

**THE INFLUENCE OF INSTITUTIONAL FACTORS ON
THE VALUE RELEVANCE OF ACCOUNTING
INFORMATION: EVIDENCE FROM JORDAN**

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**DOCTOR OF PHILOSOPHY
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**THE INFLUENCE OF INSTITUTIONAL FACTORS ON THE VALUE
RELEVANCE OF ACCOUNTING INFORMATION:
EVIDENCE FROM JORDAN**

By

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Othman Yeop Abdullah Graduate School of Business,
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ABSTRACT

The purpose of the study was to present empirical evidence on the value relevance of accounting information in Jordan; whether institutional factors influence this value relevance and to determine which share price proxy is more reliable in indicating value relevance. The study examines the influence of institutional factors (foreign ownership, trading volume, financial disclosure time, financial disclosure level, number of shareholders, listing status, company's age and type of industry) on the value relevance of accounting information (earnings, book value and cash flows relative to three share price proxies including average annual share price, annual closing share price and share price after a three-month period following the financial year-end) for Jordanian services and industrial companies during the period from 2004-2009. The study found that book value has the greatest value relevance and the best predictor for firm value. The value relevance of earnings and book value is greater for companies having foreign ownership, larger trading volume, larger shareholder numbers that conform to financial disclosure time, that are listed on the main board and that are older in age. Value relevance of book value is greater for companies complying with disclosure requirements and for services companies. Finally, annual closing share price proxy is more reliable in detecting the value relevance of accounting information. The findings suggest that market participants might be able to extract the firm value through the aforementioned institutional factors. The study extends the valuation model by including cash flows together with earnings and book value. The findings demonstrate that there is a shift away from earnings towards book value as the basis of firm valuation.

Keywords: Value Relevance, Accounting Information, Institutional Factors, Jordan.

ABSTRAK

Tujuan kajian ini ialah untuk menjelaskan kajian empirikal terkini tentang nilai kerelevanan maklumat perakaunan di Jordan. Kajian ini meneliti sama ada faktor-faktor institusi mempengaruhi dan menentukan proksi harga saham yang boleh dipercayai sebagai petunjuk kepada nilai kerelevanan. Kajian ini mengkaji pengaruh faktor-faktor institusi seperti pemilikan asing, jumlah dagangan, masa penzahiran kewangan, tahap penzahiran kewangan, bilangan pemegang saham, status penyenaraian, usia syarikat dan jenis industri. Faktor-faktor ini mempunyai pengaruh terhadap nilai kerelevanan pendapatan, nilai buku dan aliran tunai berbanding dengan tiga proksi harga saham iaitu purata harga saham secara tahunan, harga saham yang ditutup pada setiap akhir tahun dan harga saham selepas tiga bulan berakhirnya tahun kewangan. Penelitian dilakukan terhadap syarikat-syarikat perkhidmatan dan perindustrian di Jordan dalam tahun 2004 hingga 2009. Hasil kajian juga mendapati bahawa nilai buku mempunyai nilai kerelevanan yang lebih tinggi dan merupakan faktor peramal terbaik bagi nilai firma. Kerelevanan nilai pendapatan dan nilai buku adalah lebih besar bagi syarikat-syarikat yang mempunyai pemilikan asing, jumlah dagangan yang lebih besar, bilangan pemegang saham yang lebih tinggi, menepati masa penzahiran kewangan, tersenarai dalam papan utama dan syarikat-syarikat yang telah lama ditubuhkan. Selain itu, nilai kerelevanan bagi nilai buku juga didapati lebih besar bagi syarikat-syarikat yang mematuhi arahan pendedahan dan lebih menonjol bagi syarikat-syarikat yang menawarkan perkhidmatan. Akhirnya, proksi harga saham tutup tahunan lebih boleh dipercayai dalam mengesan nilai kerelevanan maklumat perakaunan. Hasil penemuan kajian ini menggambarkan bahawa peserta pasaran mungkin dapat menyaring nilai firma melalui faktor-faktor institusi yang dinyatakan di atas. Kajian ini juga mengubah suai model penilaian dengan memasukkan aliran tunai bersama-sama dengan pendapatan dan nilai buku. Hasil kajian menunjukkan bahawa terdapat peralihan ketara daripada pendapatan kepada nilai buku sebagai asas penilaian firma.

Kata kunci: Nilai Kerelevanan, Maklumat Perakaunan, Faktor-Faktor Institusi, Jordan.

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LIST OF ABBREVIATIONS

AGE	Company's Age
AP	Average Annual Share Price
ASE	Amman Stock Exchange
ATM-share price	Share Price after Three Months Period Following the Financial Year-End
BV	Book Value of Equity
CF	Cash Flows from Operation
CP	Annual Closing Share Price
CSRSC	Concept and Standards Research Study Committee
DLVL	Disclosure Level
DTIM	Disclosure Time
DVs	Dependent Variables
E	Earnings
EMH	Efficient Market Hypotheses
FASB	US Financial Accounting Standards Board
FORN	Foreign Ownership
FS	Financial Statements
IAS	International Accounting Standards
ID number	Identification Diagnostic Number
IFRS	International Financial Reporting Standards
IND	Industrial Companies

IVs	Independent Variables
JCB	Jordan Central Bank
JSC	Jordan Securities Commission
LEVRG	Company's Leverage
LSTUS	Listing Status
MNCs	Multinational Companies
MTI	Minimum Trading Unit
ONS	Office for National Statistics in UK
SHRHNO	Shareholders Number
SIZE	Company's Size
SRV	Services Companies
TRDV	Trading Volume
TYIND	Type of Industry

CHAPTER ONE

INTRODUCTION

1.0. Introduction

The relationship between the market values of equity and the information disclosed in financial statements (hereafter, FS) has been examined more than 40 years back starting with Ball and Brown (1968). The ability of FS to summarize information that reflects the changes in stock values can be considered as relevant information. Value relevance, as relationship between accounting information and market values (Barth et al., 2001), is defined as the power of specific accounting information to explain the variance in share price where greater explanatory power indicates greater value relevance (Anandarajan and Hasan, 2010). Many studies provide definitions closely related to the above meaning (Beaver, 1968; Ohlson, 1995; Barth, 2000). The common denominator in these definitions is that accounting information is considered as value relevant if it has a significant relationship with market values (Barth et al., 2000). The term value relevance has been used in literature to extract the incremental information or the explanatory power of FS in the equity market by examining the relationship between accounting information and share prices.

To indicate the relevant information, accounting information and share price relationship has been tested in prior research. It was found in the empirical research that earnings and book value can be used to predict firm value. In particular, the relationships between earnings, book value and a combination of both with share price have been examined and

found to be significant (Ball and Brown, 1968; Ball, 1972; Kaplan and Roll, 1972; Collins and Kothari, 1989; Burgstahler and Dichev, 1997; Anandarajan et al., 2006; Anandarajan and Hasan, 2010).

Many studies have investigated the value relevance of earnings, book value, and cash flows individually; earnings (Ball and Brown, 1968; Beaver et al., 1980; Kothari and Zimmerman, 1995; Ely and Waymire, 1999; Lev and Zarowin, 1999; Bao and Bao, 2001; Powell et al., 2001; Huson et al., 2001; Bao, 2004; Bao and Bao, 2004; Pan, 2007; Bartram, 2007; Chen and Zhang, 2007; Habib and Weil, 2008; Gee-Jung, 2009; Anandarajan and Hasan, 2010), book value (Burgstahler and Dichev, 1997; Bao and Bao, 2001; Bao, 2004; Habib and Weil, 2008; Gee-Jung, 2009; Suwardi, 2009), cash flows (Wilson, 1987; Bowen et al., 1987; Bernard and Stober, 1989; Livnat and Zarowin, 1990; Lev and Zarowin, 1999; Bartram, 2007; Chen and Zhang, 2007; Gee-Jung, 2009), or in a combination of earnings and book value (Amir and Lev, 1996; Collins et al., 1997; Francis and Schipper, 1999; Ely and Waymire, 1999; Lev and Zarowin, 1999; Bao and Bao, 2001; Anandarajan et al., 2006; Habib and Weil, 2008; Gee-Jung, 2009; Kanagaretnam et al., 2009), earnings and cash flows (Gee-Jung, 2009), and book value, and cash flows (Gee-Jung, 2009).

These studies concluded that these accounting variables are value relevant or decline in value relevance over time. Since there are limited studies (Khanagha et al., 2011) that examine the value relevance of earnings, book value, and cash flows simultaneously, this

study extends the literature by providing evidence about the value relevance of these accounting variables.

In Jordan, the value relevance of earnings and cash flows has been investigated in the Amman Stock Exchange (hereafter, ASE). The results supported earnings (Hadi, 2006; Anandarajan and Hasan, 2010) but not cash flows (Hadi, 2006). This study examines the value relevance of earnings, book value of equity, and cash flows from operation simultaneously for Jordanian companies listed in ASE.

There is a renaissance of interest in institutions as a factor that could shape economic performance. The notion of institutions itself is not yet a coherent concept, at least not across the various users of the term (Nelson and Sampat, 2001). Institutions are the humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights) (North, 1991: 97).¹ Institution's functions could be summarized by providing socioeconomic developments, having more constraints and opportunities, affecting all activities and defining growth possibilities (Decuir-Viruez, 2003). Economy is represented by the effect of the individual actions molded by the inherited culture and the effect of the social institutions (Amin, 1999) as formal and informal institutional factors.

¹ Decuir-Viruez (2003) sees the economy consisting of collective effects of formal and informal institutions. The formal institutions consist of rules, laws, constitutions, and property rights while the informal institutions consist of individual habits, groups' routines, customs, traditions, social norms and values.

Many accounting valuation studies categorized the institutional factors into country- and firm-specific factors (or into formal and informal institutions factors). While factors that are specific for a particular country will depend on the rules issued by the country's regulators, those that are specific for a firm will depend on the social norms and values. Many studies have examined the impact of institutional factors on financial reporting (Ball et al. 2000; Holthausen, 2003; Piotroski and Roulstone, 2004; Godfrey et al., 2006; Liu and Liu, 2007). Other studies have related the institutional factors with the nature of the firm or business (Williamson, 1985; Piotroski and Roulstone, 2004; Abayadeera, 2010b). These authors focused on firm's boundaries, organization, governance, and ownership pattern.

The following institutional factors are used in the current study as they are unique to Jordan Securities Commission and Amman Stock Exchange:

1. Foreign ownership - foreign investments in a local company according to Jordanian laws.²
2. Trading volume - trading in ASE is bounded by directives and time set by JSC instructions.
3. Financial disclosure time - announcement time required by JSC for a company to submit its preliminary, semiannual and annual financial reports.

² According to Investment Promotion Laws (24 in 1995 and 54 in 2000), foreign investments must not be more than 50% of projects in: construction and contracting; wholesale and retail; sea, air and train transport; wastewater treatment; food services; travel agencies; import and export services; advertising; and a number of business-related and commercial services (including finance). No foreign participation is allowed in: security services; sports clubs; stone quarrying; customs clearance services; and land transport other than trains. In any case foreign investments must not be less than Jordanian Dinars 50.000, with exception of investments in public shareholding companies.

4. Financial disclosure level - financial reports of a company complying with the disclosure requirements in accordance with IASs requirements and the JSC instructions.
5. Shareholders number - depends on many aspects related to a specific company, sector, market etc.
6. Listing status - ASE companies have to comply with specific legal requirements in order to be listed in main or second board.
7. Company age - age is considered an important factor that might improve financial disclosure.
8. Type of industry - ASE companies are classified according to their type of economic activities.³

In the Jordanian context, the current study considers foreign ownership, trading volume, financial disclosure time and disclosure level, listing status and type of industry as institutional factors at a country level whereas shareholders number and company age have been chosen as institutional factors at firm level.

Many institutional factors can affect the value relevance of accounting information (Lev, 1989; Ali and Hwang, 2000; Bao, 2004; Anandarajan et al., 2006; Anandarajan and Hasan, 2010). This study attempts to investigate to what extent these factors can influence the value relevance of accounting information (earnings, book value of equity, and cash flows from operation) for Jordanian companies listed in ASE. This study

³ ASE has changed its classification from 4 sectors (banking, insurance, services, and industrial) into 3 main sectors including financial (banking and insurance), services and industrial sectors.

focuses on four groups of institutional factors that are related to economic factors (represented by foreign ownership and trading volume), corporate governance (represented by financial disclosure time and financial disclosure level), company's characteristics (represented by shareholders number, listing status and age) and finally the type of industry after controlling company's size and leverage.

Previous studies concluded a significant effect of the economic factors on firm value such as foreign ownership (Errunza and Senbet, 1981; Doukas and Travlos, 1988; Morck and Yeung, 1991; Doukas, 1995; Doukas and Lang, 2003) and trading volume (Beaver, 1968; Grundy and McNichols, 1989; Holthausen and Verrecchia, 1988, 1990; Kim and Verrecchia, 1991a, 1991b; Im et al., 2001; Roll et al., 2009). Bae and Jeong (2007) and Anandarajan and Hasan (2010) concluded that the influence of foreign ownership on value relevance of earnings is positive in Korean and Jordanian companies respectively.

Dontoh et al. (2004) and Liu and Liu (2007) ⁴ examined the impact of non-information-based trading volume and the percentage of total tradable shares respectively on the value relevance of earnings and book value. They found that there is no significant impact for trading volume on the value relevance of earnings and book value.

According to Hassan (2004), few studies investigated the relationship between firm value and disclosure requirements (Gelb and Zarowin, 2002; Lang et al., 2003). Greenstone et al. (2006) examined the influence of disclosure rules on firm value and found it to be

⁴ Wherever these studies are stated in the current study, trading volume term refers to the above measurements as adopted in these studies.

positive. The influence of financial disclosure level on the value relevance of earnings and earnings and book value (in combination) has been examined and was found to be significantly positive (Hassan, 2004; Anandarajan and Hasan, 2010).

Prior research examined how the financial disclosure can be affected by a company's characteristics such as shareholders number, listing status (Naser et al., 2002; Al Arussi et al., 2009), and company's age (Raffournier, 1995; Alsaeed, 2005; Cazavan and Jeanjean, 2007; Al Arussi et al., 2009). These characteristics are found to have a significant influence on financial disclosure. While a company's shareholders number positively affected its market value (Amihud et al., 1999; Hauser and Lauterbach, 2003), the influence of shareholders number, listing status and a company's age on the value relevance of earnings, book value, and cash flows has not been well researched especially in Jordan.

While many studies examined the value relevance of earnings, book value, or cash flows in services and industrial companies and provided mixed results (Bao, 2004; Anandarajan et al., 2006; Hadi, 2006; Vishnani and Shah, 2008; Gee-Jung, 2009; Suwardi, 2009; Anadarajan and Hasan, 2010), the impact of the type of industry on the value relevance of earnings and book value has been investigated in very few studies (Abayadeera, 2010a, 2010b). Therefore, the current study tries to extend these studies.

Since examining accounting information (earnings, book value, and cash flows) and share price relationship forms the basis in indicating the value relevance of these variables, the influence of four groups of institutional factors on the value relevance of these accounting variables for Jordanian companies is examined in the present study using share price in three proxies which are the average annual share price, annual closing share price and share price after a three-month period following the financial year-end (hereafter ATM-share price).

Earnings, book value, and cash flows value relevance is measured by the market's reaction to these variables. This reaction is reflected by the coefficients on these variables in a regression model using share price proxies as dependent variables and these accounting variables as independent variables. The moderating effect of four groups of selected institutional factors is reflected by the coefficients on the interaction variables in the valuation model.

