPS_{CASs}	**0.273**	1				
$BVPS_{CASs}$	**0.267**	**0.200**	1			
PRICE B	**0.793**	**0.353**	**0.230**	1		
EPS_{IFRSs}	**0.220**	**0.703**	**0.154**	**0.373**	1	
$BVPS_{IFRSs}$	**0.566**	**0.380**	**0.478**	**0.505**	**0.421**	1

Panel B: Correlation between variables for the period 1998-2004

VARIABLE	PRICE A	EPS_{CASs}	$BVPS_{CASs}$	PRICE B	EPS_{IFRSs}	$BVPS_{IFRSs}$
PRICE A	1					
EPS_{CASs}	**0.148**	1				
$BVPS_{CASs}$	**0.125**	**0.402**	1			
PRICE B	**0.672**	**0.313**	**0.243**	1		
EPS_{IFRSs}	0.076[a]	**0.556**	**0.293**	**0.211**	1	
$BVPS_{IFRSs}$	**0.213**	**0.565**	**0.662**	**0.363**	**0.366**	1

Panel C: Correlation between variables for the total sample period 1994-2004

VARIABLE	PRICE A	EPS_{CASs}	$BVPS_{CASs}$	PRICE B	EPS_{IFRSs}	$BVPS_{IFRSs}$
PRICE A	1					
EPS_{CASs}	**0.163**	1				
$BVPS_{CASs}$	**0.162**	**0.352**	1			
PRICE B	**0.696**	**0.281**	**0.254**	1		
EPS_{IFRSs}	**0.104**	**0.576**	**0.273**	**0.230**	1	
$BVPS_{IFRSs}$	**0.263**	**0.515**	**0.641**	**0.383**	**0.368**	1

[a] *Coefficient not statistically significant at the 5% level or less. All other coefficients are significant at the 5% level or less.*

A comparison of the results between Panel A and Panel B of Table 5.2 shows that, there is a general decline in the correlation between A-share prices and accounting data. The

[34] The correlation coefficient between two sets of variables measures how closely the two sets of variables move together.

only exception is the correlation between the A-share price and IFRSs-based BVPS. In addition, it has also been noted (see Table 5.2) that the association between A-share price and IFRSs-based EPS is no longer statistically significant (at the 5% level) for the period after 1998. The correlation between CASs-based accounting data and B-share prices seems to remain relatively stable, but the association between IFRSs-based accounting data and B-share prices appears to have declined in the period after 1998.

Overall, Panel C indicates that the price correlation with earnings and book value (on both sets of accounting standards) is much higher in the B-share market than in the A-share market. The A-share prices are correlated with the CASs-based EPS and BVPS at 16%. This is similar to the correlation obtained by Sami and Zhou (2004) of approximately 17%. The correlation coefficients between B-share prices and IFRSs-based EPS and BVPS are 23% and 38%, respectively. In comparison, Sami and Zhou (2004) reported coefficients of 33% for EPS and 31% for BVPS in the B-share market. It appears that there has been a major decrease in the correlation between the B-share prices and IFRSs-based earnings after 2000. Note that the sample period used by Sami and Zhou (2004) is from 1994 to 2000.

It should also be noted that although the correlations between the independent variables, (i.e. between CASs-based EPS and BVPS, and between IFRSs-based EPS and BVPS), are not high, they are statistically significant at the 5% level. Thus there is a risk of multicollinearity. However, as mentioned in section 4.4 of Chapter 4, because EPS and BVPS are the two major variables of the price model, and the pooling technique used in the regression reduced this risk, no attempt was made to exclude either one of the variables from the model.

5.3 Test results for the A-share market

The results on the value relevance of accounting information for the A-share market are presented in sub-section 5.3.1 and the results of relative value relevance between the CASs- and IFRSs-based information are presented and discussed in sub-section 5.3.2. Finally, sub-section 5.3.3 provides a summary of the test results for the A-share market.

5.3.1 Results on the value relevance of accounting information

The regression results for the A-share market for the three periods are shown in Table 5.3 below. Panel A shows results for the period pre-1998, using CASs-based and IFRSs-based information, Panel B reports the results using accounting information based on the two sets of accounting standards for the period post-1998 and Panel C presents the results for the period 1994 to 2004.

TABLE 5.3

Regression results for A-shares using CASs- and IFRSs-based accounting information

Panel A: Regression results for period 1994-1997

	price model using CASs information: $P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \varepsilon_{it}$			Price model using IFRSs information: $P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \theta_{it}$		
	EPS_{CASs}	$BVPS_{CASs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	Adjusted R^2
Coefficient	6.347	0.753	0.128***	-0.762	3.751	0.315***
t-value	(2.831)***	-1.099		(-0.281)	(7.479)***	

Panel B: Regression results for period 1998-2004

	price model using CASs information: $P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \varepsilon_{it}$			price model using IFRSs information: $P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \theta_{it}$		
	EPS_{CASs}	$BVPS_{CASs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	Adjusted R^2
Coefficient	2.857	0.194	0.026***	-0.126	0.646	0.042***
t-value	(2.438)**	(2.279)**		(-0.132)	(5.213)***	

Panel C: Regression results for period 1994-2004

	price model using CASs information: $P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \varepsilon_{it}$			price model using IFRSs information: $P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \theta_{it}$		
	EPS_{CASs}	$BVPS_{CASs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	Adjusted R^2
Coefficient	3.184	0.306	0.041***	0.064	0.889	0.067***
t-value	(2.809)***	(2.773)***		-0.069	(6.763)***	

** Significant at the 5% level
*** Significant at the 1% level

Table 5.3 shows that for each of the three periods, the F-tests[35] have a significance level of 1% (represented by the significance level of the adjusted R^2) which means that both the CASs-based and the IFRSs-based accounting figures are significantly associated with the A-share prices.

[35] F-test refers to the testing of the overall significance of the estimated regression. In another words, it is also the test of statistical significance of the explanatory power of the model, i.e. the adjusted R^2.

For the period 1994 to 1997, Panel A of Table 5.3 reveals that using CASs-based information, only EPS figures are found to be statistically significant at 1% level, with an estimated coefficient of 6.347. The estimated coefficient of $BVPS_{CASs}$ is not statistically different from zero. The adjusted R^2 shows that 13% of the variation in A-share prices is explained by the CASs-based data. In contrast, using IFRSs-based information, $BVPS_{IFRSs}$ is significantly associated with A-share prices, with an estimated coefficient of 3.751. However, EPS_{IFRSs} has a negative, but insignificant, coefficient. Chen, Gul and Su (1999) found that most Chinese companies reported negative earnings when income statements were prepared based on IFRSs. This could be the reason for the irrelevance of EPS_{IFRSs}. Overall, the adjusted R^2 of the IFRSs-based information explains 32% of the variation in A-share prices which is much higher than the 13% reported for the CASs-based information.

When compared to the findings of prior studies, the results differ with regards to the significance of BVPS. In particular, Chen, Chen and Su's (2001) examination of the value relevance of the CASs-based EPS and BVPS in the A-share market for the period 1990-1997, shows that both EPS_{CASs} and $BVPS_{CASs}$ are statistically significant at the 1% level. However, the results of this dissertation's tests indicate that only EPS_{CASs} is statistically significant and not $BVPS_{CASs}$. A similar problem was experienced by Lev and Zarowin (1999), who suggested that the inconsistency in statistical results is probably due to the difference in the periods examined. This is the most probable reason for the difference observed in the findings. As mentioned in Chapter 4, other than Eccher and Healy (2000), there has been no research comparing the relative value relevance of CASs and IFRSs accounting information in the A-share market. Compared to the results obtained by Eccher and Healy (2000) using the return model, the findings are consistent in that the A-share returns (prices) are more closely associated with CASs-based earnings than with IFRSs-based earnings.