1.1. Background of the study

While the value relevance of earnings, book value, and cash flows is widely researched in developed countries such as Europe and Northern America, a developing country like Jordan (and the Middle Eastern region) has been neglected (Alakra et al., 2009). Also, despite the growing importance of Jordan with respect to commerce, foreign ownership and importantly portfolio investment, it has been ignored in the extant literature (Anandarajan and Hasan, 2010). Only few studies have examined the value relevance of these accounting variables in Jordan (Hadi, 2006; Anandarajan and Hasan, 2010). The

limited valuation studies do not assist Jordanian companies to attain international status, attract foreign investment, and compete in global markets.

As mentioned before, the value relevance of earnings, book value, and cash flows individually and in a combination (of any two) have been widely investigated in prior research. Limited studies (Khanagha et al., 2011) have examined the value relevance of earnings per share, book value of equity per share, and cash flows per share simultaneously without any clear definition for cash flows measurement.⁵

The economic environment has a strong impact on accounting since the latter is a service function that operates within an economic framework (Enthoven, 1985). Although Jordan is making progress in opening up the economy and regulatory norms, it is still considered to have a relatively closed economy (Anandarajan and Hassan, 2010). Therefore, in a developing country, there is a need to examine the influence of the economic factors on the financial accounting and reporting (Dahawy, 2009). The previous studies focused on the impact of the economic factors on the financial disclosure or firm value. Boubakri et al. (2005) found that extending foreign ownership changes the companies' economic efficiency where the greater the extent of foreign ownership leads to greater economic efficiency.

⁵ Khanagha et al. (2011) did not limit whether they used cash flows from operation, financing, investment or total cash flows activities.

Jordan began applying International Accounting Standards (IASs) in 1990 (Assa'aideh, 1997) and adopted International Financial Reporting Standards (IFRSs), both issued by International Accounting Standard Board (IASB) (JSC, 2007). Particularly, adopting IAS/IFRS encourages foreign and domestic investors to invest in ASE (Alakra et al., 2009). Foreign ownership improves the firm activities and, as a result, increases corporate governance which in turn improves the quality of accounting information disclosure (Bae and Jeong, 2007). Jordan is characterized by (1) accounting standards that are issued by government decree; (2) monitoring bodies that have no effective control; (3) local financial and accounting policies that are not totally consistent with IFRS or US generally accepted accounting principles (GAAP); and (4) generally looser forms of regulation (Anandarajan and Hasan, 2010). Since the above factors may affect the financial disclosure quality, this study tries to examine the impact of these factors (financial disclosure time and financial disclosure level) on the value relevance of earnings, book value, and cash flows that has not been well researched before especially in Jordan.

Governance is not one-size fits all because corporate governance practices benefits vary depending on firm characteristics (Balasubramanian et al., 2010). For the purpose of this study, the impact of the company's characteristics are traced by the influence of the shareholders number, listing status and company's age on the value relevance of accounting information in Jordan. Since companies operate in a different type of industry, they may have different disclosure levels for the same item (Naser et al., 2002). Therefore, type of industry can record different levels for firm value.

Finally, the literature on valuation requires extension to ensure the improvements which occurred in valuation models (Lo and Lys, 2000). Different proxies (measurements) for share price in the literature have been employed. Therefore this study examines the value relevance of accounting information relative to three share price proxies to indicate which share price measure is more dependable in presenting this value.

1.2. Problem statement

As mentioned before, few studies have examined the value relevance of accounting information in a developing country such as Jordan. Even when developing countries have been investigated by few previous studies, these countries have been studied in groups making it difficult to discern the reporting practices in specific countries (Saudagaran and Meek, 1997; Chamisa, 2000; Dahawy et al., 2002). Some authors suggested that the Jordanian governance framework should be examined in more detail by future research (e.g. Alakra et al., 2009). Therefore, Jordanian companies have been selected by this study to extend the valuation research in this country. Since prior studies indicated that the accounting information (earnings, book value, and cash flows) has value relevance in developed countries, it is expected that these variables will be value relevant in Jordan as it is considered as a developing country in the Middle Eastern region. The value relevance of earnings, book value, and cash flows with the influence of the four groups of institutional factors after controlling company's size and leverage are discussed.

Since limited studies (Khanagha et al., 2011) have examined the value relevance of earnings per share, book value of equity per share, and cash flows per share simultaneously, the current study adds empirical evidence on this examination (including cash flows from operation per share) to the accounting literature to indicate the best predictor for firm value. It is expected that earnings will be the best predictor for market value in Jordan because it measures a company's performance and represents its profitability. In addition, many studies concluded that earnings have a significant positive relationship with share price which are reviewed in the next chapter. Since the value relevance of accounting information is influenced by many institutional factors as referred before, the influence of the four groups of institutional factors on the value relevance of the accounting information in Jordan is examined in this study.

Since Dontoh et al. (2004) and Liu and Liu (2007) examined the influence of trading volume on the value relevance of earnings and book value, and Bae and Jeong (2007) and Anandarajan and Hasan (2010) examined the influence of foreign ownership on the value relevance of earnings, the current study extends these studies by examining the impact of the economic factors as foreign ownership (in a local company) and trading volume (total number of shares traded for a company) on the value relevance of earnings, book value, and cash flows simultaneously that has not been well researched before especially in Jordan. Because companies' foreign ownership has a positive significant influence on value relevance of earnings (Bae and Jeong, 2007; Anandarajan and Hasan, 2010), it is expected for the current study to find a significant positive impact of foreign ownership on the value relevance of earnings, book value, and cash flows. A negative or

insignificant impact of trading volume on the value relevance of earnings and book value has been found (Dontoh et al., 2004; Liu and Liu, 2007). Trading volume is positively related to price change (Clark, 1973; Epps and Epps, 1976; Tauchen and Pitts, 1983) or noisily related to price change (Pfleiderer, 1984). The researcher has no clear idea about the impact of trading volume on the value relevance of earnings, book value, and cash flows in Jordanian companies.

As mentioned before, since limited studies have examined the influence of the financial disclosure level on the value relevance of earnings and book value (Hassan, 2004; Anandarajan and Hasan, 2010), this study tries to extend these studies by examining the impact of financial disclosure time and financial disclosure level on the value relevance of earnings, book value, and cash flows for Jordanian companies that adopted IAS/IFRS disclosure requirements (issued by JSC).

One of the most important goals of the FS preparation is to provide sufficient and timely information for decision makers who depend on this information when indicating firm value. Since FS will lose their usefulness if they lack the required information (Givoly and Palmon, 1982; Kross and Schroeder, 1984; IAS 1, 2007; Dahawy, 2009), it is expected for the current study to find a positive impact for the disclosure time and disclosure level on the value relevance of earnings, book value, and cash flows.

Since previous studies focused on the impact of company's characteristics on financial disclosure and few studies examined the influence of company's characteristics on firm

value (Amihud et al., 1999; Hauser and Lauterbach, 2003), this study extends previous studies by examining the impact of company's characteristics on the value relevance of earnings, book value, and cash flows that has not been well examined before especially in Jordan. It is expected for this study to find positive impacts for shareholders number and listing status on the value relevance of accounting information in Jordan because increasing shareholders number significantly influences the firm value (Amihud et al., 1999), and positively and significantly listing status influences the financial disclosure (Al Arussi et al, 2009). The researcher has no idea about the impact of company's age on the value relevance of accounting information since different conclusions have been found in previous studies. This is because, while Balasubramanian et al. (2010) refer that younger firms are likely to be faster growing then they are motivated to improve their financial disclosure, Camfferman and Cooke (2002) refer that old companies might improve their annual reports overtime and they concluded a significant impact of company's age on financial disclosure. This improvement may positively influence the value relevance.

While previous studies in Jordan examined the value relevance of accounting information such as cash flow in industrial sector (Hadi, 2006) and earnings in all ASE sectors (Anandarajan and Hasan, 2010), a study on the influence of type of industry on value relevance of earnings, book value, and cash flows has not been found particularly in Jordan. Therefore, the current study tries to examine the influence of ASE services and industrial sectors on the value relevance of earnings, book value, and cash flows. It is expected for this study to find that the value relevance of these variables will be

significantly influenced by the type of industry. Since prior valuation studies have concluded mixed findings for the value relevance of the accounting information according to type of industry without referring to its impact on the value relevance, the researcher has no clear vision whether the type of industry will positively or negatively influence the value relevance of earnings, book value, and cash flows.

The current study examines the relevance of earnings, book value, and cash flows as a relationship with three share price proxies to find whether there is a gap between the results from using different proxies for share price (average annual share price, annual closing share price and ATM-share price) and whether this will significantly influence the value relevance of these accounting information in Jordan. Consistent with the results of many studies in different financial markets (Beaver et al., 1980; Powell et al., 2001; Bao and Bao, 2001; Bao, 2004; Chen and Zhang, 2007), it is expected for this study to find that annual closing share price could be dependable in indicating the value relevance of accounting information.

1.3. Research questions

Based on previous sections, this study tries to answer the following questions:

1. Which accounting variable among earnings, book value, and cash flows is the best predictor for firm value?
2. Can foreign ownership and trading volume influence the value relevance of earnings, book value, and cash flows?

3. Do corporate governance variables (financial disclosure time and financial disclosure level) influence the value relevance of earnings, book value, and cash flows?
4. What are the specific characteristics of a company that influence the value relevance of earnings, book value, and cash flows?
5. Does type of industry influence the value relevance of earnings, book value, and cash flows?
6. Do different proxies for share price influence the value relevance of earnings, book value, and cash flows?

1.4. Research objectives

The overall objective of the study is to present evidence on the value relevance of the accounting information in Jordan as a developing country and whether the value relevance of accounting information is influenced by country- and firm-specific institutional factors. The specific objectives of the study are:

1. To examine which variable among earnings, book value, and cash flows is the best predictor for the firm value.
2. To examine whether foreign ownership and trading volume can influence the value relevance of earnings, book value, and cash flows.
3. To investigate whether financial disclosure time and financial disclosure level can influence the value relevance of earnings, book value, and cash flows.
4. To investigate whether company's specific characteristics can influence the value relevance of earnings, book value, and cash flows.

5. To examine whether type of industry can influence the value relevance of earnings, book value, and cash flows.
6. To examine whether different proxies of share price can influence the value relevance of earnings, book value, and cash flows.

1.5. Significance of the study

The significance of this study is firstly, although Jordan's capital market secured some very impressive growth rates within the last decades,⁶ Jordan has been neglected in the extant literature (Alakra et al., 2009; Anandarajan and Hasan, 2010). The current study contributes to the literature by extending the valuation studies to include Jordan as a developing country. The current study is the first in Jordan that examine the simultaneous effect of earnings per share, book value of equity per share, and cash flows from operation per share with other institutional factors on share price.

Secondly, while the influence of foreign ownership on the value relevance of earnings (Bae and Jeong, 2007; Anandarajan and Hasan, 2010) and trading volume on the value relevance of earnings and book value (Dontoh et al., 2004; Liu and Liu, 2007) have been examined, the influence of trading volume and foreign ownership on the value relevance of earnings, book value, and cash flows simultaneously has not been examined in Jordan as far as the researcher is concerned. Therefore, this study adds to the accounting

⁶ For the impressive growth in Jordanian capital market, please refer to sections 1.7, 2.2, 2.4.1, 2.4.2, 2.5.1, and 2.5.2.

literature whether the value relevance of these accounting variables will be influenced by foreign ownership and trading volume in Jordan.

Thirdly, since Hassan (2004) pointed out that limited studies have examined the association between information disclosure requirements and share price, and Anandarajan and Hasan (2010) examined the influence of disclosure level on the value relevance of earnings in Jordan, the current study extends these studies by examining the influence of the financial disclosure time and financial disclosure level (as the corporate governance variables) on the value relevance of earnings, book value, and cash flows in Jordan. So, this study is the first in Jordan in testing the impact of the financial disclosure time and financial disclosure level on the value relevance of these accounting variables.

Fourthly, few studies have examined the influence of company's shareholders number, listing status and age on firm value, as mentioned before. Therefore this study extends these studies by examining the impact of these company's characteristics on the value relevance of earnings, book value, and cash flows that has not been well examined before especially in Jordan.

Fifthly, in Jordan, providing more empirical evidence on valuation research is important to find whether the value relevance of the accounting information will vary according to economic sectors or in different financial markets and economic sectors. As mentioned before, few studies have examined the value relevance of accounting information

according to ASE sectors (Hadi, 2006; Anandarajan and Hasan, 2010), while the impact of the type of industry has not been examined in these studies. Therefore this study tries to fill this gap and add new evidence to the literature by examining the impact of type of industry on the value relevance of earnings, book value, and cash flows to assist investors by providing them the relevant information related to the type of industry that they can invest in.

Finally, this study contributes to literature by extending the method, models, and analysis of previous studies by including cash flows together with earnings and book value and by comparing the value relevance of earnings, book value, and cash flows using three different share price proxies. The results are important to investors and other market participants to indicate which proxy for share price and which variable could be dependable in representing firm value. The evidence that is provided by the current study can serve as a guideline to investors, managers and financial analysts in a better evaluating firm value. Also, this evidence can serve educational institutions in their courses and regulatory bodies in monitoring the financial reporting process in Jordan.

1.6. Scope of the study

Jordanian companies are selected as the research sample. Jordanian firms are particularly well suited for the study's empirical investigation for several reasons. First, this study is an extension for the previous valuation studies in this country. Second, Jordan has had stability in policies and practices in finance and accounting for a long time (Jordan Central Bank (JCB), 2009) which might support the reliability of the results of the current

study. Third, since limited studies have examined the accounting disclosure in ASE (Alakra et al., 2009) there is a need to focus more on scientific research in this area. In addition, Jordanian FS users' needs for accounting information should be taken into consideration for future research as accounting practices are affected by economic and technology changes which lead FS to lose their value relevance (Collins et al., 1997; Brown et al., 1999; Francis and Schipper, 1999; Lev and Zarowin, 1999; Oyerinde, 2009). Since ASE has many sectors and the number of companies under each sector is not similar, the disproportionate stratified random sampling is argued to be the appropriate sampling technique for this study.

Although ASE was established in March 1999 and JSC in 2002, no complete data about the study's sample has been found before the year 2004. So, the year 2004 is considered to be the first financial year that has complete information about companies' FS, share prices and other information about the study's institutional factors. Therefore the selected period of research sample is 6 years (2004-2009).

Also, Jordan has achieved many important developments within 2004-2009 including a high economic growth, applying Accountancy Profession Law No. 73, establishing a high council for accounting and auditing, and setting up an improved Jordanian Association of Certified Public Accountants (JACPA). Although this has been considered as a significant step toward organizing the profession, its contents need to be updated along with new global developments (Rahman and Waly, 2004). Within the period 2004 to 2009, the number of listed companies have increased from 192 to 272, market capitalization has increased from 13033.8 to 22526.9 in million Jordanian dinars, value

traded from 3793.2 to 20318.1, average daily trading from 15.4 to 82.9, and number of transactions from 1178.1 to 3780.9 (thousand).⁷

Jordan was ranked 100th with economic freedom score of 65.4, making its economy the 51st in 2009 index. Its score has increased by 1.3 points since 2008, reflecting an increase in freedom in business, trade and government size. Also, Jordan was ranked sixth out of the 17 countries in the Middle East/North Africa region. Investors should continue to execute due diligence in exploring investment opportunities and concluding purchases as they would in other countries (Dashti, 2011). In 2007, Jordan has been ranked the 5th among the Middle East and North Africa region for doing business. This improvement is due to the reform policies adopted by Jordanian government. Nearly 71% of ASE companies showed consistent growth and profits (Doing Business, 2007).

1.7. Organization of the thesis

The thesis continues as follows: chapter two reviews the studies related to the topic to build the research framework. Chapter three covers the hypotheses, research design, and data collection. Chapter four presents the findings of the study while these findings are discussed in chapter five. The last chapter presents the conclusions, contributions and suggestions for future research.

⁷ Resource of this paragraph is annual reports of JSC 2004-2009.

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

This chapter reviews the value relevance of accounting information in literature. In addition to the introduction, this chapter includes eleven main sections. Accounting practices and capital market in Jordan are revealed in the first section. The value relevance of the accounting information as the association of earnings, book value of equity and cash flows from operation with share price is presented in the second section. The third section discusses the effects of the economic factors (foreign ownership and trading volume) on the value relevance of the accounting information. The fourth section reveals the influence of the corporate governance (financial disclosure time and financial disclosure level) on the value relevance of the accounting information.

The fifth section discusses whether the company's characteristics (shareholders number, listing status and age) can affect the value relevance of accounting information. The sixth section offers the effects of industry type on the value relevance of accounting information. Also, share price in three different proxies (average annual share price, annual closing share price and ATM-share price) as study's dependent variables are presented in the seventh section. Firm size and leverage as control variables for this study are discussed in the eighth section. Theories that are relevant to be adopted in the development of this research conceptual framework are discussed in the ninth section. The study's conceptual framework is presented in the tenth section. Finally, the summary for this chapter is revealed in the last section of this chapter.

2.1. Accounting practices and capital market in Jordan

The importance of Jordan stems from being the meeting point of Asia, Africa, and Europe. Jordan, unlike other Middle Eastern countries, does not rely on petroleum as its main source of Gross Domestic Product (GDP). After 1948, Jordan's population growth rates have increased over 4% largely due to the influx of Palestinian refugees (DOS, 2007). Jordanian government heavily relies on foreign assistance because of the insufficient supplies of oil, water, and other natural resources. This led Jordan's economy to be ranked among the smallest in the Middle East (Marashdeh, 1996; Alakra et al., 2009).⁸

The high population growth, limited natural resources, and high debt levels impeded the development efforts to create a more technically sophisticated economy. Therefore, Jordan has embarked economic adjustment programs. Two important programs are opening the trade regime and privatization in 1999 (ASE, 2007). These economic changes require a change in Jordan's accounting systems to be comparative in the world markets (Alakra et al., 2009).

The trade regime and privatization programs have produced significant accounting regulatory reforms which in turn influence the recent governance and disclosure regulations. Privatization led the government to sell shares of 50 major Jordanian corporations to domestic and foreign investors which increased the market capitalization

⁸ The natural resources scarcity made Jordan's economy to rely on external aid from oil-rich states, remittances from Jordanians working in those states, and exports (Marashdeh, 1996).

of ASE to over \$7 billion in 2002 and to \$11.3 billion in 2004. To ensure privatization success, governance systems and corporate disclosure rules are revamped. Privatization increases the shareholders number and ownership (domestic and foreign) and in turn produces more transparent disclosure practices (Boutchkova and Megginson, 2000; Chau and Gray, 2002). Thus, the significant changes in ownership structure have increased the need for public disclosure, and a Jordanian accounting environment needs to be developed in terms of strengthening corporate governance of companies and accounting practices (Al-Jaway and Noor, 2003; Alakra et al., 2009).

The adoption of the full version of IASB standards was mandated by the 1997 Company Law and 2002 Securities Law which focused on the adoption and enforcement of IASs/IFRSs (ASE, 2007). The adoption of these standards requires certain mandatory disclosures and more information to be presented than the national accounting standards due to their detailed measurement rules (Aubert and Grudnitski, 2008).

Jordan has converged towards IAS, as exerted by the International Accounting Standards Board, International Federation of Accountants, International Organization of Securities Commissions, World Bank, and the International Monetary Fund. Further, Jordan became a member in the Mediterranean partnership with the European Union in 1999, the World Trade Organization in 2000, the Organization of Free Trade with the United States in 2001(Al-Jaway and Noor, 2003), and the Arabian Gulf Cooperation Council in 2011. This compelled Jordanian listed companies to adopt IAS/IFRS.

Jordan was witnessed different accounting methods as different states occupied the region. Establishing the Islamic state has developed the accounting systems to suit the needs of Muslims in accordance with Islamic Share'ah (Zaid, 2004). Different laws have played an important role in developing Jordanian accounting practices, such as the Company Law No. 12 in 1964 (amended and replaced by Law No. 1 of 1989), Trade Law No. 12 enacted in 1966, Encouragement of Investment Law in 1972, Registration of Foreign Companies Law in 1975, Control of Foreign Business Activities Defence Regulations in 1978, the establishment of Amman Financial Market (AFM) in 1978, and Securities Law No. 76 in 2002.⁹

Three new institutions have been formed to replace the old AFM. The new institutions are Jordan Securities Commission (JSC), Amman Stock Exchange (ASE), and the Securities Depository Commission (SDC). ASE was established on March 11, 1999, on which Jordanian companies have been categorized into services, industrial, and financial sectors. ASE has experienced some growth in a number of aspects that are related to its activities. ASE is in charge of monitoring and regulating market trading in coordination with the JSC, attaining a fair market, providing investor protection, ensuring the provision of timely and accurate information of issuers to the market, and disseminating market information to the public (Alakra et al., 2009).

⁹ These developments required Jordanian companies to prepare an annual report with a profit and loss statement, a balance sheet, explanatory notes, an auditor report, keep a general journal, inventory records, a correspondence register (Alakra et al., 2009), and by using IAS/IFRS, all Jordanian public shareholding companies have to disclose their performance and any material developments in their affairs that might affect stock prices.

The ASE growth aspects have encouraged activities investments in Jordan as it has (1) a stable political and economical environment, (2) a free market oriented economy, (3) a package of incentives and exemptions to encourage attractive investment climate,¹⁰ (4) an access to major international markets, (5) free zones and industrial estates, (6) qualified and competitive human resources, and (7) a world class infrastructure and communications (ASE, 2009).

2.2. Value relevance of earnings, book value, and cash flows

While many studies (Barth et al., 2000; Vishnani and Shah, 2008) pointed out that the term “value relevance” is used at the first time in literature by Amir et al. (1993), this study found that Lev (1989) was the first in using this term as value-relevant variables, value-relevant information or valuation-relevant.

Accounting information value relevance is an unclear term because different user groups and investors for valuation purposes may have different views about what the information value relevance is (Francis and Schipper, 1999; Thinggaard and Damkier, 2008). The relevant information is the figure that FS users need to evaluate firm value and make a decision. Bao (2004) considered accounting information that the investors need does not

¹⁰ Exemptions from; income and social services taxes by 25%, 50%, or 75% for 10 year period; imported fixed assets are 100% exempted from customs duties and taxes; imported spare parts for fixed assets can be exempted from fees and taxes; exemption from customs duties and income tax for expansion, modernization, or project development; hotels and hospitals may purchase furniture and supplies without customs duties once every seven years for renewal purposes; total customs exemptions on imported fixed assets; revenues on exports are exempted from income taxes; export industries are not subject to customs duties on imported raw material; and free repatriation of capital, profits and salaries (ASE, 2009).

require to be new in order to be relevant, but it can be relevant by summarizing accounting information that might be taken from other sources.

In the extant literature, testing the relationship between the accounting information and the security market values has been defined as value relevance (Barth et al., 2000). It hints to the ability of the FS information content to explain the stock market measures (Vishnani and Shah, 2008). If the information has explanatory power on the equity market value it will be termed as value relevant (Thi and Schultze, 2009). The main idea of testing this relationship is (1) to give a strong signal of the intrinsic value or change in value (Whisenant, 1997) and (2) to provide investors with relevant information (that is considered to be missed) in firms' FS as noted by Trejo-Pech (2007).

Hence, a study on testing FS information and share price correlation as value relevance is important because: (1) it is one of the possible interpretations of value relevance concept (Francis and Schipper, 1999), (2) its importance is not for the investors only, but it also provides insight to other accounting information user groups (Barth et al., 2001) and (3) it is not the same as the accounting information quality (Hellstron, 2005). The value relevance of earnings, book value, and cash flows is discussed in the next subsections.

2.2.1. Earnings

The primary focus of financial reporting is information about an enterprise performance provided by measures of earnings and its components (FAS 1, 1978). In financial

reporting, earnings as a term are used to describe the income of a company, while the annual earnings are defined as net income (Collins et al., 1997). At a conceptual level, earnings should be the more representative value driver because earnings can reflect the changes in value regardless of when the cash flows occur (Vishnani and Shah, 2008). In addition, earnings are value relevant as they reflected some information in security prices (Ball and Brown, 1968).

Earlier studies on value relevance (such as Ball and Brown, 1968; Collins et al., 1997) provided simplistic definition of annual earnings. No efforts have been noticed in literature to expand the conceptual understanding of the term by taking into consideration the current market environment. Earnings per share (hereafter EPS) are the amounts of earnings attributable to each share of common stock. Over the other measures, as investors believe, EPS have additional information content at earnings announcement time. Due to the usefulness of EPS, investors use it at quarterly announcements, and only EPS provides incremental information that investors rely solely on at annual announcements (Vincent, 1999).

Although EPS are important, some drawbacks that arise from using EPS include (Singhvi, 2001):

1. EPS measure does not take into account the firm's balance sheet strength, since it ignores the ability of firm's assets and capital to generate revenue.¹¹
2. Since EPS is determined by dividing net income by the number of shares outstanding, many firms try to alleviate the poor performance effect in a particular fiscal year by buying back shares to reduce shares outstanding number. This way, in spite of poor earnings, EPS will increase or maintain itself which makes it a deficient measure of profitability. Management must explain and describe an alternative measure that may supply conventional financial data, if they believe that the existing earnings model is deficient in presenting operations results as well as an alternative (Vincent, 1999).

Khanagha et al. (2011) have examined the value-relevance of earnings, book value, and cash flows in Iran for the period from 1996 to 2008. The results show that all coefficients on these accounting variables are statistically significant and earnings have a higher explanatory power than book value and cash flows.

Finally, prior research concluded mixed results for the value relevance of earnings. While earnings are largely irrelevant in the wireless communication industry valuation (Amir and Lev, 1996), it is decline for industrial and services firms (Collins et al., 1997; Francis and Schipper, 1999). In contrast, earnings are strongly value relevant (Anandarajan et al.,

¹¹ For example, two firms with the same income level and number of shares outstanding will give similar EPS. But this does not mean that firms have equal profit because one firm takes twice the amount of assets or capital to get the same level of EPS as the other firm (Singhvi, 2001).

2006; Oyerinde, 2009; Anandarajan and Hasan, 2010). Additional findings for earnings which are conducted from prior studies that used valuation model and regression statistics have been categorized based on authors, date of publishing, country and economic sector and type of variables (dependent or independent) as illustrated in Table 2.1.

Table 2.1

Value Relevance of Earnings, Book Value, and Cash Flow in Prior Studies

	Authors	Yr	Country and Sector	Variables		Findings
				DV	IV	
1	Gee-Jung	2009	KSM firms except banking	SP	Es, BV and CFO	1- SP, BV and CF are positively correlated 2- SP and Es are not significantly correlated*
2	Oyerinde	2009	NSM top 30firms with highest Es	SP	Es	A significant positive relationship between SP and Es
3	Suwardi	2009	JSX firms all sectors	SP	BV	Strong relationship between SP and BV
4	Dastgir and Velashani	2008	TSE firms (Iran) all sectors	SP	Es, BV, CI	Relationship between SP with CI and BV ($R^2 = 0.424$) are not superior to that with Es and BV ($R^2 = 0.429$) for firm performance evaluation as total sample
5	Vishnani and Shah	2008	BSE top 24 Indian companies	P/B	PAT, CFI, CFO, NW	1- Value relevance of balance sheet, balance sheet with cash flows statement, income statement, and income statement with cash flows statement was negligible 2- Value relevance of financial statements as a set was declined
6	Vardavaki and Mylonakis	2007	U.K. retail firms food and drug sectors	SP	Es, BV	1- BV has very high explanatory power ($R^2 = 0.8685$) 2- Es has lower explanatory power value ($R^2 = 0.759$) 3- Combination of BV and Es gives a high satisfaction in valuation model ($R^2 = 0.975$)
7	Anandarajan et al.	2006	ISE firms **	SP	ES, BV	Both Es and inflation-adjusted BV have strong association with SP
8	Bao	2004	Asian stock markets (7 countries)	SP	Es, BV	1- Correlation between Es, BV and SP is very strong 2- Both Es and BV play a significant role in explaining prices
9	Whelan	2004	ASX firms (all sectors except banking, insurance)	SP	Es, BV	1- Both Es and BV are value-relevant using Australian data 2- The value-relevance of Es is reduced and the value-relevance of BV is increased

Table 2.1 (Cont.)*Value Relevance of Earnings, Book Value, and Cash Flow in Prior Studies*

	Authors	Yr	Country and Sector	Variables		Findings
				DV	IV	
10	Alsalman	2003	U.S., Saudi, Kuwait, and IAS sample markets all sectors	SP	Es, BV	SP is highly associated with BV and Es in Kuwait and IAS-sample than that in U.S. and Saudi Arabia
11	Bao and Bao	2001	TSE firms (Taiwan) all sectors	SP	Es, BV	In large size firms, Es are determinant of Sp while BV is not and vice versa in small size firms
12	Ely and Waymire	1999	U.S. firms services sector	SP	Es, BV	A highly significant increase in the combined value relevance of Es and BV (adjusted $R^2 = 0.44$) while it is 0.37 for Es and 0.24 for BV
13	Francis and Schipper	1999	U.S. firms	SP	Es, BV	Incremental relevance for Es is decreasing ($R^2 = 0.22$) and BV is increasing ($R^2 = 0.41$) over their research's period while for combined Es and BV is increasing ($R^2 = 0.62$)
14	Collins et al.	1997	U. S. services and industrial sectors	SP	Es, BV	Es and BV are positively correlated with SP and with each other
15	Ohlson	1995	No sectors	SP	Es, BV, D	Developing and analyzing a model of a firm's market value as it relates to contemporary and future Es, BV, and D.
16	Harris et al.	1994	German and U.S. industrial and services sectors	SP	Es	SP is associated with Es for U.S. firms ($R^2 = 0.34$) more than that for German firms ($R^2 = 0.14$)

Notes:

- DV: dependent variable, IV: independent variable, SP: share price, BV: book value, Es: earnings, CI: comprehensive income, P/B: ratio of market price per share to book value per share, PAT: profit after tax, CFI: cash flows from investing activities, CFO: cash flows from operating activities, NW: net worth of a company, D: dividends.
- KSM: Korean Securities Market, NSM: Nigeria Stock Market, JSX: Jakarta Stock Exchange, TSE: Tehran Stock Exchange, BSE: Bombay Stock Exchange, ISE: Istanbul Stock Exchange, ASX: Australian Stock Exchange, TSE: Taiwan Stock Exchange.
- * Gee-Jung study (2009) results are extraordinary because many studies report that Es have a relevant value and additional information more than cash flows. This may be just for 1994-2005 period in KSM, or that Es have no significant effect on SP could be the true pattern.
- ** Dealing with firms without limiting or excluding any sector.

Consistently with Anandarajan and Hasan's study (2010), it is expected for this study to find that earnings will be value relevant in ASE. Earnings as one of the current study independent variables are measured as earnings per share (EPS) of a company at end of the financial year (Amir and Liv, 1996; Collins et al., 1997; Vincent, 1999; Francis and Schipper, 1999; Anandarajan et al., 2006; Anandarajan and Hasan, 2010; Khanagha et al., 2011).

2.2.2. Book value of equity

Book value is the historical value. It is the value of asset shown in the balance sheet. While earnings measure how a firm's resources are currently used, book value measures the value of a firm's resources independent of how these resources are currently used.

The information about the net value of firm's resources can be provided by the book values from the balance sheet (Burgstahler and Dichev, 1997). The firm book value wealth is measured by the balance sheet (Landsman, 1986; Barth, 1991; Shevlin, 1996; Burgstahler and Dichev, 1997). The equity market value has been explained by the empirical regressions as a linear function of the book value of assets and liabilities (Bao, 2004).