For the period 1998-2004, Panel B of Table 5.3 shows some changes in the regression results as compared to the earlier period. Using the CASs-based information, the coefficients for both EPS_{CASs} (2.857) and $BVPS_{CASs}$ (0.194) are positive and statistically significant at the 5% level. Compared to the results for the pre-1998 period, the $BVPS_{CASs}$ is now statistically different from zero. This is consistent with the findings in other international markets such as the US, in which researchers such as Collins, Maydew and Weiss (1997) found that the value relevance of BVPS increases over time.

This change in regression results could also be as a result of the effort to converge CASs towards IFRSs since 1998, thus enhancing investors' confidence in the CASs-based numbers. As indicated by the adjusted R^2, the explanatory power of the CASs-based information is only about 3% as compared to 13% in the pre-1998 period. This could mean that, besides $BVPS_{CASs}$ and EPS_{CASs}, a heavier weight has been placed on non-accounting factors by the A-share market when making investment decisions. These possible factors will be explored when the yearly regressions are examined in section 5.5.

Similarly, in this later period, the A-share market also reacts differently to IFRSs-based information compared to prior periods. The explanatory power of the IFRSs-based information has also decreased significantly from 32% in the prior period to just over 4%. As discussed above, the reason for this decrease could be due to the influence of other factors, which will be examined in section 5.5. As reported in the previous period, EPS_{IFRSs} still does not seem to be value relevant in the A-share market as the coefficient on EPS_{IFRSs} is not significantly different from zero; while $BVPS_{IFRSs}$ is still significant at the 1% level with an estimated coefficient of 0.646. The difference between the adjusted R^2 of the CASs- and IFRSs-based information has narrowed to about 1% from 19% in period pre-1998. This outcome is consistent with the expectation that the differences in the explanatory powers of the two sets of accounting information will decrease.

Finally, Panel C presents the regression results for the entire sample period, 1994 to 2004. Both CASs-based earnings and book values are positive, and significantly associated with the share prices (at the 1% level). The explanatory power of the CAS-based information for A-share prices is 4%, which is marginally higher than the 3% reported by Sami and Zhou (2004). The coefficient on EPS_{CASs} is 3.184, while the coefficient on $BVPS_{CASs}$ is 0.306. These results are similar to the ones obtained by Sami and Zhou (2004), except that the earnings coefficient is nearly twice as high as in the results obtained by Sami and Zhou (2004). This difference could be due to the inclusion of the years 2001 to 2004 in the sample, which are not covered by Sami and Zhou (2004). The adjusted R^2 for the full sample based on IFRSs numbers (7%) is higher than the adjusted R^2 based on CASs numbers (4%). This signifies that A-share prices are explained more by the IFRSs numbers than by CASs amounts. However, only $BVPS_{IFRSs}$ is significantly related to A-share prices with a coefficient of 0.889.

The EPS_{IFRSs} is not value relevant in the A-share market given that its coefficient is not significantly different from zero.

5.3.2 Relative value relevance of CASs- and IFRSs-based accounting information

The J-test is performed in order to establish the statistical significance of the relative value relevance between the CASs-based and IFRSs-based accounting information in the A-share market. It also confirms the relative value relevance suggested by the adjusted R^2 (i.e. the adjusted R^2 for the IFRSs-based information is higher than the adjusted R^2 for the CASs-based information). The results are presented in Table 5.4 for the three time periods.

As expected, the J-test results for all three periods show that the IFRSs-based information is relatively more value relevant than the CASs-based information. Thus, as Table 5.4 indicates, when the CASs model is the benchmark model (to test the null hypothesis that the IFRSs model has no additional explanatory power over the CASs model), the test results, for all three periods, show that the regression coefficient of the estimated price, $PRICE_{IFRSs}$, is statistically significant in the revised CASs model. This suggests that the IFRSs model has additional explanatory power beyond that provided by the CASs model. The null hypothesis that the CASs model is the true model is thus rejected. In contrast, when the IFRSs model is the assumed true model, the coefficient of the estimated price, $PRICE_{CASs}$, is not statistically significant from zero in the modified IFRSs model. Thus, the null hypothesis that the IFRSs model is the true model cannot be rejected. The joint results of these two hypotheses give the second outcome as described in sub-section 4.4.2. They suggest that, IFRSs-based earnings and book values of equity have greater value relevance in the A-share market than CASs-based accounting information.

TABLE 5.4

J-test results for the CASs- and IFRSs-based information in the A-share market

Panel A: J-test results for period 1994-1997

	CASs model as the reference hypothesis: $P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \alpha_3 PRICE_{IFRSs\,it} + \varepsilon_{it}$				IFRSs model as the reference hypothesis: $P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \beta_3 PRICE_{CASs\,it} + \theta_{it}$			
	EPS_{CASs}	$BVPS_{CASs}$	$PRICE_{IFRSs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	$PRICE_{CASs}$	Adjusted R^2
Coefficient	2.158	-0.033	0.95	0.316***	-1.539	3.522	0.215	0.313***
t-value	-0.879	(-0.204)	(6.196)***		(-0.511)	(5.797)***	-0.684	

Panel B: J-test results for period 1998-2004

	CASs model as the reference hypothesis: $P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \alpha_3 PRICE_{IFRSs\,it} + \varepsilon_{it}$				IFRSs model as the reference hypothesis: $P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \beta_3 PRICE_{CASs\,it} + \theta_{it}$			
	EPS_{CASs}	$BVPS_{CASs}$	$PRICE_{IFRSs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	$PRICE_{CASs}$	Adjusted R^2
Coefficient	1.051	-0.072	0.975	0.042**	-0.217	0.584	0.172	0.040**
t-value	-0.86	(-0.806)	(4.627)**		(-0.230)	(4.491)**	-0.526	

Panel C: J-test results for period 1994-2004

	CASs model as the reference hypothesis: $P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \alpha_3 PRICE_{IFRSs\,it} + \varepsilon_{it}$				IFRSs model as the reference hypothesis: $P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \beta_3 PRICE_{CASs\,it} + \theta_{it}$			
	EPS_{CASs}	$BVPS_{CASs}$	$PRICE_{IFRSs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	$PRICE_{CASs}$	Adjusted R^2
Coefficient	0.893	-0.034	0.953	0.066***	0.006	0.824	0.126	0.066***
t-value	-0.715	(-0.387)	(5.620)***		-0.006	(5.291)***	-0.505	

** Significant at the 5% level

*** Significant at the 1% level

5.3.3 Summary of test results for the A-share market

Table 5.5 provides a summary of all the regression and J-test results for the three time periods examined. It can be concluded that while EPS_{CASs} and $BVPS_{IFRSs}$ have always been statistically significant, $BVPS_{CASs}$ only becomes value relevant after 1998, and EPS_{IFRSs} does not seem to be value relevant. In addition, the explanatory power of both the CASs- and IFRSs-based information seems to have declined sharply between the periods 1994 to 1997 and 1998 to 2004. Nevertheless, the adjusted R^2 for the IFRSs-based information is consistently larger than that for the CASs-based information even though the difference between the adjusted R^2 seems to have narrowed. The results of the J-test confirm the statistical significance of the higher relative value relevance of the IFRSs-based information over that of the CASs-based information in the A-share market. Therefore, in relation to the research objective, there has been no change in the relative value relevance between CASs-based and IFRSs-based information for the period post-1998, but the differences in the explanatory powers between the two sets of accounting measures has declined. In addition, the regression results also suggest that IFRSs-based accounting information is value relevant in a developing country such as China.