Many studies focus on the balance sheet measures. A statistically significant relationship between firm book value and equity value has been found by these studies. Book values

of equity per share are of interest in measuring firm performance (Penman, 1991; Ohlson, 1995; Barth and Kallapur, 1996; Berger et al., 1996).

Book value per share (BVPS) can be determined by dividing the total common equity of firm by the total number of shares outstanding. This measure has some drawbacks (Singhvi, 2001):

1. To measure the book value, a set of arbitrary accounting rules has been applied to spread the assets acquisition cost over a specified number of years, whereas the stock market price takes into account the firm's value. While one variable is forward looking and another is backward looking, the comparison will be less than perfect.
2. The book value of some firms, such as advertising, internet, and software firms will always be small because of the business they are in. These firms, to conduct their business, do not need tangible assets such as factories, equipments, etc. These firms have no good investment candidates because on a price/BVPS basis, their stocks will always look expensive.

Valuation research focused mainly on earnings while studies in recent years turned their attention towards models including equity book value (Lo and Lys, 2000). Previous studies concluded mixed results for the value relevance of book value of equity. While book value of equity is largely irrelevant in the wireless communication industry valuation (Amir and Lev, 1996), it is value relevant in the industrial and services firms (Collins et al., 1997; Francis and Schipper, 1999), and book value is more value relevant than earnings (Gee-Jung, 2009). Mixed findings have been concluded for the value

relevance of book value of equity in prior studies as reported in Table 2.1. Consistent with the latter studies (Collins et al., 1997; Francis and Schipper, 1999), it is expected for this study to find that book value will be value relevant in ASE. Book value as one of the current study's independent variables is measured by book value of equity per share of a company at end of the financial year (Bao and Bao, 2001; Bao, 2004; Anandarajan et al., 2006; Kanagaretnam et al., 2009; Gee-Jung, 2009).

2.2.3. Cash flows from operation

Earnings and cash flows are different because, according to the timing and magnitude of revenues and expenses, accounting principles are not necessarily based on cash inflows and outflows (Trejo-Pech, 2007). Actually, cash flows have not been defined yet by any authoritative body according to Lunzer (1986). Usually, balance sheet and income statement are prepared by the companies, and the concept of reporting cash flows is a recent one (Vishnani and Shah, 2008). According to IAS 7, "Cash Flows Statement" came into effect on 1/1/1994 in order to require the information presentation. This information is regarding the firm's historical changes in cash and cash equivalents. It classifies cash flows according to operating, investing, and financing activities during the period.

While the measures of earnings have been traditionally emphasized by the financial reporting practices, the financial economists have well accepted the link between future cash flows and firm value, and the interest in cash flows measures has been increased (Bowen et al., 1987).

An important role that is played by cash flows is determining a firm's ability to access external funds sources. Positive cash flows enable firms to raise their capital and borrow from the capital market, while negative or insufficient cash flows present a firm's inability to borrow and they will face the default risk (Zeitun et al., 2007).¹²

Zeitun et al. (2007) point out that the ability of a firm to enter the equity market to raise capital has been affected by a firm's future cash flows. As these cash flows are not directly paid out in a form of dividend, they are retained and could be reinvested in profitable projects. While managers are allowed by shareholders to retain cash, the retained cash might be misused by those managers by investing in unprofitable or negative projects. This results to managers-investors interest conflict, and consequently, potential agency problems will exist (Jensen and Meckling, 1976).

Gentry et al. (1985) find that cash flows components offer applicable alternatives to classify failed and non-failed firms. However, Casey and Bartczak (1985) find that the classification result of failed and non-failed firms is not improved by operating cash flows.

By identifying the main sources and uses of cash listed in the statement of cash flows, quality of earnings and financial condition can be assessed. For example, examining the

³ Default is defined as stop issuing firm's FSs for at least two years, because the law obliged firms to submit their annual FSs or had restructured their capital (Zeitun et al., 2007).

cash flows statement could reveal reliance on proceeds from debt issuance and liquidation of capital assets as primary sources of cash. This type of information is a clear indication of financial distress and would otherwise be hidden (Phillip, 2003).

For the investor's selection, this statement which views only cash receipts and payments during a short period (one year) cannot indicate whether the firm's performance is successful or not (FAS 95, 1987). Moreover, Vélez-Pareja (2005) found that cash flows are not a necessary figure for accounting principles to be based in firm value.

Since earnings have the ability to reflect the firm's performance more than cash flows (Dechow, 1994), Thinggaard and Damkier (2008) show that when investors make their decisions based on accrual information than cash flows statements, the information foreknowledge in the FS could be highly relevant.

Since in the accounting literature there is strong evidence which show that the accounting system must report earnings, not cash flows (Bowen et al., 1987), then the focus should be on earnings as opposed to cash flows. "Information about enterprise earnings based on accrual accounting generally provides a better indication of an enterprise's present and continuing ability to generate favorable cash flows than information limited to the financial effects of cash receipts and payments"(FAS 1, 1978:5). The accrual information has predictive ability which is superior to that of cash flows (Wilson, 1986; Dechow, 1994; Barth, 2000; Thi and Schultze, 2009). Jordanian firms had been selected by Hadi

(2005) to investigate the relationship of earnings and cash flows with share price. He found a significant relationship with earnings but not cash flows.

By using the regression model, the value relevance of earnings compared with cash flows (operating, investing, and financing cash flows) in different life-cycle stages has been examined by Black (1998), and different results have been concluded. Mixed findings have been concluded for the value relevance of cash flows from operating in prior studies as reported in Table 2.1. Consistent with other studies (Wilson, 1986; Bowen et al., 1987; Dechow, 1994; Barth, 2000; Hadi, 2005; Vélez-Pareja, 2005; Thinggaard and Damkier, 2008; Thi and Schultze, 2009; Khanagha et al., 2011), it is expected for this study to find that cash flows from operating activities will be value relevant but less than earnings and book value. Cash flows as one of the current study's independent variables are measured by cash flows from operating activities per share of a company at end of the financial year (Black, 1998; Misund et al., 2005; Gee-Jung, 2009).

Finally, since the value relevance of earnings, book value, and cash flows individually and in a combination of earnings and book value, earnings and cash flows or book value and cash flows have been widely investigated in prior research, limited studies (Khanagha et al., 2011) examined the value relevance of these variables simultaneously. So, the current study extends the accounting literature particularly in Jordan by examining the value relevance of earnings, book value, and cash flows simultaneously.

The value relevance of accounting information has been affected by many institutional factors. These factors were recognized and operationalized by the recent value relevance studies among the countries (Ali and Hwang, 2000; Hung, 2001; Ball et al., 2003; Anandarajan and Hasan, 2010). Since the current study examines the impact of four groups of institutional factors (economic, governance, company's characteristics and industry type) on the value relevance of earnings, book value, and cash flows after controlling firm size and leverage, the next sections review the association between these factors and the value relevance of the accounting information in previous studies.

2.3. Economic factors and value relevance

As mentioned before, many institutional factors influence the accounting practices among the countries and this influence has been examined by the recent value relevance studies. One profound and important factor that affected the value relevance of accounting information is the economic factor which is traced, for the purpose of this study, by the influence of the foreign ownership and trading volume on the value relevance of earnings, book value, and cash flows. In brief, those factors are discussed in the next subsections.

2.3.1. Foreign ownership

While investments depend on the transferring of management and capital across national boundaries, foreign investors have been considered as proprietors and not merely lenders (Staley, 1935). Companies' economic efficiency will be changed with the extent of

foreign ownership (Boubakri et al., 2005). In essence, the greater the company's economic efficiency, the greater the extent of foreign ownership of this company (Anandarajan and Hasan, 2010). Many studies found that higher proportion of foreign ownership has positive association with company's performance (Denizer, 2000; Claessens et al., 2001; Litan et al., 2001; Anandarajan and Hasan, 2010).

The higher presence of foreign ownership leads to increasing the competition environment, which will improve the local firm's efficiency and performance (Anandarajan and Hasan, 2010). This is because foreign investments will introduce advanced information technology (Okuda and Rungsomboon, 2004). This will cause in reducing operating expenses and increasing profits, which will consequently force the local companies to double their efforts to keep competitive (Claessens et al., 2001; Berger and Hannan, 1998; Anandarajan and Hasan, 2010).

Many empirical studies have focused on the determinants of foreign investment in local firms (Sethi et al., 2003). Significant associations of these investments have been found with technological intensity (Lall, 1980), firm size (Li and Guisinger, 1992), capital intensity (Pugel, 1981), product differentiation (Caves, 1971) and both macro-economic and firm strategy factors (Sethi et al., 2003).

Also, foreign ownership involvement has positive influence on local firms in terms of improving efficiency and competitiveness. Foreign ownership involvement has a strong positive effect on the value relevance of the accounting information (Anandarajan and

Hasan, 2010). The influence of foreign ownership on the value relevance of accounting information has been tested by Bae and Jeong (2007) and they found that foreign ownership positively influences the value relevance of earnings in Korean companies.

In Jordan, according to JSC annual reports, the foreign ownership formed about 26, 37, and 41% in 2004 to nearly 32, 53, and 49% in 2009 for the services, industrial sectors and ASE respectively. ¹³ Table 2.2 illustrates foreign ownership percentage in ASE sectors according to number of listed companies within the research period.

Table 2.2

Percentage of Foreign Ownership in Amman Stock Exchange Sectors

Yrs	Number of listed companies	% in Financial	Foreign ownership		
			% in Services	% in Industrial	% in ASE
2004	192	47.44	25.6	36.8	41.3
2005	201	49.77	26.2	38.1	45.0
2006	227	47.73	36.6	43.7	45.5
2007	245	50.73	36.2	51.9	48.9
2008	262	52.10	33.9	53.3	49.2
2009	272	51.88	32.3	53.2	48.9

Resource: Annual Reports of Jordan Securities Commission for 2004 to 2009

In 2005, ASE performance reflected a great confidence in the Jordanian economy and Jordan's ability to overcome such circumstances. ASE continues its outstanding growth with the strong supervision and regulatory infrastructure, which compares well with the highest international standards. Compared with 2004, the General Shares Price Index rose by 93%, trading volume by 345 % and market capitalization by 105%. These percentages

¹³ The privatization program that has been implemented by Jordan in 2000 is expected to attract more foreign investments (Naser et al., 2002).

reflect the growing relative weight of the capital market in the national economy (JSC, 2005).

In 2007, ASE has taken important steps to market itself internationally. It held two international forums for Jordanian companies in London and New York, the world's biggest financial centers. With the aim to interact with international financial markets and international investors as well as introducing investment opportunities in Jordan to foreign investors, the non-Jordanian ownership rose to 48.9% of the total market capitalization, compared with 41.3% in 2004 (JSC, 2007).

Despite the increased amount/percentage of non-Jordanian ¹⁴ ownership in ASE, few studies examined the influence of foreign ownership on the value relevance of the accounting information in Jordan. Anandarajan and Hasan (2010) pointed out that higher value relevance of reported earnings has been found in Jordan when foreign equity holders in local firms are involved. Therefore, it is interesting to study the influence of foreign ownership on the value relevance of the accounting information.

The current study extends the study of Anandarajan and Hasan (2010) by examining the influence of foreign ownership on the value relevance of earnings, book value of equity, and cash flows from operation in Jordan. Since the extent of foreign ownership has strong positive influence on the value relevance of earnings (Bae and Jeong, 2007; Anandarajan and Hasan, 2010), it is expected that extending foreign ownership in Jordan will also have positive influence on the value relevance of book value, and cash flows. Foreign

¹⁴ Non-Jordanian term implies foreign and Arabs investments.

ownership as one of the current study's independent variables is measured whether a company has foreign ownership at end of the financial year (Anandarajan and Hasan, 2010).

2.3.2. Trading volume

While the trading volume is a valuable source of information about assets' value (Kim and Verrecchia, 2001), prior research found that trading volume play no role as information source about firm value (Admati and Pfleiderer, 1988; Varian, 1989; Kim and Verrecchia, 1991a, 1991b, 1997; Harris and Raviv, 1993; Kandel and Pearson, 1995). If the financial information disclosure is postponed to a later period, trading volume will be used as a better indicator on firm value (Verrecchia, 2001; Kim and Verrecchia, 2001).

Beaver (1968) found that earnings announcements led to changes in abnormal price and abnormally high trading. Divergence in earnings pre-disclosure stimulates higher the trading volume than price change (Bamber and Cheon, 1995). These findings suggest that trading volume is more strongly associated with investors' uncertainty (Callahan et al., 1997).

Karpoff (1987) examined the relationship between trading volume and share price and found that the share price-trading volume relation is important because this relation (1) provides insight into financial markets structure, (2) is important for event studies that use a combination of price and volume data to draw their conclusions, (3) is critical to

discuss the empirical distribution of speculative prices and (4) has significant implications for future markets research where price variability affects the volume of trade in future contracts.

Cao (1999) argued that share prices will reflect more information when the informed trading induced by derivatives which will reduce the risk of investing in the underlying asset and in turn tends to raise the asset's price. This depends on whether the firm resources are allocated more efficiently due to more information revealed by share prices, and then the firm value will be increased (Khanna et al., 1994; Subrahmanyam and Titman, 1999). Many studies employed the relationship between trading volume and earnings announcement or share price (Karpoff, 1987; Kim and Verrecchia, 1991b; Bamber and Cheon, 1995). These studies concluded a significant positive association of share price and trading volume to earnings announcement.

Dontoh et al. (2004) examined the prediction that declined value relevance of accounting information could be due to increasing trading volume and their results supported the prediction. They found that (1) the value relevance of earnings and book values is negatively associated with the trading volume, (2) a slight decline from 26 % in early 1980s to 21.8 % in the late 1990s indicates that a decreasing proportion of the trading volume has been explained by the information events, which suggests that there was an increase in the trading volume overtime and (3) the influence of trading volume on lost firms and profit firms is not significantly different. While Karpoff (1986) concluded that the occurring of the informational events increase the trading volume, Dontoh et al.

(2004) concluded that these information events explain a declined portion of trading volume.

For Chinese stock market, Liu and Liu (2007) examined the influence of trading volume on the value relevance of earnings and book value and found statistically insignificant influence for this factor on the value relevance of these variables, although Chen et al. (2001) found that with high trading volume, earnings and book value were more value relevant.

In Jordan, trading volume differs among ASE sectors overtime. In industrial sector it is ranging from 12 % in 2006 to 28 % in 2004, while it is ranging from 7 % in 2006 to 47 % in 2005 for services sector (ASE, 2004-2009). However, ASE has small trading volume compared with developed markets. The trading volume according to ASE sectors within research's period is presented in Appendix 1.

Chen et al. (2001) referred to liquidity as a measure of the percentage of public share holdings over total shares outstanding. Their results support that accounting information is more value relevant for firms with higher public share holdings. Since liquidity explains the variations of value relevance among firms, small trading volume may not allow stock prices to fully reflect new information in the market. While individual holdings form a company's total tradable shares, individual investors generate most of the trading volume. A higher percentage of individual holdings indicates a more active market in which stock prices have the potential to fully reflect public information

including accounting information. Liu and Liu (2007) found that increasing trading volume would increase market liquidity and efficiency, thus increasing the value relevance of accounting information.

Due to the dramatic changes in trading volumes in ASE within the research period and since the influence of trading volume on the value relevance of cash flows has not been well researched in Jordan, this study extends the studies of Chen et al. (2001), Dontoh et al. (2004) and Liu and Liu (2007) by adding cash flows from operation as a new variable with earnings and book value to examine the influence of trading volume on these accounting variables in Jordan.