TABLE 5.5

Summary of regression and J-test results for the A-share market

Period	*CASs*			*IFRSs*			*J-Test*	
	EPS	BVPS	Adjusted R^2	EPS	BVPS	Adjusted R^2	CASs	IFRSs
1994- 1997	✔	✘	13%	✘	✔	32%	✘	✔
1998-2004	✔	✔	3%	✘	✔	4%	✘	✔
1994-2004	✔	✔	4%	✘	✔	7%	✘	✔
✔	Statistically significant at the 5% level or less							
✘	Not statistically significant							

5.4 Test results for the B-share market

Following the same structure as the A-share market, the results on the value relevance of accounting information for the B-share market are presented in sub-section 5.4.1. This is then followed by a discussion of the results of the relative value relevance of

CASs-based and IFRSs accounting information. Finally, sub-section 5.4.3 provides a summary of the test results for the B-share market.

5.4.1 Results on the value relevance of accounting information

The regression results on the value relevance of CASs-based and IFRSs-based information for the B-share market are presented in Table 5.6. Panel A shows the results for the period pre-1998, Panel B reports the results for the period post-1998 and Panel C presents the results for the period 1994 to 2004.

TABLE 5.6

Regression results for B-shares using CASs- and IFRSs-based accounting information

Panel A: Regression results for period 1994-1997

	price model using CASs information: $P_{Bit} = \mu_0 + \mu_1 EPS_{CASs\,it} + \mu_2 BVPS_{CASs\,it} + v_{it}$			price model using IFRSs information: $P_{Bit} = \delta_0 + \delta_1 EPS_{IFRSs\,it} + \delta_2 BVPS_{IFRSs\,it} + \varphi_{it}$		
	EPS_{CASs}	$BVPS_{CASs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	Adjusted R^2
Coefficient	3.828	0.237	0.175***	2.234	1.133	0.276***
t-value	(4.375)***	-1.085		(2.051)**	(4.071)***	

Panel B: Regression results for period 1998-2004

	price model using CASs information: $P_{Bit} = \mu_0 + \mu_1 EPS_{CASs\,it} + \mu_2 BVPS_{CASs\,it} + v_{it}$			price model using IFRSs information: $P_{Bit} = \delta_0 + \delta_1 EPS_{IFRSs\,it} + \delta_2 BVPS_{IFRSs\,it} + \varphi_{it}$		
	EPS_{CASs}	$BVPS_{CASs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	Adjusted R^2
Coefficient	3.496	0.190	0.115***	0.860	0.578	0.134***
t-value	(4.340)***	(3.195)***		-1.549	(7.181)***	

Panel C: Regression results for period 1994-2004

	price model using CASs information: $P_{Bit} = \mu_0 + \mu_1 EPS_{CASs\,it} + \mu_2 BVPS_{CASs\,it} + v_{it}$			price model using IFRSs information: $P_{Bit} = \delta_0 + \delta_1 EPS_{IFRSs\,it} + \delta_2 BVPS_{IFRSs\,it} + \varphi_{it}$		
	EPS_{CASs}	$BVPS_{CASs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	Adjusted R^2
Coefficient	3.026	0.246	0.111***	1.046	0.660	0.153***
t-value	(4.441)***	(3.519)***		(2.067)***	(7.850)***	

** Significant at the 5% level
*** Significant at the 1% level

Similarly to the A-share market, the F-tests in Table 5.6 show that for all the three periods, both the CASs- and IFRSs-based accounting numbers are significantly associated with B-share prices at the 1% level.

Panel A of Table 5.6 shows that, for the period 1994 to 1997, the association between

B-share prices and CASs-based accounting information is similar to that between A-share prices and CASs-based information. EPS_{CASs}, with a coefficient of 3.828, is significantly associated with B-share prices at the 1% level and $BVPS_{CASs}$ is not statistically significant. The regression results of the IFRSs-based information show that both the EPS and BVPS coefficients are positive and statistically significant at the 5% and 1% levels, respectively. The coefficient on EPS is 2.234 and on BVPS it is 1.133. The adjusted R^2 for the CASs-based and IFRSs-based information are about 18% and 28%, respectively. Thus, as with the regression results obtained for the A-share market, the adjusted R^2 suggests that the IFRSs-based accounting information provides more explanatory power on the variation of the B-share prices than the CASs-based information. Compared to the findings reported by Bao and Chow (1999), who examined the value relevance of the CASs-based and IFRSs-based information in the B-share market for the period 1992-1997, the results differ with regard to the significance of BVPS. According to Bao and Chow's (1999) study, both EPS_{CASs} and $BVPS_{CASs}$ are statistically significant at the 1% and 5% levels, respectively. However, using the IFRSs-based information, Bao and Chow (1999) only found EPS_{IFRSs} to be statistically significant at the 1% level and $BVPS_{IFRSs}$ is not statistically different from zero. Although the value relevance results of EPS_{CASs} and EPS_{IFRSs} are similar to those of Bao and Chow (1999), the value relevance results of $BVPS_{CASs}$ and $BVPS_{IFRSs}$ are not. The reasons for this inconsistency could be (a) differences in the sample periods and (b) difference in statistical adjustments. For example, while this dissertation adjusted for heteroscedasticity and autocorrelation, Bao and Chow (1999) did not. The results of the adjusted R^2, in both studies, lead to the same conclusion that the IFRSs-based information has more explanatory power than the CASs-based information in relation to the B-share prices.

Panel B of Table 5.6 shows that the adjusted R^2 of both the CASs-based and IFRS-based information decreased from 18% and 28%, respectively, during the pre-1998 period to 12% and 13%, respectively, during the post-1998 period. In addition, the differences in the explanatory powers between the two sets of accounting information have also decreased (from 10% to 1%) in line with expectations. For the CASs-based information, both EPS_{CASs} and $BVPS_{CASs}$ are statistically significant at the 1% level, and the estimated coefficients are 3.496 for EPS_{CASs} and 0.190 for $BVPS_{CASs}$. Unlike the results from the period before 1998, EPS_{IFRSs} is not value relevant in the B-share market. In contrast, $BVPS_{IFRSs}$ is value relevant in post-1998 period with an estimated

coefficient of 0.578.

Panel C shows the regression results for the full sample (1994 to 2004). Similarly to the results obtained in the A-share market, the coefficients of both EPS_{CASs} (3.026) and $BVPS_{CASs}$ (0.246) are positive and statistically significant at the 1% level. The adjusted R^2 for the CASs-based information (11%) is, however, higher than that of the A-share market (4%). This could suggest that the B-share investors rely more on the accounting data than their A-share counterparts in making investment decisions. This suggestion is supported by Chen, Firth and Kim (2002), who claimed that the foreign investors might find it difficult to acquire other local information, and thus focus more on the accounting data. Alternatively, the domestic investors might tend to rely more on rumours and inside connections in making investment decisions. In other words, this finding appears to support the information asymmetry theory as discussed in Chapter 2. In addition, as mentioned in Chapter 2, A-share investors are typically individuals with limited financial experience and accounting knowledge, as opposed to B-share investors who are mainly large international financial institutions with better investment experience and analysis tools. Hence, B-share investors are able to understand more of the accounting information than their A-share counterparts in making investment decisions. The regression results using the IFRSs-based information show that the coefficients for EPS_{IFRSs} (1.046) and $BVPS_{IFRSs}$ (0.660) are positive and statistically significant at the 1% level in relation to the B-share prices. Overall, the adjusted R^2 for the IFRSs-based information is about 15%. These results are similar to those reported by Sami and Zhou (2004) with an adjusted R^2 of about 12%, and estimated coefficient of 1.662 for EPS_{IFRSs} and 0.358 for $BVPS_{IFRSs}$. Relative to results from the A-share market, the explanatory power of the IFRSs-based information for B-share prices (15%) is also higher than that for the A-share market (7%). The theory of information asymmetry appears to be supported.