Since trading volume has negative influence (Dontoh et al., 2004), insignificant influence (Liu and Liu, 2007) on the value relevance of accounting information, positive relationship with price change (Clark, 1973; Epps and Epps, 1976; Tauchen and Pitts, 1983) and noisy relationship with price change (Pfleiderer, 1984), this study has no expectation about the influence of trading volume on the value relevance of the accounting information in Jordan. Trading volume as one of the current study's independent variables is measured by total number of shares traded of a company at end of the financial year (Cready 1988; Cready and Mynatt 1991; Bhattacharya, 2001).

2.4. Corporate governance and value relevance

Increased corporate governance improves the quality of reported accounting information (Bae and Jeong, 2007). Recent research on corporate governance shows that without a

clear consideration of corporate governance mechanisms, the value relevance of accounting information cannot be fully understood (Anderson, 1999). For the purpose of this study, the corporate governance group is traced by the financial disclosure time and financial disclosure level to examine their impact on the value relevance of earnings, book value of equity and cash flows from operation.

2.4.1. Financial disclosure time

To be relevant, FS information must be “Timeliness”. This means a decision maker must get the information before it loses its power to affect decisions. Information becomes useless if it is not available in such a time when it is needed or available long after it has future action value (Obaidat, 2007). Therefore, investors’ purchases and sales of the security may be postponed until the earnings report are released (Beaver, 1968).

There is an argument that disclosure timing is considered to be a positive attribute of company disclosure quality. This is supported by the results of Sengupta study (2004). Reporting timeliness is an essential element of adequate disclosure and it can be improved by increasing disclosure frequency (Dyer and McHugh, 1975; Givoly and Palmon, 1982; Debreceeny et al., 2002). Previous studies on announcement timing (Whittred, 1980; Kross, 1981; Givoly and Palmon, 1982; Patell and Wolfson, 1982) provided evidence that bad news (lower than expected earnings) have been conveyed more by annual earnings delayed announcements than do the early one.

The reporting delays are defined by the number of days or months from the end of fiscal year and the release of the annual report (Lawrence, 1983; Sengupta, 2004). Financial reporting delay may lead FS users to search additional information (Whittred and Zimmer, 1984). Bushee and Noe (2000) and Bushee et al. (2003) provided evidence to support that the firms must respond to investors' demand for more discretionary disclosure. This is because investors have to be concerned about the timely information that they have to receive from the firms that they are investing in. The demand for timely disclosure could be greater if firms have greater shareholders number (Sengupta, 2004) and if trading volume had declined, then segment disclosures would be initiated by the firm (Botosan and Harris, 2000).

When the company released the proper information without delay, it could help in reducing the probability of litigation. Firms should disclose the bad news quickly in order to reduce the potential litigation cost (Skinner, 1994, 1997). While disclosure time delay could generate private benefits to managers, board members who will gain little from the delayed disclosure will bear large monetary cost if litigation arises. This encourages the timely release of information to minimize the litigation cost and take actions in the interest of shareholders (Fama and Jensen, 1983; Weisbach, 1988; Borokhovich et al., 1996; Skinner, 1994, 1997).

Many studies found that earnings releasing delay is longer in firms that disclosed bad news (Kross and Schroeder, 1984; Begley and Fischer, 1998; Bagnoli et al., 2002). One factor that can mitigate the financial risk in market is disclosing bad news by managers.

Failing to do so on a timely basis will cause shareholder losses or damages or they might suffer an opportunity loss due to withholding good news (Ball et al., 2000). These damages can be referred to the difference between share price when sold based on the actual disclosure of a firm and share price if it sold based on a full and honest disclosure (Hurd and Wagner, 1990; Posner, 1992).

Measures that are related to investor base such as trading volume, shareholders number and firm size are found to be negatively influenced by the delay in the disclosure time (Sengupta, 2004). Therefore, timing is an important determinant of disclosure that could influence the value relevance of the disclosed information. Since increasing disclosure frequency improves the reporting timeliness (Dyer and McHugh, 1975; Givoly and Palmon, 1982; Debreceeny et al., 2002), the value relevance of the accounting information will be positively influenced by the reporting timeliness and negatively by the reporting delay.

Profitability and total lags are varying inversely where higher profitability is related to shorter lags and vice versa. An increase in the reporting lags and some negative association between reporting lag and company's size has been found in Australian companies (Dyer and McHugh, 1975). These findings have been supported by Courtis (1976) and Davies and Whittred (1980).

In Jordan, many companies delay in releasing their financial reports. The delay is categorized according to three financial reports types (preliminary, semiannual and

annual reports). Table 2.3 illustrates the percentages of Jordanian firms that submit their reports within the deadlines that are required by the securities law and disclosure regulation.

Table 2.3

Percentage of Jordanian Firms' Compliance to Disclose Periodic Financial Statements

Report type	Preliminary reports DL < 45*	Semiannual reports DL < 30 **	Annual reports DL < 90 *
Year	%	%	%
2004	69	75	64
2005	82	85	74
2006	95	88	88
2007	95	91	87
2008	97	90	87
2009	95	91	91

Resource: Annual Reports of Jordan Securities Commission, 2004-2009

* DL (deadline): not later than 45, 90 days after financial year end

** DL (deadline): not later than 30 days after first half of financial year

In 2005, the increased awareness and the JSC's enforcement of the disclosure instructions, and its policy of imposing penalties on the violating companies that do not submit their periodic reports on time, have improved the companies' compliance of the disclosure requirements to submit their periodic reports on time.

It is expected that financial disclosure time will have a positive influence on the value relevance of accounting information (earnings, book value, and cash flows) because, as mentioned before, timing could influence the value relevance of the disclosed information, and delay has a negative influence on trading volume, shareholders number and firm size (Sengupta, 2004). Since this study examines the impact of the financial disclosure time on the value relevance of the accounting information and in accordance with previous studies (Givoly and palmon, 1982; Kross and Schroeder, 1984), financial

disclosure time as the independent variable was measured as whether Jordanian companies submitted their preliminary, semiannual and annual reports within the announcement time required by JSC.

2.4.2. Financial disclosure level

Financial information should possess primary qualitative characteristics, which are relevance and reliability to be subjected in the general purpose financial reporting (FAS 3, 1980). The qualitative characteristics studies found that relevance concept is the primary qualitative characteristic, followed by reliability, and they are complementary rather than conflicting in nature (Stanga, 1980). When information can be used to determine alternative courses of action for FS users, then this information is considered to be relevant for decision makers who might take (without such knowledge) a different decision, which leads to a different outcome (Hassan, 2004). The relevant information assists the decision makers to better evaluate the past and present companies' events and enables them to well predict future events and correct past evaluations before making their decision (McDaniel et al., 2002; Hassan, 2004; Obaidat, 2007).

Many factors can affect the relevant information and keep FS away from fully covering the investors' needs (FAS 1, 1978). In turn this will affect the financial reporting quality. This is because; (1) FS are not the only one source of information (Kothari, 2001) which leads investors to look for relevant information from other sources; (2) the asymmetric information (agency problem) occurs because managers know more about firm affairs than investors (Jensen and Meckling, 1976; Eisenhardt, 1989; Fleisher, 1991; Godfrey et

al., 2003); (3) economic and technology changes have affected the accounting practice (Oyerinde, 2009); (4) shifting from industrialized to high technology service economy leads FS to lose their value relevance (Collins et al., 1997; Brown et al., 1999; Francis and Schipper, 1999; Lev and Zarowin, 1999) and (5) differences in accounting information quality occurred due to cross-country differences in disclosure and measurement practices (Alford et al., 1993; Amir et al., 1993; Harris et al., 1994; Joos and Lang, 1994).

FS users rely more on information that is disclosed in companies' annual reports which reflect the financial reporting environment of these companies. Then users may not suffer from difficulty in understanding financial information. Incomplete or misleading FS¹⁵ and lack of comparability, consistency and reliability are what FS users complain about (Abu-Nassar and Rutherford, 1996).

High quality information will reduce the uncertainty of FS users (Miller and Bahnson, 2002) and this will increase their confidence in firms' FS, which will lead to increase investments in these firms (Price, 1998; Bushee and Noe, 2000), and consequently, these firms will experience higher share price (Hassan, 2004).

Two main points can address the lack of financial disclosure quality. First, the environment changes have affected FS information content value relevance which has declined over time (Lev and Zarowin, 1999; Francis and Schipper, 1999). Second, the

¹⁵ These shortcomings have its effect on the decline in the price of Enron's share (Benston and Hartgraves, 2002).

annual reports did not include information required by disclosure standards (JSC, 2007), and this leads to decline in value relevance of accounting information. The second point was concerned in this study as lack of financial disclosure quality.

A general belief is that disclosure quality significantly influences the capital market participants' decisions (Kothari, 2000; Heflin et al., 2001). If the disclosed information is valued by market participants as high quality, then a positive correlation is expected between this information and share price. This will have benefits to both firms and investors (Gelb and Zarowin, 2002). The disclosed accounting information can be value relevant if it assists investors to evaluate the firm and it has enough reliability to be reflected in share price (Barth et al., 2001).

Most recent standards generate accounting information that is value relevant (Healy and Palepu, 2001). The value relevance can be used as a metric for evaluating accounting standards (Holthausen and Watts, 2001). Many studies regressed the stock prices on per share values of earnings and book value of equity to examine the accounting disclosures value relevance. They concluded that the difference in the obtained R^2 values indicates that the accounting disclosure value relevance has changed over time or it differs across disclosure regimes (Brown et al., 1999). Some improvements in the information disclosure quality have been found in prior research compared to the earlier ones (Solás, 1994; Abu-Nassar and Rutherford, 1996; Naser, 1998).

Prior studies indicated that financial disclosure has direct and indirect influence on firm value, but they do not fully explain how this factor influences the value relevance of earnings. Although no direct relation has been found between disclosed annual reports information and a firm's share price (Cormier et al., 2001), financial disclosure level has significant impact on the value relevance of earnings in Germany but not in Canada and France, therefore, it is still unclear as to whether this factor influences the value relevance of earnings (Cormier and Magnan, 2007).

In Jordan, the variations in the information disclosure quality might be attributed to two main reasons: (1) most of these studies were undertaken before applying IAS in Jordan; and (2) the privatization program attracted more foreign investment and in turn high information disclosure standards in the annual reports are required (Naser et al., 2002). In Jordan, since companies have to prepare their reports according to IAS (JSC, 2007), disclosure reports have been considered to be having quality defects if the companies fail to: (case A) prepare their FS according to IASs requirements; (case B) disclose material information; and (case C) provide the JSC with all the disclosure items that should be included in the annual report (JSC, 2004-2009). Table 2.4 illustrates the percentage of these cases in ASE within the research period.

Although JSC (1) pursues the compliance of listed companies with disclosure requirements, (2) imposes penalties on violators to ensure the supremacy of law and enhance disclosure in the market, and (3) implements electronic filing system to enable companies to provide their disclosure information electronically, Table 2.4 shows a wide

fluctuation in the reporting quality defects the within research period. This might be explained by the futility of the penalties that imposed on Jordanian companies or the company's management lacks the sufficient awareness.

Table 2.4

Percentage of Reporting Quality Defects in Amman Stock Exchange

Failure Year	Case A %	Case B %	Case C %
2004	44	3	17
2005	55	4	14
2006	58	14	5
2007	0.5	11	62
2008	1.6	3.2	36.3
2009	3.3	29.8	33

Resource: Annual Reports of Jordan Securities Commission, 2004-2009

Many studies have investigated the association between accounting information disclosure quality and share price (Eccher and Healy, 2000; Gelb and Zarowin, 2002; Lang et al., 2003; Hassan, 2004; Hassan et al., 2010). These studies found that the disclosed accounting information can be considered as high quality if the accounting information is highly associated with share price. Also, high earnings response has been found in firms with high disclosure level than those with low one. The influence of financial disclosure on the value relevance of earnings and book value has been investigated and it has been found to be positive and significant (Hassan, 2004). In Jordan, Anandarajan and Hasan (2010) investigated the influence of disclosure level ¹⁶ on the value relevance of earnings and found it to be significantly positive.

¹⁶ Disclosure level in Anandarajan and Hasan study (2010) is measured by the score of the Central for International Financial Analysis Research Index of Transparency (CIFAR).

Therefore, this study extends these studies by examining the influence of financial disclosure level on the value relevance of earnings, book value, and cash flows in Jordan to provide evidence to literature about this area of research. It is expected for the current study to find that disclosure level will have a strong, positive influence on the value relevance of these accounting variables because high disclosure level will reduce the asymmetric information, which is an important driver that affects the value relevance of the accounting information (Eng and Mark, 2003; Hassan, 2004). The disclosure level as one of the current study's independent variables is measured as to whether a company complies with the disclosure requirements (cases A, B, or C) stated by JSC in Jordan (Naser et al., 2002; Dahawy, 2009).

2.5. Company's characteristics and value relevance

The relation between the market value of the company and its characteristics is dependent upon market structure considerations and stock market conditions (Lustgarten and Thomadakis, 1987). While the current study examines the influence of company's characteristics on the value relevance of earnings, book value of equity and cash flows from operation, the company's characteristics in this study are traced by the number of shareholders, listing status and company's age. These characteristics are discussed in the next subsections.

2.5.1. Shareholders number

According to the Law, shareholders are considered to be owners. Firm financial position is considered to be stronger if the proportion of the shareholders' equity is larger (Glaudier and Underdown, 1997).

It is concluded that for developed equity market (Japan), reducing the minimum trading unit (MTU) ¹⁷ will increase the number of shareholders and the stock prices, which means that there is a significant positive relationship between stock price response and the increase in shareholders number. This is according to Amihud et al. (1999) who examined whether increasing firms' shareholders number will increase its stock value. They point out that companies could expand their shareholders number by reducing their MTU. This is because small investors are unable to trade the minimum unit if it requires a large amount of money. Investors prefer to include their portfolios with many different stocks, where each is required a smaller outlay. Their study concluded that MTU reduction has increased both the number of shareholders and the stock prices. This is supported by Hauser and Lauterbach (2003).

Increasing firms' shareholders number could result in increasing the firms' market value and reducing the firms cost of capital, thus managers are motivated to expand the firms' shareholders number (Merton, 1987; Amihud et al., 1999). Companies listed in main board have to disclose more financial information if they have greater number of

¹⁷ Minimum trading unit (MTU) is the minimum number of shares that can be traded on an exchange (Amihud et al., 1999).

shareholders (Malone et al., 1993). Listing on main board exchange can increase the firm shareholders number and this could positively and significantly affect the share price appreciation (Amihud et al., 1999).

Investigating the influence of shareholders number on the disclosure level has been widely researched and a significant positive influence has been concluded (Singhvi and Desai, 1971; Firth, 1979; Cooke, 1989a, 1989b, 1991, 1992; Imhoff, 1992; Malone et al., 1993; Wallace and Naser, 1995; Heflin et al., 2001; Al Arussi et al., 2009). The current study extends these studies by testing the influence of the shareholders number on the value relevance of earnings, book value, and cash flows that has not been researched before.

It is expected for this study to find that the extent in shareholders number will positively influence the value relevance of accounting information because companies with large number of shareholders are like to improve their disclosure quality in order to ensure equal relevant information access for all shareholders and respond to different shareholders' needs (Al Arussi et al., 2009). Shareholders number as one of the current study's independent variables is measured by the total number of shareholders of a company (Naser et al., 2002; Al Arussi et al., 2009).

2.5.2. Listing status

Capital market is a place where both investors and companies come together to raise their capital.¹⁸ To raise its capital, a company should go to the market place to choose the best mix of capital and to decide how much capital they want to raise. In capital markets, the funds long-term sources (stocks and bonds) have been traded. Capital markets can be divided into main markets on which new issues of securities are sold, and second markets on which outstanding securities are traded (Abdul Samad, 2002; Lee et al., 2004; Sori and Mohamad, 2008). Stakeholders always need to be provided with the accurate information that assists them in evaluating companies in both markets. This information could be extracted from FS information and reflected in share prices.