5.4.2 Relative value relevance of CASs- and IFRSs-based accounting information

The J-test is performed in order to establish the statistical significance of the relative value relevance between the CASs –based and IFRSs-based information in the B-share market. The results for the three time periods are presented in Table 5.7.

TABLE 5.7

J-test results for the CASs- and IFRSs-based information in the B-share market

Panel A: J-test results for period 1994-1997

	CASs model as the reference hypothesis: $P_{B,it} = \mu_0 + \mu_1 EPS_{CASs\,it} + \mu_2 BVPS_{CASs\,it} + \mu_3 PRICEB_{IFRSs\,it} + \nu_{it}$				IFRSs model as the reference hypothesis: $P_{B,it} = \delta_0 + \delta_1 EPS_{IFRSs\,it} + \delta_2 BVPS_{IFRSs\,it} + \delta_3 PRICEB_{CASs\,it} + \varphi_{it}$			
	EPS_{CASs}	$BVPS_{CASs}$	$PRICEB_{IFRSs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	$PRICEB_{CASs}$	Adjusted R^2
Coefficient	0.880	0.002	0.916	0.279***	1.701	1.062	0.213	0.278***
t-value	-0.747	-0.036	(4.315)***		-1.621	(3.275)***	-1.008	

Panel B: J-test results for period 1998-2004

	CASs model as the reference hypothesis: $P_{B,it} = \mu_0 + \mu_1 EPS_{CASs\,it} + \mu_2 BVPS_{CASs\,it} + \mu_3 PRICEB_{IFRSs\,it} + \nu_{it}$				IFRSs model as the reference hypothesis: $P_{B,it} = \delta_0 + \delta_1 EPS_{IFRSs\,it} + \delta_2 BVPS_{IFRSs\,it} + \delta_3 PRICEB_{CASs\,it} + \varphi_{it}$			
	EPS_{CASs}	$BVPS_{CASs}$	$PRICEB_{IFRSs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	$PRICEB_{CASs}$	Adjusted R^2
Coefficient	1.760	-0.003	0.776	0.144***	0.493	0.423	0.404	0.142***
t-value	(2.029)**	(-0.073)	(5.920)***		-1.017	(4.724)***	-1.043	

Panel C: J-test results for period 1994-2004

	CASs model as the reference hypothesis: $P_{B,it} = \mu_0 + \mu_1 EPS_{CASs\,it} + \mu_2 BVPS_{CASs\,it} + \mu_3 PRICEB_{IFRSs\,it} + \nu_{it}$				IFRSs model as the reference hypothesis: $P_{B,it} = \delta_0 + \delta_1 EPS_{IFRSs\,it} + \delta_2 BVPS_{IFRSs\,it} + \delta_3 PRICEB_{CASs\,it} + \varphi_{it}$			
	EPS_{CASs}	$BVPS_{CASs}$	$PRICEB_{IFRSs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	$PRICEB_{CASs}$	Adjusted R^2
Coefficient	0.979	0.013	0.869	0.156***	0.901	0.561	0.226	0.155***
t-value	-1.312	-0.311	(6.913)***		-1.912	(5.819)***	-1.35	

** Significant at the 5% level
*** Significant at the 1% level

Table 5.7 shows that, when the CASs-based information is used as the reference model, the null hypothesis that the IFRSs-based information has no additional explanatory power over the CASs model is rejected for all the three periods. In contrast, when the IFRSs-based information is used as the reference model, the null hypothesis that the CASs-based information has no additional explanatory power over the IFRSs-based information cannot be rejected at the 5% significance level. Therefore, the joint results of these two hypotheses yield the same outcome as for the A-share market, that is, the IFRSs-based information is more value relevant than the CASs-based information for the B-share market. This result is consistent with the expectation in Chapter 4 and with the findings of Bao and Chow (1999).

5.4.3 Summary of test results for the B-share market

Table 5.8 provides a summary of all the regression and J-test results for the three time periods examined. It can be concluded that both EPS_{CASs} and $BVPS_{IFRSs}$ have consistently been value relevant in relation to the B-share prices; while CASs-based BVPS only become value relevant for the period after 1998. Conversely, the IFRSs-based EPS is not value relevant in relation to the B-share prices for the period after 1998, even although it is value relevant for the full sample. The explanatory powers of both the CASs- and IFRSs-based information have also declined in the post-1998 period relative to the explanatory power for the period before 1998. Also, the adjusted R^2 of the IFRSs-based information is higher than that of the CASs-based information. This is confirmed by the results of the J-test, which show that the IFRSs-based information is more value relevant than the CASs-based information in the B-share market.

TABLE 5.8

Summary of regression and J-test results for the B-share market

Period	*CASs*			*IFRSs*			*J-Test*	
	EPS	BVPS	Adjusted R^2	EPS	BVPS	Adjusted R^2	CASs	IFRSs
1994- 1997	✔	✘	17%	✔	✔	28%	✘	✔
1998-2004	✔	✔	11%	✘	✔	13%	✘	✔
1994-2004	✔	✔	11%	✔	✔	15%	✘	✔

✔ Statistically significant at the 5% level or less

✘ Not statistically significant

5.5 Year-by-year regression results

To examine the association between accounting information and stock prices, and to gain further insights into the changes over the 11 years (1994 to 2004), yearly regressions using CASs-based EPS and BVPS, and IFRSs-based EPS and BVPS are performed on each class of shares. The results are presented in sub-section 5.5.1 for A-shares and sub-section 5.5.2 for B-shares.

5.5.1 Yearly regression results for A-shares

Table 5.9 presents the yearly regression results for the A-share market for the years 1994 to 2004. Panel A presents the yearly regression results for the association between A-share prices and CASs-based information, while Panel B reports the yearly regression results for the IFRSs-based information.

As can be seen from Panel A, there is a wide range of fluctuation in the coefficients of EPS and BVPS as well as the value of adjusted R^2. CASs-based EPS is statistically significant in the years before 1998, specifically, 1994, 1996 and 1997. In the years 1998 to 2002, EPS_{CASs} is not statistically significant. The value relevance of EPS_{CASs} is also significant in 2003 and 2004. This could suggest that EPS_{CASs} is considered unreliable by the A-share investors, owing to the changes in accounting standards since 1998, which give the managers of Chinese companies more freedom to use their own judgement. However, the management could either be inexperienced or prone to earnings manipulation. This argument is also supported by other researchers such as Chen, Sun and Wang (2002) and Sami and Zhou (2004). Consistent with the findings of Sami and Zhou (2004), the value relevance of $BVPS_{CASs}$ is statistically significant (at the 1% level) in 1997 and 1998.

Panel A also shows that the adjusted R^2 for most years are statistically significant, except for the years 2000 to 2002. The insignificance of the adjusted R^2 in these years indicates that the explanatory variables (i.e. EPS_{CASs} and $BVPS_{CASs}$) are not value relevant in relation to A-share prices. This finding is consistent with the results obtained by Sami and Zhou (2004) for the year 2000. They argued that instead of the financial statement numbers, possible explanatory factors for the share prices movements could be the various major events that happened around 2000 and 2001 in China.