In Jordan, ASE has two types of boards, which are main board (first or primary market) and second board (secondary market).¹⁹ A number of requirements have to be found in the companies to be listed on the main board; otherwise they will be listed on the second board (Wong, 1996). In Jordan, these requirements are reported in Appendix 2.

Many small firms employed high technology and have great potential to grow but do not meet the main board listing requirements. Second board markets have been established by many stock exchanges to provide a place for those companies to enable investors to enjoy business opportunities outside the main board market by adopting a broader

¹⁸ A market is a place in which supply and demand schedule has been submitted by a goods sellers and buyers. To be traded in market, a good such a security must be characterized by widely demanded, homogenous, transferable and storable at low cost (Krause, 2000).

¹⁹ For the number of Jordanian companies listed in main and second board, please refer to Table 3.3.

investment strategy (Lee et al., 2004; Sori and Mohamad, 2008). Second board firms are of lower quality due to problems that are associated with high asymmetric information, low liquidity, and low volume of trading than those in the main board (How et al., 2007). The competition among companies that are listed in main board is higher compared to those listed in second board, and thus public eyes are more focused towards them (Abdul Samad, 2002).

While some studies investigated the main board companies to conduct the value relevance of the intangible assets (Mohd et al., 2006; Abdul-Shukor et al., 2008) and of earnings and book value (Aba Ibrahim et al., 2009), the second board has not been well researched. Therefore, this study extends the above studies by testing whether listing companies on main or second board can influence the value relevance of their earnings, book value, and cash flows. It is expected for this study to find that the accounting information will be more value relevant for companies listed in main board than those listed in second board because the second board companies are of low quality due to the high asymmetric information (How et al., 2007), while the main board companies are required to disclose more relevant information to reduce FS users uncertainty (Abdul Samad, 2002). This variable as one of the current study's independent variables is measured by differentiating the main and second board companies (Al Arussi et al., 2009).

2.5.3. Company's age

The year in which a firm is registered at the legal affairs bureau is defined as its birth year and the period from this year to current year is the age of the firm (Sakai et al., 2010; Choi et al., 2011). The impact of company's age on the financial disclosure has been tested and it found to be significant because old companies might improve their annual reports over time (Camfferman and Cooke, 2002; Al Arussi et al., 2009). As a result, the asymmetric information is reduced and the value relevance of the accounting information is enhanced.

The correlation of firm age with its profitability has been examined by Warusawitharana (2010) and found to be positive in the firm's early years, followed by a slow declined correlation between profitability and age. In particular, profitability jumps have been found in young firms that have higher investments, sales growth and external financing. Accordingly, the age impact on firms' decisions is more pronounced in younger firms.

A company's age (life cycle) has been divided by the economic literature into four periods, which are start-up, growth, mature and decline (Anthony and Ramesh, 1992; Black, 1998; Aharony et al., 2006). This classification is according to the firm's specific characteristics, such as the firms' uncertainty degree, assets in place, and investment opportunities (Mueller, 1972; Myers, 1977; Anthony and Ramesh, 1992).

The influence of company's age on the value relevance of earnings and cash flows has been tested by Black (1998) and Aharony et al. (2006). Cash flows are more value

relevant than earnings in most firms' life cycles (Aharony et al., 2006). Black study (1998) concluded that cash flow from operation is more value relevant than earnings in growth and decline and mature decline firms. It is incrementally significant in mature and mature decline firms, while it is marginally significant in growth mature firms. Cash flow from investment is more value relevant than earnings only in start-up firms, while it is not in growth and decline firms. It is incrementally significant in mature and mature decline firms. Cash flow from financial activities is marginally significant in growth mature and mature firms, while it is not in mature decline firms.

A major factor affecting the value relevance is the asymmetric information, which is argued to be higher in young companies than in old ones (Ho and Wong, 2001; Al Arussi et al., 2009). Therefore, young companies have to increase their disclosure to provide more relevant information. On the other hand, old companies try to differentiate themselves from the younger ones by disclosing more information to provide relevant information as they have more control over their market (Hughes, 1986; Al Arussi et al., 2009).

The current study classifies its companies sample into old and young according to its birth date. This study links the company's age to the earnings, book value, and cash flows to investigate whether company's age has any influence on the value relevance of these accounting variables. While Black (1998) and Aharony et al. (2006) examined the value relevance of earnings and cash flows in a company's different life cycles, the influence of company's age on the value relevance of book value has not been researched before,

particularly in Jordan. The current study extends these studies by testing the influence of company's age on the value relevance of earnings, book value, and cash flows in Jordan.

As old companies always improve their annual reports quality overtime and at the same time young companies are motivated to improve their financial disclosure as they choose to go public at an early age in order to have financial resources to grow in the future (Huynh and Petrunia, 2010), the current study has no clear idea about the influence of the company's age on the value relevance of the accounting variables. The company's age as one of the current study's independent variables is measured by the number of company's life years (Alsaeed, 2005; Cazavan and Jeanjean, 2007; Firth et al., 2008).

2.6. Type of industry and value relevance

Different industries provide different levels of financial information. Limited financial information could be provided by banking, insurance sector, and financial services in comparison with industrial sector (Lymer, 1997). This is due to that each industry has its own characteristics in terms of growth, competition and risks. A difference in these characteristics will result in differences in disclosure policies among companies (Dye and Sridhar, 1995). Bartram (2007) showed that industry classification is an important factor in determining the relationship between earnings, cash flows, and stock prices.

Prior value relevance studies concluded that the accounting information is value relevant in industrial sector (Harris et al., 1994; Misund et al., 2005; Vardavaki and Mylonakis,

2007; Hadi, 2006; Oyeriend, 2009; Gee-Jung, 2009), while it is declined in this sector (Collins et al., 1997; Francis and schipper, 1999). Other value relevance studies concluded that the accounting information is value relevant in services sector (Harris et al., 1994; Ely and Waymire, 1999; Dastgir and Velashani, 2008; Gee-Jung, 2009), while it is irrelevant or declined in this sector (Amir and Lev, 1996; Bao and Bao, 2001). All the mentioned studies examined the value relevance of the accounting information according to different sectors, while the impact of industry type on the value relevance of the accounting information has been examined in few studies (Abayadeera, 2010a, 2010b).

Abayadeera (2010a, 2010b) examined the influence of industry type on the value relevance of earnings and book value for Australian companies. Her sample included 91 companies from different sectors (pharmaceuticals, biotechnology and life sciences; technology, hardware and equipment and telecommunication services). She found that book value is value relevant in both industrial and services companies, while earnings are value relevant in services companies.

As one-third of Jordan's rapid economic growth is addressed to industrial sector, this sector plays a major role in Jordanian economy. This might explain the GDP growth at around 35% in the 1970s that is doubled in the last two decades (Alakra et al., 2009). Despite this growth, services sector's share was even higher than that of industrial due to activity in the real estate market (Marashdeh, 1996).

The current study incorporates industry type impact on the value relevance of earnings, book value, and cash flows in order to determine whether the industry type display any influence on the value relevance of these accounting variables. Depending on ASE sectors classification, the current study traces the impact of two different sectoral groups, which are the industrial and services sectors (excluding financial sector),²⁰ on the value relevance of these accounting variables. Each sector includes companies under different activities (please refer to Appendix 3).

Since the accounting information is positively or negatively associated with share price in different industry types, it is expected for the current study to find that the type of industry will influence the value relevance of earnings, book value, and cash flows in Jordan. The researcher has no prediction about which sector will have more influence on the value relevance of these three accounting variables because this influence has not been well researched before in addition to the mixed results in the previous studies. Type of industry as one of the current study's independent variables is measured by differentiating the industrial and services companies (Naser et al., 2002; Ahmed et al., 2003; Abayadeera, 2010a, 2010b).

2.7. Share price proxies and value relevance

Securities are rights that must be documented and this document must be presented when executing or transferring these rights (Krause, 2000). When these rights became a future cash flows sequence, they will be named securities (Dumas and Allaz, 1996). Also,

²⁰ Financial sector (banking, insurance and finance industry) has been excluded from the sample due to the specific accounting practices nature and it is controlled by specific regulations.

information about a security can be revealed by the market (Hayek, 1945; Krause, 2000) on which prices can be observed at nearly no cost (Krause, 2000). While no additional cost has been involved, the investor can (1) increase his information, (2) reduce the risk of trading at advantageous price, and (3) reduce trading cost (Krause, 2000).

While reducing trading cost can benefit the investor by increasing his return and reducing the price that he is willing to buy for assets, it can benefit the assets issuers by issuing their assets at a higher price, reducing the cost of capital, and increasing profit (Keynes, 1930). The latter will give incentives for more investments and promote economy growth (Krause, 2000). Thus, investors used the securities prices to indicate the value of the firm that they decide to invest in.

Fama (1970, 1991) pointed out that under the efficient market hypothesis (EMH), share market will positively respond to earnings that are delivered via decision taken according to relevant information. A reaction has been tested between share prices and earnings announcement as (1) in the week following the announcement date (Beaver 1968), (2) the day and the day before the announcement date (Morse, 1981), and (3) within hours of the announcement date (Patell and Wolfson, 1982). It is found that much of the change in share price is associated with the changes in earnings that happened before the annual earnings announcement date (Benston, 1967; Ball and Brown, 1968).

Like other countries, Jordanian financial market (ASE) provides investors with daily, weekly, monthly, and yearly bulletin information by ASE website database to evaluate

the performance of ASE listed companies. This information includes the company's name and symbol according to boards and sectors, last stock market closing price, highest and lowest price, closing price, change in share prices, value traded in Jordanian Dinar, average annual share price, number of stocks and turnover ratio.²¹ The information related to share prices at different periods is used as a measure to support decisions of investors, managers, analyst and other users by comparing the current published information about a company with that of other companies or within its past periods.

The capital market research relates the accounting information with share price to infer the importance of the accounting information (Hassan, 2004). In prior studies, share price has been measured in different dates related to the purpose of these studies (please refer to Table 3.2). This study uses share price as the study's dependent variable in three proxies which have been used in the accounting value relevance studies. The share price is used in this study as average annual share price, annual closing share price, and share price after a three-month period following the financial year-end (ATM-share price).

2.7.1. Average annual Share price

Although average annual price per share is published in most of the financial markets, few studies employed this measure in the valuation studies, such as Grabowski and Mueller (1975) and Oyerinde (2009). Following these studies, the current study uses share price as the annual share price rates (average price). This variable as one of the

²¹ Please refer to Appendix 4 as example of yearly bulletin information.

current study's dependent variables is measured as average annual share price of a company listed on ASE of the financial year.

2.7.2. Annual closing share price

Many studies on the value relevance of accounting information used annual closing share price (Beaver et al., 1980; Black, 1998; Powell et al., 2001; Bao and Bao, 2001, 2004; Bao, 2004; Khaleel, 2005; Anandarajan et al., 2006; Chen and Zhang, 2007; Dastgir and Velashani, 2008). Following the aforementioned studies, this study uses the annual closing share prices that are documented in the yearly bulletin of ASE for the companies listed on ASE within the research period. This variable as one of the current study's dependent variables is measured by annual closing share price of a company at end of the financial year.

2.7.3. Share price after a three-month period following the financial year-end (ATM-share price)

Basu (1983) pointed out that accounting data is available within three months of financial year end. So, the accounting information cannot be available at the reporting period end as there is 2-3 months delay before the announcement of the audited annual report (Klimczak, 2008). Therefore, many value relevance studies used share price after a three-month period following the financial year-end (Hellstron, 2005; Vardavaki and Mylonakis, 2007; Bae and Jeong, 2007; Habib and Weil, 2008; Kanagaretnam et al., 2009). This variable as one of the current study's dependent variables is measured by

share price of a company after a three-month period following the financial year-end (ATM-share price).

2.8. Control variables

As referred in prior research, many variables have been found to be controlled when examining the value relevance of the accounting information. For the purpose of the current study, two variables have to be controlled, which are firm size and leverage. These control variables are included in the study's models to indicate their impact on the results. These variables are discussed in the next subsections.

2.8.1. Company's size

Large companies have large accounting variables then large book value and large earnings, therefore it is important to control the difference in size among companies (Ota, 2001). In prior studies, company's size has been used in different measures, such as market capitalization (Harris and Gurel, 1986; Shleifer, 1986; Vijh, 1994; Beneish and Whaley, 1996; Lynch and Mendenhall, 1997; Tkac, 1999; Kim and Yoo, 2009; Roll et al., 2009), log of assets (Lin et al., 2007; Firth et al., 2008; Anandarajan and Hasan, 2010), sales turnover and capital employed (Firth, 1979; Dahawy, 2009), number of shareholders, turnover and total assets (Cooke, 1991) and number of employees, turnover, companies average market value, and total assets employed (Craven and Marston, 1999; lang and Lundholm, 2000).

In industrial economies literature, the association of firm size and profitability has been tested and mixed findings have been found. While Marcus (1969) and Amato and Wilder (1985) found a weak negative or no association, Hall and Weiss (1967) found it to be positive. Dhawan (2001) examined the relationship between profitability and firm size for U.S. companies according to services and manufacturing sectors, and he concluded a negative association between profitability and firm asset size. Value of assets in place is equal to the firm value (Jorion and Talmor, 2001). It is found that firms with a similar size have greater tendency to move up and down together with their share prices than firms with different size (Huberman and Kandel, 1987).

Since larger firms are more exposed to the public eye, take less time to report (Dyer and McHugh, 1975) and more information is available about them, foreign investors tend to have more knowledge about large firms than about small ones (Kang and Stulz, 1997). This leads to the expectation that less information asymmetry or lower cost of information acquisition will be found between domestic and foreign investors in large size firms (Covrig et al., 2006). Kim and Yoo (2009) measured the firm size by its common stocks market capitalization at the end of a year and used it as a proxy for the information asymmetry degree.²² They argued that the larger the firm size, the lower the information asymmetry degree. A negative association has been found between firm size and information in the earnings announcement (Bamber, 1986).

²² Market capitalization is a major factor that is used in determining the relationship between earnings, cash flows and stock prices (Bartram, 2007).

From the aforementioned discussion, since the firm size is an important factor related to the firm's accounting information availability to reduce the information asymmetry, the current study uses this variable as a control variable to conduct the value relevance of earnings, book value, and cash flows in Jordan. Following Anandarajan and Hasan (2010) who used the firm size as their control variable to examine the value relevance of earnings for Jordanian companies, the current study extends their study by employing the firm size as a control variable to examine its influence on the value relevance of earnings, book value, and cash flows for ASE companies. This variable is measured in this study by log of total assets (Hassan, 2004; Lin et al., 2007; Anandarajan and Hasan, 2010).

2.8.2. Leverage

Financial ratios are commonly extracted from FS (balance sheet, income statement, cash flows, etc.). While the financial ratios are categorized into four main categories, the financial leverage (debt to total assets ratio) has been categorized within the financial structure category (Wang, 2009).²³ Companies that are financed via debt can be considered as highly leveraged one if this ratio increased. This implies more risk which will be associated to the firm's operation.

Since high levels of debt increase the interest payments (Matsa, 2010), too high leverage ratio would make an investment at risk (Myers et al., 1998). Although leverage is a strong predictor for a firm's credit rating, firms' investments riskiness is another factor that

²³ The main four categories for evaluating financial performance of firm are financial structure, solvency, turnover and profitability. Other ratios in financial structure category are; fixed assets to stockholder's equity ratio, fixed assets to long term liabilities ratio, fixed assets to long term capital ratio, stockholder's equity to total liabilities ratio and working capital to total assets ratio. The ratios in each group are similar (Wang, 2009).

affects this rating. A firm is considered to be having lower credit rating if it has low leverage but a very risky investment than a firm with high leverage but more conservative investments. Decreasing a firm's leverage could be a wise step to take to reduce the probability of firms to be in financial distress because when firms cannot fulfill their debt payments, bankruptcy may occur (Verwijmeren and Derwall, 2010).