TABLE 5.9

Yearly regression results for A-shares based on CASs and IFRSs information

Panel A: price model using CAS information: $P_{Ait} = \alpha_0 + \alpha_1 EPS_{CASs\,it} + \alpha_2 BVPS_{CASs\,it} + \varepsilon_{it}$				Panel B: price model using IFRS information: $P_{Ait} = \beta_0 + \beta_1 EPS_{IFRSs\,it} + \beta_2 BVPS_{IFRSs\,it} + \theta_{it}$		
Year	EPS_{CASs}	$BVPS_{CASs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	Adjusted R^2
	17.673	1.273		-12.161	3.133	
1994	(4.400)***	(1.040)	0.629***	(-1.643)	(1.789)*	0.153
	2.461	0.921		-6.472	2.014	
1995	(1.044)	(1.561)	0.061*	(-2.738)***	(3.339)***	0.213***
	8.977	0.002		0.969	4.181	
1996	(2.802)***	(0.006)	0.098**	(0.289)	(4.900)***	0.337***
	6.665	1.894		5.265	3.087	
1997	(2.410)**	(3.850)***	0.350***	(1.766)*	(4.783)***	0.435***
	1.818	1.393		-0.456	1.600	
1998	(1.065)	(4.024)***	0.321***	(-0.223)	(4.132)***	0.305***
	0.098	1.033		-5.478	1.677	
1999	(0.026)	(1.847)*	0.081**	(-1.728)*	(3.511)***	0.130***
	-6.938	1.121		-3.767	0.608	
2000	(-1.364)	(1.541)	0.006	(-0.995)	(1.190)	-0.005
	-0.441	0.241		0.912	0.268	
2001	(-0.147)	(0.703)	-0.019	(0.453)	(1.060)	-0.006
	0.315	0.051		1.522	0.410	
2002	(0.137)	(0.506)	-0.021	(1.213)	(1.903)*	0.048**
	6.460	0.280		3.761	0.522	
2003	(4.477)***	(1.689)*	0.323***	(2.444)**	(3.090)***	0.232***
	8.434	0.229		2.420	0.756	
2004	(5.217)***	(1.017)	0.377***	(1.803)*	(2.904)***	0.198***

* Significant at the 10% level
** Significant at the 5% level
*** Significant at the 1% level

These events can be summarised as follows:

1. The expectation of China's accession to the WTO,
2. The designation of Beijing as the site for the Olympic Games in 2008, boosting investors' confidence in the country;
3. The 'Develop the West' campaign (see detail in Chapter 2);
4. The restructuring of stock markets as mentioned in sub-section 2.4.1.

The effect of the abovementioned events on A-share prices can be seen in Figure 2.1 of Chapter 2 in which a peak in the A-share price is seen in the year 2000. The theory that A-share investors tend to rely more on local non-financial information, and are more prone to short-term speculations, is supported by the results which show that accounting numbers are not statistically significant for the years 2000, 2001 and 2002.

Another reason for the apparent irrelevance of CASs-based information, in relation to

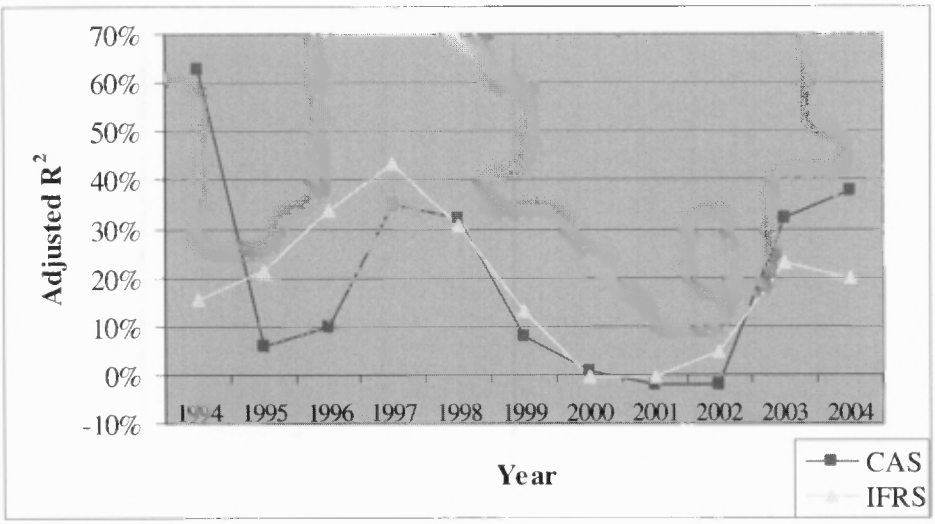
A-share prices during 2001 and 2002, could be the issuance of many new accounting statements at the beginning of 2001 and 2002. Of the 16 accounting standards issued, 8 of them become effective in 2001, and another 3 became effective in 2002 (refer to Table 2.2). The A-share market might have needed more time to become familiar with the effect of the new accounting standards.

In Panel B, it can be seen that IFRSs-based EPS is not value relevant in relation to the A-share prices, as it is not significant in most of the sample years. Furthermore, it is negatively associated with the A-share prices in the years 1994, 1995, 1998, 1999 and 2000. Although this negative association is not statistically significant for most of these years, it is significant at the 1% level in 1995, and marginally significant at the 10% level in 1999. Careful examination of the raw data in these years reveals that the main cause of this negative association is the negative earnings reported by most companies under IFRSs. This occurrence is consistent with observations by Chen, Gul and Su (1999). $BVPS_{IFRS}$ are significantly associated with the A-share prices for all the years except 2000 and 2001. The value of the adjusted R^2 is much higher and more significant in most of the 11 years than the comparative values in Panel A. This supports the findings of the full sample regression, in which the IFRSs-based information is shown to be more value relevant in relation to A-share prices than CASs-based information.

In order to establish the change over time in the explanatory power of the CASs-based and IFRSs-based information, the movement of the adjusted R^2 for both sets of accounting information is plotted over 11 years. Figure 5.1 shows this movement. Although there are big fluctuations in the values of adjusted R^2 over time, the difference in the explanatory power between the two models has, indeed, narrowed after 1998. This supports the expectation that CASs-based accounting information has become more value relevant after 1998. However, the gap seems to widen again in 2003 and 2004. In addition, the value of the adjusted R^2 of the CASs-based information seems to be higher than that of the IFRSs-based information in the last two years. This phenomenon could be as a result of the A-share investors becoming more familiar with the new accounting standards, which only became effective in 2001 and 2002. Also, it could be due to the fact that the CASs are tailored to suit the Chinese market, investors have therefore recently found it more relevant than the IFRSs.

FIGURE 5.1

Movements in adjusted R^2 of CASs- and IFRSs-based data in the A-share market



Consequently, the CASs-based information became more value relevant than IFRSs-based information in 2003 and 2004.

5.5.2 Yearly regression results for B-shares

Table 5.10 shows the yearly regression results between B-share prices and accounting information for the B-share market. Panel A of Table 5.10 shows the yearly regression results for the B-share market based on CASs numbers. In contrast to the A-share market, the F-tests show that the CASs-based information is significantly associated with B-share prices in all years, other than 1994. The statistical insignificance of CASs-based information in 1994 could be caused by the small sample size. The coefficients for EPS_{CASs} and $BVPS_{CASs}$ do not vary significantly over the sample period. Other than in 1994, 2000 and 2001, the coefficients of EPS_{CASs} are statistically significant. Similar to findings in the A-share market, the major economic events during 2000 and 2001 could be the reason why EPS_{CASs} are not value relevant. From 1997, $BVPS_{CASs}$ become value relevant in relation to B-share prices. The explanatory power of the CASs-based information varies quite significantly throughout the 11 years, but is generally much higher than for the comparative A-share market. Thus this finding again supports the observation that accounting information is more value relevant in relation to the B-share prices.

TABLE 5.10

Yearly regression results for B-shares based on CASs and IFRSs information

Panel A: price model using CAS information: $P_{Bit} = \mu_0 + \mu_1 EPS_{CASs\,it} + \mu_2 BVPS_{CASs\,it} + \nu_{it}$				Panel B: price model using IFRS information $P_{Bit} = \delta_0 + \delta_1 EPS_{IFRSs\,it} + \delta_2 BVPS_{IFRSs\,it} + \varphi_{it}$		
Year	EPS_{CASs}	$BVPS_{CASs}$	Adjusted R^2	EPS_{IFRSs}	$BVPS_{IFRSs}$	Adjusted R^2
	2.365	0.103		1.190	0.734	
1994	(1.863)*	(0.267)	0.143	(0.810)	(2.11)*	0.203*
	3.563	0.103		1.257	0.560	
1995	(6.377)***	(0.750)	0.503***	(1.656)	(2.889)***	0.212***
	5.088	0.002		2.699	1.820	
1996	(3.028)***	(0.015)	0.121**	(1.591)	(4.201)***	0.328***
	3.837	0.589		3.217	1.000	
1997	(4.058)***	(3.501)***	0.440***	(3.213)***	(4.677)***	0.328***
	2.263	0.389		1.800	0.449	
1998	(6.006)***	(5.088)***	0.684***	(4.204)***	(5.544)***	0.682***
	3.049	0.267		0.294	0.625	
1999	(4.421)***	(2.623)***	0.589***	(0.498)	(7.051)***	0.549***
	-0.262	0.728		0.084	0.642	
2000	(-0.123)	(2.388)**	0.132***	(0.053)	(2.998)***	0.124***
	0.876	0.289		0.637	0.302	
2001	(0.809)	(2.342)**	0.098***	(0.857)	(3.242)***	0.111***
	2.188	0.039		0.949	0.429	
2002	(2.451)**	(0.991)	0.067**	(2.251)**	(5.921)***	0.111***
	4.726	0.341		2.852	0.488	
2003	(7.152)***	(4.478)***	0.626***	(3.631)***	(5.657)***	0.476***
	7.295	0.236		2.362	0.649	
2004	(7.255)***	(1.689)*	0.556***	(2.593)***	(3.679)***	0.313***

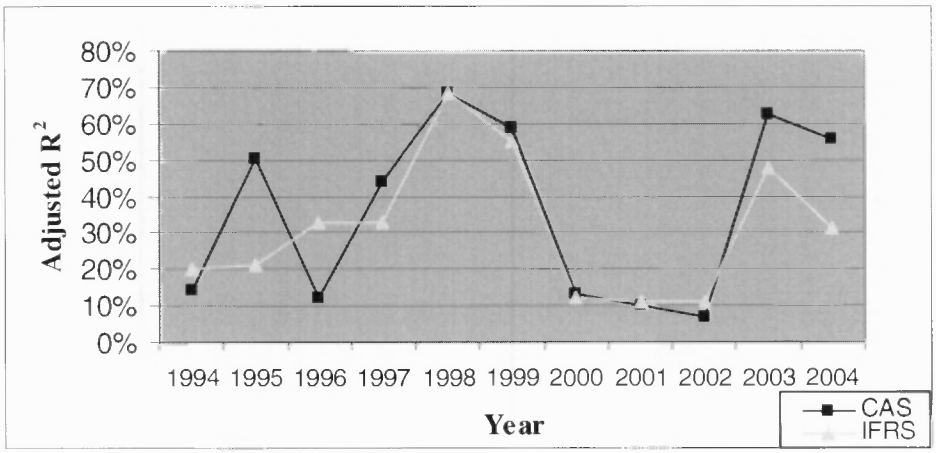
* Significant at the 10% level
** Significant at the 5% level
*** Significant at the 1% level

Panel B of Table 5.10 presents the regression results for B-shares based on IFRSs figures. The F-tests reveal that the IFRSs-based information is significantly associated with B-share prices at the 1% level in all years other than 1994. The regression coefficients of EPS_{IFRSs} are statistically significant in 1997, 1998 and the years 2002 to 2004. The coefficients of $BVPS_{IFRSs}$ are statistically significant throughout the sample period at the 1% level, except for 1994, which is significant at the 10% level. Thus, the B-share prices are more closely associated with $BVPS_{IFRSs}$ than with EPS_{IFRSs}. Overall, the year-by-year regressions show that the IFRSs-based information is closely associated with B-share prices throughout the sample period. This finding is consistent with the results obtained by Sami and Zhou (2004). Therefore, it supports the earlier finding that accounting information is more value relevant in the B-share market than in the A-share market.

Figure 5.2 below shows the comparison of the movement of adjusted R^2 for the CASs-based information and IFRSs-based information over the 11-year period. Similar to the pattern experienced in the A-share market, there is also a big fluctuation in the value of adjusted R^2 over time. The differences in the explanatory powers of the two sets of financial statements narrowed after 1998, but widened again in 2003 and 2004. In 2003 and 2004, the CASs-based information has higher explanatory power than the IFRSs-based information. This could be due to the improvements made to CASs over time thus making the CASs-based accounting information more relevant than the IFRSs numbers.

FIGURE 5.2

Movements in adjusted R^2 of CASs- and IFRSs-based data in the B-share market



5.6 Summary

The results presented in this chapter are based on the methodology outlined in Chapter 4. The analysis is performed to address the research objective stated in Chapter 4 and is done by examining the A- and B-share markets separately for the three periods (1994 to 1997, 1998 to 2004 and 1994 to 2004).

For the A-share market, it was found that both EPS_{CASs} and $BVPS_{IFRSs}$ are value relevant in all three periods. CASs-based BVPS became value relevant for the period 1998 to 2004, and this seems to concur with findings in other international markets which show an increase in the value relevance of BVPS over time. It could also be as a result of the convergence of CASs towards IFRSs after 1998, making CASs numbers

more relevant. However, EPS_{IFRSs} did not seem to be closely associated with the A-share prices in any of the periods examined. This could be due to the fact that the earnings figures for most Chinese companies tend to be negative when based on IFRSs, thus rendering EPS_{IFRSs} not value relevant. Despite the narrowing in the differences of the explanatory powers between the CASs- and IFRSs-based information over time, the J-test results reveal that the IFRSs-based information is still relatively more value relevant than the CASs-based information for all three periods.

In the B-share market, the regression results are similar to those of the A-share market especially after 1998. For example, before 1998, EPS_{IFRSs}, EPS_{CASs} and $BVPS_{IFRSs}$ are value relevant in the B-share market. For the period after 1998, CASs-based EPS and BVPS, together with IFRSs-based BVPS are value relevant in both markets. The regression results show that accounting information are more closely associated with B-share prices than with A-share prices, irrespective of whether it is CASs- or IFRSs-based. This seems to suggest that due to information asymmetry in the B-share market, the B-share investors tend to focus more on accounting information in making their investment decisions. Alternatively, it could also mean that B-share investors are better able to extract more meaningful information from the accounting numbers for investment decisions than the A-share investors are. Similar to the results in A-share market, the J-test results reveal that the IFRSs-based information is more value relevant than the CASs-based information for all the periods. This outcome is also consistent with the expectation discussed in Chapter 4.

Lastly, yearly regression results are also examined. It is found that for the years 2000 to 2002, CASs-based accounting information was not value relevant in relation to the A-share prices. This phenomenon could be due to two reasons. Firstly, it could be due to special events (such as China's joining the WTO and winning the right to host the Olympic Games in 2008) that occurred in those years, which might have influenced investment decisions more than accounting information. Secondly, it could be due to unfamiliarity with the new Chinese accounting standards which became effective in 2001 and 2002.