Firms that disclose information of high quality incurs lower debt and equity capital cost (Botosan, 1997; Sengupta, 1998; Botosan and Plumlee, 2002). According to the financial theory, financial leverage (using the debt capital) will increase the shareholders risk. While a positive correlation has been found between the financial leverage and the equity risk (Hamada, 1972; Galai and Masulis, 1976; Karma and Sander, 2006), a negative relationship between leverage and a firm's profitability has been found (Rajan and Zingales, 1995; De Jong et al., 2008; Verwijmeren and Derwall, 2010).

Leverage is included in the current study as a control variable because companies' risk level is asserted to play a moderating role in accordance with the factors that influence the value relevance of accounting information (Kothari, 2000). Leverage in this study is measured by the ratio of debt to total assets (Anandarajan and Hasan, 2010; Choi et al., 2011).

Finally, from the aforementioned discussion in previous sections (2-3 to 2-8), the gap between the current study and prior studies is reported briefly in table 2.5.

Table 2.5*Research Gap Relative to Prior Studies*

No.	Prior studies	Research gap
1	Examining <ul style="list-style-type: none"> - Value relevance of earnings, book value, or cash flows individually or in a combination of two relative to one or more share price measurements. (Bowen et al., 1987; Dechow, 1994; Amir and Liv, 1996; Collins et al., 1997; Francis and Schipper, 1999; Barth, 2000; Bao, 2004; Hadi, 2005; Vélez-Pareja, 2005; Anandarajan et al., 2006; Thinggaard and Damkier, 2008; Thi and Schultze, 2009; Oyerinde, 2009; Gee-Jung, 2009; Anandarajan and Hasan, 2010). - Value relevance of earnings per share, book value of equity per share, and cash flows (not defined) per share simultaneously (Khanagha et al., 2011). 	Examining the value relevance of earnings per share, book value of equity per share, and cash flows from operation per share simultaneously relative to three share price proxies (average annual share price, annual closing share price and ATM-share price).
2	Examining whether the value relevance of earnings per share, book value of equity per share is influenced by: <ul style="list-style-type: none"> - Foreign ownership (Bae and Jeong 2007; Anandarajan and Hasan 2010). - Trading volume (Dontoh et al., 2004; Liu and Liu, 2007). 	Relative to three share price proxies, examining the value relevance of earnings, book value, and cash flows influenced by: <ul style="list-style-type: none"> - Foreign ownership. - Trading volume.
3	Examining impact of <ul style="list-style-type: none"> - Disclosure timing on financial disclosure quality (Dyer and McHugh, 1975; Whittred, 1980; Kross, 1981; Givoly and Palmon, 1982; Patell and Wolfson, 1982; Debreceeny et al., 2002; Sengupta, 2004). - Shareholders number on the disclosure level (Singhvi and Desai, 1971; Firth, 1979; Cooke, 1989a, 1989b, 1991, 1992; Imhoff, 1992; Malone et al., 1993; Wallace and Naser, 1995; Heflin et al., 2001; Al Arussi et al., 2009). - Industry type on the value relevance of earnings and book value (Abayadeera, 2010a, 2010b). 	<ul style="list-style-type: none"> - Financial disclosure time. - Shareholders number. - Type of industry.
4	Relating accounting information disclosure quality to share price (Eccher and Healy, 2000; Gelb and Zarowin, 2002; Lang et al., 2003; Hassan, 2004; Hassan et al., 2010).	- Financial disclosure level.
5	Examining <ul style="list-style-type: none"> - Impact of company's age on the financial disclosure (Camfferman and Cooke, 2002; Al Arussi et al., 2009). - Value relevance of earnings and cash flows in a company's different life cycles (Black, 1998; Aharony et al., 2006). 	- Company's age.
6	Examining main board companies to conduct the value relevance of the intangible assets (Mohd et al., 2006; Abdul-Shukor et al., 2008) and of earnings and book value (Aba Ibrahim et al., 2009).	- Listing status.

2.9. Theoretical framework

In social sciences, an important interaction between theorizing and empirical work has been documented in the literature. Theories are necessary in (1) defining the interest areas, (2) differentiating the similar and dissimilar phenomena, and (3) tracking the changes in social and economic categories. The interaction between theory and definition has occurred due to gradually, repeatedly, and continually redefining concepts. The interaction between theory, empirical investigation, and conceptual refinement has affected the social facts collection (Gammeltoft et al., 2010). In the following subsections, the theories that are adopted in this study are discussed.

2.9.1. Valuation theory

When using the word "value", much confusion arises because it is often used to describe many concepts. Some of these concepts include the actual price exchange in the open market and value or market value which is an estimation of the stock selling price in the market. In the economics language, price is market value and they can both be considered as exchangeable values (Damodaran, 2007). Many complex concepts which are drawn from economics, finance, and accounting fields must be well understood to fulfill the valuation requirements. Valuing a firm is an exact science, which can vary depending on business type and the reason for the valuation (Damodaran, 2002, 2006). Since firm valuation is important to examine the value relevance of accounting information to support FS users' decisions, the major theory that is adopted in this study is the valuation theory.

Three primary value approaches have been considered in valuation theory which are: the cost (or assets) approach; the income approach and the market approach (Damodaran, 2007). **The cost approach** focuses on determining the firm's assets market value less the liabilities fair market value to compute the net assets fair market value. The economic principle of substitution, which the cost approach is based on, replaces the existing assets by the cost with functional equivalents that give the owner the same economic benefits. This approach has been used in many studies (Lang et al., 1989; Liu et al., 2002; Lie and Lie, 2002). This approach, importantly, is not particularly applicable to valuing whole firms or equity interests.

The income approach includes variations based on economic income definition, projection availability and discount rate determination. However, the valuation theory of each method depends on the same framework of the basic approach of discounted economic income. In this approach, the economic income is usually defined as: dividends, net cash flows to equity, net cash flows to invested capital, or net income after taxes. The expected economic income future periods are estimated and discounted by using an appropriate discount rate to present value. This approach has been used in many studies (Samuelson, 1937; Williams, 1938; Durand, 1957; Gordon, 1962; Shiller, 1981; Fuller and Hsia, 1984; Sorensen and Williamson, 1985; Poterba and Summers, 1988; Fama and French, 1988; Damodaran, 1994, 2002, 2006; Foerster and Sapp, 2005). Using the basic income approach of discounted economic income in forecasting economic income in future periods has a common hurdle, which is the sufficient availability of a reliable set of future projected cash flows or earnings.

The market approach involves two primary variations: the first is the comparable transactions approach, which seeks market information on sales of comparable assets to get the fair market value of entity or assets. In this approach, the valuation (appraisal) starts by collecting information on market transactions that include assets sale and purchase (long term) comparable in nature to the valued entity. The appraisal can find market multiples to express the sales price in such basis sufficient to be applied to the entity or assets (Damodaran, 2002, 2007).

The second market-based approach is the guideline companies' approach of comparable guideline companies. In this approach, the appraisal begins by collecting market data about the financial performance of companies, which have a similar industry, with related functions and risks to the subject assets. The appraisal gathers a series of market multiples, based on the availability of comparable firms and data, which can be applied to the similar financial data for the company (Damodaran, 1994, 1999, 2007). These approaches have been used in many studies (Boatman and Baskin, 1981; Kaplan and Ruback, 1995; Beatty et al., 1999; Cheng and McNamara, 2000; Bhojraj and Lee, 2002; Bhojraj et al., 2003).

Under a willing buyer/seller concept, the fair market value (of assets or firms) establishment will be the same objective of all valuation approaches. Actually, to determine value, valuation analysts may follow more than one method, and often, results of one method with another have been corroborated (Damodaran, 2007). Since this study

tries to test the value relevance of the accounting information (earnings, book value, and cash flows), the market approach then the guideline companies approach are found as relevant to be adopted in this study.

The current study tries to extend this approach to include different accounting variables with different measurements of equity values. Since changes in accounting numbers could reflect changes in market equity values for companies in similar industry, this approach might assist market participants to better evaluate the changes in firm value.

In order to assess the usefulness of various accounting information in equity valuation, value relevance research examines the empirical relation between this information and stock market values (or changes in values). This relation can be investigated by two types of valuation models, which are the price model and the return model. While the return model examines the relation between stock returns, earnings and earnings changes, the price model examines the relation between share price, book value and earnings (Barth, 2000; Ota, 2001; Barth et al., 2001).

The choice between adopting price and returns models is dependent on the study's question. Price model is suitable for the determination of the value-relevance of accounting information, while returns are more suitable for explaining changes in value over the time (Whelan, 2004). For the current study, price model is the suitable one as this study focuses on the value relevance of the accounting information.

Accurate market price estimation must be produced for any valuation model to have validity. So the model should reflect the market culture and conditions at the time of the valuation. It is a must to remember that the model should represent the market underlying fundamentals and that the resulting figure of the valuation is "value" (Damodaran, 2002, 2007). The value relevance empirical research has its roots in the equity valuation models' theoretical framework (Vishnani and Shah, 2008). Ohlson (1995) and Felthman and Ohlson (1995) point out that the firm value can be expressed as a linear function of book value, earnings, and other value relevant information.

Since the price valuation model is used in previous studies to examine the value relevance of the accounting information (please refer to Table 2.1), it is relevant to be adopted in this study.

2.9.2. Efficient market hypotheses (EMH)

The early valuation studies are based on capital market theories. Ball and Brown (1968) were aware of Modigliani and Miller (1958) study which proposed that Efficient Market Hypothesis (EMH) is concerned in capital market studies, so they assumed that EMH is maintained (Brown, 1989; Klimczak, 2008).

In the late 1960s, a considerable doubt about the usefulness of the accounting information to evaluate the firm's financial health had been expressed (Hassan, 2004). Therefore, the capital market research uses share price to examine whether the reported accounting

information is useful to market participant for firm evaluation (Brown and Howieson, 1998). Ball and Brown (1968) and Beaver (1968) revealed that the market efficiency could provide a justification for the share price behavior selection as an operational test for the information usefulness in FS. They examined the influence of accounting announcement on share price. They are considered by Kothari (2001) to be the pioneers in the accounting capital market research. Brennan (1991) points out that Ball and Brown (1968) concluded that earnings as part of FS are used in forming share prices.

Three developments helped Ball and Brown (1968) and Beaver (1968) in developing their empirical accounting capital market research, which are: (1) positive economic theory; (2) efficient market hypotheses (EMH) and capital assets pricing model (CAPM); and (3) the event study methodology (Kothari, 2001). Based on the EMH and CAPM, the accounting capital market research has been developed (Hassan, 2004). If the market prices set is exactly the same when it is conditioned on the information or not, the market is considered to be efficient. Hence, the market efficiency will be referred to how the accounting information can reflect the changes in share prices (Brown, 1994). By comparing share prices immediately before and after releasing the information to the public, the effects of accounting information on share price can be investigated. This is the first approach of the accounting capital market research. The changes in share prices will be used to infer the usefulness of the published accounting information (annual reports) to the market participants (Brown, 1994; Kothari, 2001; Hassan, 2004).

As a study on value relevance is best done when the market is at its best (efficient) and since ASE obtained some very impressive growth rates within the last decade, it could be considered as efficient market. Therefore, EMH approach was adopted in the current study to examine the ability of the accounting information (earnings, book value, and cash flows) that are published in the annual financial reports to reflect the variance in share prices for Jordanian companies listed in ASE.

2.9.3. Foreign investment theory

While there is no established theory on multinational companies (MNCs) or foreign ownership prior to the 1960s (Dunning and Lundan, 2008), attempts to explain firms multinational activities have been found by (Buckley, 2011):

- A well formalized capital movements theory (Iversen, 1935);
- Studies on the factors that influence foreign ownership location (Southard, 1931; Marshall et al., 1936; Barlow, 1953; Dunning, 1958);
- Industries internationalization required a modification to trade neoclassical theories (Williams, 1929); and
- To embrace the entrepreneurship and business competence role, Lund (1944) has extended the international capital movements theory. He considered the entrepreneurial ideas and financial capital combination as an international wandering combination.

These activities explain the important role that foreign investments could play in extending and improving the local economy. Foreign investments in local markets lead them to keep compete to inter the global area.

Sethi et al. (2003) pointed out that the foreign ownership has been explained in literature by these theories. The earliest explanation for foreign ownership was by the capital movements theory (Iversen, 1935), which viewed foreign ownership as a part of portfolio investments (Aliber, 1971). Three distinct theories have been found to be the logical intersection for the foreign ownership theory, which are international capital markets theory, international firm theory, and international trade theory (Casson, 1985).

Early studies on MNCs from emerging economies emphasized differences between emerging multinational companies and the more established ones, such as proprietary advantages lack, late comer status, weaker institutions and etc. (Kumar and McLeod, 1981; Lall, 1983; Wells and Louis, 1983). However, these studies considered that theories that explained the foreign ownership and firms international activities, such as the international product lifecycle model (Vernon, 1966), internationalization stages model (Johanson and Vahlne, 1977), and the ownership internalization framework (Dunning, 1980, 1988) remain useful. Bae and Jenong (2007) and Anandarajan and Hasan (2010) concluded a positive impact for foreign ownership on the value relevance of the earnings.

Jordan, like other countries, tries to increase the foreign investment share in its local economy which needs to employ relevant information conducted from the financial reports that could reflect the market performance. Since the current study examines the impact of this factor on the value relevance of earnings, book value, and cash flows, it is clear that foreign ownership theory is relevant to be adopted in this study.

2.9.4. Trading volume theory

Most trading volume theories asserted that investors have different belief revisions that caused trading volume (Barron, 1995). Two basic assumptions are included in this theory, which are: (1) market agents revise their prices in a customary and distinctive manner; and (2) potential trading partners are randomly encountered. In the literature, trading volume theoretical treatment arises in three settings about its relation to the bid and ask prices, price changes, and information (Karpoff, 1986). It is found that trading volume is negatively related to the bid and ask prices (Cohen et al., 1979), positively related to the price change (Clark, 1973; Epps and Epps, 1976; Tauchen and Pitts, 1983), or noisily related to price change (Pfleiderer, 1984).

Karpoff model (1986) has been used to investigate how information affects trading volume. Trading volume increases with the occurring of informational events and increasing the share number and these results, according to Karpoff (1986), are consistent with many empirical evidences on the price changes to trading volume relationship.

When any single investor received unique information, the value of this information will be negated because the market price adjusts to reveal all information in the economy. This suggests that trading volume will depend on opinion differences even when investors received different information (Varian, 1985). This model has drawbacks, which are that while trading volume increases, prices decrease (Karpoff, 1986), and aggregate information is not fully revealed by the market price (Pfleiderer, 1984). This is

supported by Dontoh et al. (2004) and Liu and Liu (2007) who examined the impact of trading volume on the value relevance of the accounting information.

Since higher percentage of firm's shares may indicate a more active market, firm's tradable shares might explain the variance in the value relevance of accounting information in different stock markets (Chen et al., 2001). Whereas share price has the ability to fully reflect accounting information, there is a need to examine the impact of the total number of shares traded on the value relevance of accounting information for ASE companies.

While the current study tries to examine the influence of trading volume on the value relevance of the accounting information, the trading volume theory is found to have a close relationship with the accounting information, and thus is embedded in this study.

2.9.5. Litigation cost hypothesis

Since timeliness is the important characteristic for the information to be relevant (Obidat, 2007) and an essential element for adequate disclosure (Debreceeny et al., 2002), releasing information just in time can reduce the probability of litigations, which in turn minimizes the litigation cost (Dyer and McHugh, 1975; Givoly and Palmon, 1982; Debreceeny et al., 2002). This leads to alleviating the asymmetric information and enhancing the value relevance of accounting information.