In contrast, yearly regression results for the B-share market seem to be more stable than those for the A-share market. Both the CASs- and IFRSs-based information are significantly associated with B-share prices in each year of the sample period. In

addition, the yearly adjusted R^2 values are consistent with the findings for the full sample period showing that B-share prices are more closely related to accounting information than A-share prices. This finding is also consistent with that obtained by Sami and Zhou (2004).

Observations from the comparison of the movement in the adjusted R^2 for the CASs- and IFRSs-based information over the 11 years support the expectation that the differences in the explanatory powers of the CASs- and IFRSs-based information have decreased after 1998 for both the A- and B-share markets. However, these differences in explanatory powers seem to diverge again in 2003 and 2004. Interestingly, this time, the CASs-based information is more closely associated with both the A- and B-share prices than IFRSs-based information. It is suggested that the investors might have become more familiar with the new CASs issued in 2001 and 2002.

Overall, it can be concluded that, the IFRSs-based accounting information has been more value relevant than the CASs-based information in relation to both A- and B-share prices. This is true for all the three periods 1994 to 1997, 1998 to 2004 and 1994 to 2004. The effect of convergence towards IFRSs is seen in the narrowing of the differences in the explanatory powers between these two sets of accounting information over time. Furthermore, the regression results of this dissertation also provide empirical evidence suggesting that IFRSs-based accounting information is value relevant in developing countries such as China.

Chapter 6
CONCLUSIONS

6.1 Introduction

This chapter presents the summary of this dissertation and provides suggestions for future research. The rest of this chapter is organised as follows. Section 6.2 summarises the background to the development of CASs and the literature review; section 6.3 presents the research approach and principal findings; and section 6.4 briefly describes further insights provided by this research. Finally, section 6.5 recommends areas for future research.

6.2 Summary

Chinese accounting has gone through many changes driven mainly by the country's political and economic changes. The Chinese accounting system has evolved from a traditional cash-based system in ancient times, to the UAS used in the centrally planned economy, when the Chinese Communist Party took over control of China in 1949. Following the economic reform in 1979, which focused on economic reconstruction and sought to attract foreign capital, the accounting system changed again to one similar to that of a market economy. The development of accounting standards in China involved the convergence of CASs towards IFRSs. An important step was taken in 1998 when differences between CASs and IFRSs were significantly narrowed with respect to management's choice in making accounting estimates.

Stock markets were also developed after the 1979 reforms to facilitate the raising of capital by Chinese companies. However, to maintain control of the economy and privatised SOEs, the Chinese government allowed Chinese companies to issue A-shares to domestic investors and B-shares to foreign investors. In terms of financial reporting, two sets of financial statements are required to be issued. CASs-based financial statements are prepared for A-share investors, while IFRSs-based financial statements are prepared for B-share investors. This unique characteristic in the Chinese stock market has created an opportunity to examine the relative value relevance of financial statements based on CASs and IFRSs.

According to the IASB (2005, p 38) "the objective of financial statements is to provide information about the financial position, performance and changes in financial position of an entity that is useful to a wide range of users in making economic decisions." One approach to measuring the usefulness of financial statements is the study of information content or value relevance of accounting information in relation to share prices. An examination of prior studies on value relevance in China reveals several limitations. Firstly, most studies have a sample period of 5 years which ends before 1998, the year when major changes in CASs began. Secondly, most of the studies only examine the relative value relevance of CASs-based and IFRSs-based accounting data in relation to prices in the B-share market. The objective of this dissertation is therefore to investigate the relative value relevance of the CASs-based and IFRSs-based accounting information (earnings and book values of equity) in relation to both A- and B-share prices over the following periods: (a) 1994 to 1997, (b) 1998 to 2004, and (c) 1994 to 2004.

6.3 Approach to this dissertation and principal findings

To accomplish the objective of this dissertation, 86 firms which issued both A- and B-shares and are listed on the Chinese stock exchanges between 1994 and 2004 were identified. For all the three periods, the price model was used to test the association between accounting information based on CASs and IFRSs, and A- and B-share prices. For each period, the J-test was employed to determine the relative value relevance of accounting information based on the two sets of accounting standards, in relation to the A- and B-share prices. Finally, yearly regression tests were conducted to provide insights into the results obtained.

The principal finding of this dissertation was that, for all the three periods (pre-1998, post-1998 and the full sample period), and for both the A-share and B-share markets, the IFRSs-based accounting information was more value relevant than the CASs-based information. This indicates that there has been no change in the relative value relevance of accounting information based on the two sets of accounting standards. However, the magnitude of the differences between the explanatory powers of the CASs-based and IFRSs-based accounting information narrowed significantly in the post-1998 period (compared to the pre-1998 period) in both the A- and B-share markets.

6.4 Further insights provided by this research

The following conclusions were drawn from the results obtained:

- The regression results provided empirical evidence that IFRSs-based accounting information has value relevance in developing countries such as China.
- In the A-share market, EPS_{CASs} was value relevant, and $BVPS_{CASs}$ became value relevant only in the post-1998 period. In contrast, while $BVPS_{IFRSs}$ was significantly associated with the A-share prices, EPS_{IFRSs} was not.
- In the B-share market, EPS and BVPS (under both CASs and IFRSs) were value relevant in relation to B-share prices. However, in period after 1998 EPS_{IFRSs} was not value relevant.
- Yearly regression results further revealed that, during the years 2000 to 2002, both the EPS_{CASs} and $BVPS_{CASs}$ were not value relevant in relation to the A-share prices. It was suggested that the share prices in the A-share market were influenced mainly by the major economic events which occurred in those years.
- Yearly regression results for the B-share market further confirmed the value relevance of accounting information in that market.
- The results seemed to support the information asymmetry theory, which suggests that investors in the B-share market have less access to non-accounting information than those in the A-share market, hence they rely more on accounting information in making investment decisions.

6.5 Suggestion for future research

The value relevance of accounting information in China has not yet been exhausted as a topic of research. The following aspects are suggested as possible areas for future research:

- It would be interesting to conduct a study on the behaviour of Chinese investors using either an interview, questionnaire or protocol analysis technique (for example, Campbell, 1984) and determine the extent to which the results support the implications and conclusions drawn from the statistical findings of this dissertation.
- The extent to which the A-share investors, B-share investors and financial analysts use CASs- and IFRSs-based financial statements could also be

investigated.

- It might be worth conducting a study on the incremental value relevance of IFRSs-based information over CASs-based information once the harmonisation of CASs with the IFRSs is completed, to determine if it would still be necessary to continue to require Chinese companies to prepare the two sets of financial statements.

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Appendix A

Characteristics of traditional Chinese accounting: 1949-1978

ORIENTATION

- Primary objective directed toward accountability and stewardship consistent with the needs of a planned economy.
- Utilizes a type of fund accounting.
- Emphasis on uniform accounting system for all enterprises to facilitate integrating information into the national economic plan.
- Accounting principles are formalized into national law.

ASSETS

- Viewed as applications of funds provided by the state or other sources.
- Values based on historical costs. Long-term assets depreciated using straight-line method.
- Inventories valued at planned price in accordance with the central economic plan.
- Transactions cleared through the state bank on a cash basis resulting in very small amounts of receivables.

LIABILITIES

- Viewed as fund sources by the enterprise. A fund source is matched with each asset group.
- Major liabilities consist of funds received from the state and bank loans.

EQUITY

- Strict distinction between liabilities and equity typically not maintained due to state ownership.
- Profits allocated to state funds or enterprise's funds.

REVENUE/EXPENSE/PROFIT

- Accrual basis used for revenue and expense determination.
- Standard prices utilized, based on economic plan.

FINANCIAL REPORTING AND DISCLOSURE

- Financial statements include a balance sheet reflecting fund applications and sources, an income statement, and numerous detailed supporting schedules and cost analyses.
- Conventional footnote disclosure lacking due to uniform accounting system and extensive reporting detail.
- Financial reports required monthly, quarterly and/or annually.

Source: Winkle, Huss and Chen, 1994

Appendix B

Characteristics of "Accounting Standards for Business Enterprises" (1992 ASBE)

ORIENTATION

- A uniform accounting system conforming to international standards (primarily US GAAP) designed to meet the needs of China's socialist market economy.
- These standards are incorporated into law.
- The accrual basis, the concept of consistency, the matching of revenue and expenses and the quality of objectivity are all required by the standards.

ASSETS

- The use of historical cost for assets is specified and a clear distinction between revenue expenditures and capital expenditures must be made.
- Assets should be classified into the usual categories consistent with U.S. standards.
- Inventories may be valued using most conventional methods, including LIFO.
- Fixed assets may be depreciated using the straight-line or the activity method. If the enterprise receives approval, accelerated depreciation may be used.
- Intangible assets, including goodwill, are recognized and are to be amortized over the period benefited.

LIABILITIES

- Liabilities may be classified as current or long-term and liability accounting generally follows U.S. standards.

EQUITY

- Equity is classified into Invested Capital, Capital Reserve, Surplus Reserve and Undistributed Profit. Invested Capital represents the face value of stock issued and government investment. Capital Reserve represents stock premium, asset revaluation increments, donated capital, etc. Surplus Reserve is analogous to appropriated retained earnings in U.S. practice and Undistributed Profit is analogous to unappropriated retained earnings.

REVENUE/EXPENSE/PROFIT

- Revenues are determined using the accrual basis consistent with U.S. practice, including the completed contract and percentage-of-completion methods for long-term projects.
- Expenses are determined using the accrual basis and actual costs incurred. Enterprises using standard or estimated costs must adjust variances to actual at the end of the current month.
- The plan for distribution of profits must be shown in the income statement or the notes to the financial statements.

FINANCIAL REPORTING AND DISCLOSURE

- Required reports consist of a balance sheet, an income statement, a statement of changes in financial position (or cash flow statement), supporting schedules, notes and explanatory statements.
- Comparative financial statements are required.
- Consolidated financial statements are required in cases of 50% or more ownership except for enterprises not suitable for consolidation.
- Notes to financial statements must disclose accounting methods adopted, changes in accounting methods, descriptions of unusual items and other details and explanations.

Source: Winkle, Huss and Chen, 1994

Appendix C

Scope of 2001 "Accounting System for Business Enterprises" (2001 ASBE)

Defines fundamental accounting principles including going concern, accounting period, substance over form, consistency, timeliness, understandability, accrual basis, matching, impairment recognition, prudence, materiality, and measurement currency vs. presentation currency.
Defines the basic elements of financial statements: assets, liabilities, owners' equity, revenues, expenses, and profits - definitions are similar to IFRSs.
Specifies classifications within the asset, liability, and equity elements.
Specifies recognition and measurement principles for a wide variety of assets and liabilities.
Specifies revenue recognition principles for goods, services, royalties, and interest.
Specifies expense recognition principles for bad debts, cost of good sold, depreciation, major overhauls, and impairment of assets.
Requires that expenses be classified into operating, administrative, and financing and that profit be classified between operating profit, investment income, subsidy income, and several other non-operating income categories.
Specifies accounting principles to deal with non-monetary transactions, assets contributed by investors, income taxes, foreign currency transactions, changes in accounting policies, changes in estimates, corrections of errors, post-balance sheet events, contingencies, and related party transactions.
Defines the content of a financial and accounting report (which financial statements are presented annually, half-yearly, quarterly, and monthly), minimum notes to the financial statements, and how soon reports should be published.
Specifies principles for consolidated financial statements and accounting for investments in joint ventures.
Requires a management discussion of financial condition similar to, but less detailed than, those required in the United States or the United Kingdom.

Source: Deloitte Touche Tohmatsu, 2006a

Appendix D

List of companies issuing A- and B- shares on the SHSE and the SZSE

Shanghai Stock Exchange			
1	SVA Electron	23	Shanghai Friendship
2	Shanghai Erfangji	24	SGSB Group
		25	Shanghai Mechanical &
3	Dazhong Transportation.		Electrical Industrial
4	Shanghai Wingsung Data Tech.	26	Shanghai Baosight Software
		27	Shanghai Material Trading
5	China First Pencil		Centre
		28	Shanghai Automation
6	China Textile Machinery		Instrumentation
	Shanghai Sanjiu Technology	29	Shanghai Posts & Telecom.
7	Development		Equipment
		30	Shanghai Lujiazui Finance
			and Trade Zone
8	Shanghai Chlor-Alkali Chemical		Development
9	Shanghai Tyre & Rubber Co.	31	Huaxin Cement
		32	Shanghai Jinjiang
10	Shanghai Highly		International Hotels
		33	Inner Mongolia Eerduosi
11	Shanghai Jinqiao Export Processing		Cashmere Products
12	Shanghai Wai Gaoqiao Free Trade Zone	34	Huadian Energy
		35	Tianjin Marine Ship. (Susp
13	Shanghai Lian Hua Fibre		30/04/05)
14	Shanghai Jinjiang International Industrial	36	Shanghai Worldbest
15	Shanghai Forever	37	Eastern Communications
		38	Huangshan Tourism
16	Phoenix		Development
17	Shanghai Haixin Group	39	Shanghai Kaikai Industrial
18	Shanghai Yaohua Pikington Glass.	40	Hainan Airlines
19	Shanghai Dajiang Stock	41	Jinan Qingqi Mcycles.
		42	Shanghai Zhenhua Port
20	Shanghai Diesel Engine		Machinery
21	Daying Modern Agriculture (Susp	43	
	18/05/05)		Jinzhou Port
22	Shanghai Sanmao Enterprise	44	Shanghai Matsuoka

Shenzhen Stock Exchange			
45	China Vanke	66	Shijiazhuang Baoshi Electronic
46	Shenzhen Properties & Resources Development	67	Wuxi Little Swan
		68	Guangdong Provincial Express way Development
47	CSG Holding.		
48	Konka Group	69	Shandong Chenming Paper
49	Shenzhen China Bicycles	70	Hainan Pearl River Holding
50	Shenzhen Victor Onward Textile	71	Livzon Pharmaceutical Group
51	Shenzhen Shenbao Industrial	72	Hefei Meiling
52	Shenzhen Huafa Electronics	73	Dalian Refrigerator
		74	Guangdong Electrical Power Development
53	Shenzhen Chiwan Warf Holding.		
54	China Merchants Properties Development	75	Foshan Electrical & Lighting
55	Shenzhen Tellus Holding	76	Jiangling Motors
56	Shenzhen Fiyta Holding	77	Hubei Sanonda
57	Shenzhen Accord Pharmaceutical	78	Changchai
58	Shenzhen Special Economic Zone	79	Weifu High Technology
59	Guangdong Sunrise Holding	80	Anhui Gujing Distillery
		81	Hainan Donghai Tourism Centre Holding
60	Shenzhen Nanshan Power Station		
61	China International Marine	82	Chongqing Changan Automobile
62	Shenzhen Textile Holding	83	BOE Technology Group
63	China Fangda Group	84	Luthai Textile
64	Shenzhen International Enterprise	85	Bengang Steel Plates
65	Shenzhen SEG Co.	86	Yantai Changyu Pioneer Wine