Healy and Palepu (2001) pointed out that litigation cost hypothesis explains the impact of the shareholders on the disclosure decisions. They found that this impact can be in two

trends. The first is that shareholders have the right to sue managers for the insufficient or late disclosure. The second is that litigations will reduce the level of disclosing forecasting information because managers will be penalized for their incorrect prediction (irrelevant information). This will influence the level of information that is revealed to firm shareholders and other firm stakeholders.

Accordingly, firm managers will be motivated by the litigations absence to choose the suitable time to disclose firm news (good or bad) (Al Arussi et al., 2009). To reduce the litigation cost, managers will pre-disclose information if they have bad earnings (Skinner, 1994; Healy and Palepu, 2001). Managers also attempt to avoid any lawsuit, therefore they try to clarify any misunderstanding by disclosing more information at a timely basis (Al Arussi et al., 2009). In turn, this will improve the value relevance of the accounting information.

From the aforementioned discussion, litigation cost plays an important role in improving the value relevance of the accounting information. Therefore, since the litigation cost hypothesis is important to explain the impact of the financial disclosure time on the value relevance of the accounting information, this approach is adopted in this study.

2.9.6. Agency theory

Agency theory explains providing costly information to partners in cooperative situations (Fleisher, 1991). This theory argues that under incomplete information and uncertainty conditions, agency problems arise (Eisenhardt, 1989). Disclosing financial data is essential for the capital market efficiency and fairness, which is the belief that all investors must have the same access to the relevant information (Benston, 1973). Therefore, a sufficient information has to be disclosed by the managers as a way to reduce the agency gap and to strengthen the market (Richardson and Welker, 2001; Debreceeny et al., 2002).

Management, whose responsibility is preparing FS, has more information than investors about firm's activities and has an incentive to misrepresent this information which may influence the firm's share price. This leads to an information asymmetry which will negatively affect the value relevance of the accounting information and create agency problem (Holthausen and Watts, 2001). Information asymmetry (if it exists) can play a major role in expanding the gap between the managers and the other interested parties in addition to affecting markets in a long term (Weil, 2002). Healy and Palepu (2001) argue that information asymmetry and agency conflicts between managers and investors increased the demand for financial reporting and disclosure.

Due to the agency problem, differences in valuation may be involved according to Okuda et al. (2010) who found that according to agency hypotheses, it is important to provide separate financial values. Based on interest-conflict, agency problems could play an

important role in firm valuation. Therefore, since the agency theory has a strong relation with the financial disclosure level and the relevant information, it is adopted in this study.

2.9.7. Shareholders theory

Shareholder theory involves using the shareholder rights claims to excuse violation of others' rights (Freeman et al., 2004). When making business decisions, still the best framework to balance the various stakeholders competing interest is provided by shareholder theory (Danielson et al., 2008). While the company according to the stakeholder theory should be managed as a social institution that provides current and future benefits to stakeholders (DesJardins and McCall, 2005), the companies' managers' primary duty has been defined by the shareholders theory as the shareholders wealth maximization (Friedman, 1962).

Most of financial economists have accepted the shareholders wealth maximization as a suitable objective for making financial decision. Since the shareholders theorists are concerned by the asymmetric information between the agent and principal (Carrillo, 2007), shareholders have the rights to know how their investments are used, and they need to be sure that their equity is not subjected to any misuse by the managers. So to alleviate the problem, many actions such as increasing disclosed information or establishing monitoring mechanisms have to be taken (Xiao et al., 2004; Marston and Polei, 2004; Al Arussi et al., 2009).

Shareholders theorist followed the statement that business social responsibility is to increase business, and the main companies' goal is considering that shareholders interest is in the increase in their shares value. This concept includes that company's directors and executives will be as agents for the shareholders, and they must use companies' resources for the benefits of their principal. Further, they would pursue their own benefits (Carrillo, 2007).

However, by controlling the company, shareholders can directly or indirectly affect the managers' decisions (Deegan, 2002; Al Arussi, 2008). This will enforce the managers to follow the shareholders' demands (Ullmann, 1985) and disclose the relevant information that they need. Although managers are directed by the shareholder theory to maximize shareholders wealth, they face incentives (formal and informal) to increase companies' share price. A company's share price might diverge from its intrinsic value, which can occur even in the efficient market due to the information that has been instantaneously and continuously communicated to the markets (Danielson et al., 2008).

As mentioned in section 2.5.1, managers try to increase shareholders number in order to increase share values (Amihud et al., 1999), and it is clear that the extent in companies' shareholders is related to the relevant information disclosed by these companies, therefore the shareholders theory is suited to be adopted in this study.

2.9.8. Capital market structure theory

In stock market, firms with internal or external funds may maximize their value by adjusting their capital structure to enhance their position in the market. Efficient market has been defined as the one in which share prices can fully reflect all available information (Fama, 1970, 1991).

Capital structure differences can reflect the differences in the growth opportunities importance (Ahmed and Hisham, 2009). These opportunities (reflected by accounting information) will affect the firm value. Growth opportunities are high in main stock board compared with second board because the public eye is more focused toward them (Abdul Samad, 2002).²⁴ This is because these companies are likely to disclose more relevant information to capture more investment opportunities and enhance their profitability (Al Arussi et al., 2009). Literature provides evidences that more profitable firm might have more debt to insure firm value and control managerial behavior (Ahmed and Hisham, 2009).

Literature has explained the capital structure (types, costs and time) by many theories, such as agency theory, pecking order theory, market timing theory and tradeoff theory (Huang and Ritter, 2004, 2009; Ahmed and Hisham, 2009). The firm with higher leverage (debt financing) will increase agency cost of debt (Ahmed and Hisham, 2009),

²⁴ According to JSC requirements, making profit for at least two years out of the last three years allows the company to transfer from second board to main board (JSC, 2010). Please refer to Appendix 2.

and make its investments at risk (Myers et al., 1998). It is important to note that capital structure formation does not necessarily control the agency cost. Agency theory predicts that growth firm should have less debt. When firms make profitable investments, it will have less need to discipline that debt provides (Ahmed and Hisham, 2009). Finally, reducing agency costs and improving firm disclosure lead the firm to attain its profitability.

The pecking order theory states that external funds and external equity are more expensive than internal funds and external debt respectively. Therefore, securities issues must be rare and have material influence on firms' capital structure with insufficient internal funds. According to the market timing theory, securities issues can play an important role in capital structure determination, while in tradeoff theory, issuing securities assist firms to adjust toward their target leverage (Leary and Roberts, 2004).

Since the relevant accounting information plays a real role in evaluating the capital structure and then the firm value, this is of interest to indicate company's position in the market and its financial leverage (as a debt compared with its assets). To test the influence of listing status and leverage on the value relevance of earnings, book value, and cash flows, it is clear that linking the capital structure theory with the valuation theory was relevant to be embedded in this study.

2.9.9. Firm life cycle theory

According to firm life cycle theory, Mueller (1972) states that:

“Age is a better explanatory variable than size in determining growth. In fact the latter loses all of its explanatory power when age is included with it in an equation...If these results also apply to firms, they indicate that young firms grow faster than old ones regardless of their size, and that large and small firms of the same age have the same growth rate” (pg: 210).

Since firms would try to distinguish themselves from others with regard to quality and performance (Morris, 1987; Watts and Zimmerman, 1986; Skinner, 1994; Al Arussi et al., 2009), economic literature, as mentioned before, divided the company's age period into sub-periods depending on firms' uncertainty degree, assets in place and investment opportunities (Mueller, 1972; Myers, 1977; Anthony and Ramesh, 1992).

Firm life cycle theory was developed by Mueller (1972) and Grabowski and Mueller (1975) to explain the share value in many firm life cycle. There are many important implications for the life cycle theory regarding the efficiency of the capital market operation. Firms are likely to issue new equity when it is younger or having high investment opportunities relative to cash flows (Grabowski and Mueller, 1975). Young firms will find a lower demand for their new issued shares because shareholders will cut back on purchasing these shares to compensate the reduction in dividend income (Mueller, 1972). According to this theory, young firms or companies invest at roughly the levels that maximize present values, while mature firms re-invest too large a percentage of their internal funds (Grabowski and Mueller, 1975).

Since the firm life cycle theory has been adopted by many value relevance studies (Anthony and Ramesh, 1992; Black, 1998; Aharony et al., 2006), it is clear that the concept of this theory has a close relationship with the value relevance of accounting information, hence, it is adopted in this study.

2.9.10. Business entity approach

Economic theories have widely studied the economic activities of the firm (Heilbroner and Thurow, 1998; Heilbroner, 1999). Firms' economic activities types have been studied by many theoretical approaches. Business entity approach is one of these approaches. This approach was used in classifying firms based on their economic activities types (Concept and Standards Research Study Committee (CSRSC), 1965; Holmes and Stevens, 2004; Oliveira et al., 2007a, 2007b; Office for National Statistics (ONS) in U.K., 2009).

A business entity is an enterprise unit (formal or informal) that is organized to achieve specified express or implied purposes. Profit objectives, goods and services acquisition, transferring these acquisitions and delivering the resulted outputs to the market are the usual activities of an entity. The business entity can be defined as economic, social, legal, political, professional, or other definitions. From the accounting view point, the business entity can be defined as an area of economic interest to a specified parties or groups. Entity's accounting includes accumulating information about this area and communicating this information to the interested parties (CSRSC, 1965).

In most stock markets, the companies have been classified based on the economic activity structure. This classification includes sector and products. This classification can be sub-classified to cover the different economic activities such as distribution, transport, and services (ONS, 2009). Within a country, classifying companies according to their economic activities form an important step in building tools to obtain information that can assist in performing the economic activities statistical analyses (Oliveira et al., 2007a, 2007b). Each country has its own classification system (Holmes and Stevens, 2004).

While the entity concept, according to business entity approach, is essential to accounting and the financial reports are interested in business entities and their activities, the entity concept's role in accounting is to distinguish the information that is relevant and the information that is not (CSRSC, 1965). From the above discussion, it is clear that the business entity approach is related to the relevant information of the financial reports, thus it is adopted in this study.

2.9.11. Firm size theory

Theories of the firm size can be categorized as technological, organizational and institutional depending on whether they focus on the production function, the control process or the economic environment influences (Kumar et al., 2001; Kaen and Baumann, 2003). Technological theories related the firm size and profitability to the physical capital and economies of scale and scope (Kaen and Baumann, 2003).

Organizational theories link both firm size and profitability together with organizational transaction costs (Alchian and Demsetz, 1972; Williamson, 1975, 1985), agency costs (Jensen and Meckling, 1976; Klein et al., 1978), critical resource (Grossman and Hart, 1986; Hart, 1995; Rajan and Zingales, 2001), and competency (Foss, 1993; Niman, 2002).

Institutional theories link the firm size to legal systems, anti-trust regulation, patent protection, market size, and the financial markets development (Ringleb and Wiggins, 1990; Rajan and Zingales, 1998a; Kumar et al., 2001; Kaen and Baumann, 2003).

Critical resource approach link both the firm size and profitability together where increasing firm size leads to lowering its profits. However, under a firm critical resource approach, small firms are not necessarily being less profitable than large firms within a given institutional environment (Rajan and Zingales, 1998b, 2001; Holmstrom, 1999; Kumar et al., 2001; Kaen and Baumann, 2003). Since the firm value equal to the value of assets in place (Jorion and Telmor, 2001) and a direct relationship has been found between firm's total asset sizes and its profitability which has been used as firm value determinant (Kantudu, 2008), this approach is relevant to be adopted in this study.

2.10. Conceptual framework

Based on the previous sections, eight selected institutional factors categorized in four groups including economic factors (foreign ownership and trading volume), corporate governance (financial disclosure time and financial disclosure level), company's

characteristics (shareholders number, listing status and company's age) and type of industry with three accounting variables namely earnings, book value of equity and cash flows from operation are linked to three different proxies for share price after controlling two variables which are firm size and leverage. All these are diagrammed into a framework as illustrate in Figure 2.1.

Independent Variables

Dependent Variables

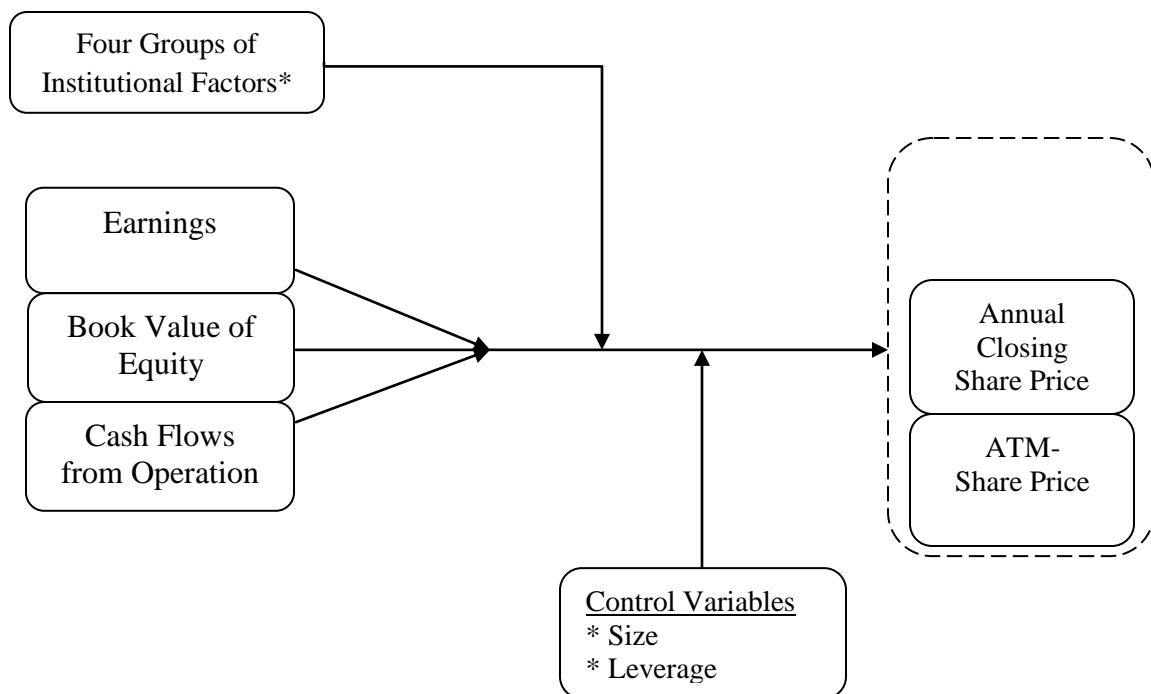


Figure 2.1
Conceptual Framework

Note:

* Four groups of institutional factors:

Economic factors: Foreign ownership and trading volume.

Corporate governance: Financial disclosure time and financial disclosure level.

Company's characteristics: Shareholders number, listing status and company's age.

Type of industry: Services and industrial companies.

According to this framework, the relationship between earnings, book value, and cash flows and market value (share price in three proxies) is formulated in Hypothesis (1). This relationship influenced by the four institutional factors is formulated in Hypotheses (2, 3, 4 and 5), while the comparison among the three share price proxies is formulated in Hypothesis (6). These hypotheses have been tested with and without controlling company's size and leverage.

2.11. Summary

In this chapter, the prior studies on the value relevance of earnings, book value, and cash flows in Jordan and other different countries have been reviewed. The influence of the four groups of institutional factors on the value relevance of these accounting variables has been discussed as referred in literature. Theories that are related to the value relevance of the accounting information and the impact of the selected institutional factors on this value relevance have been reviewed. Study's conceptual framework was diagramed. This framework is discussed in the next chapter.

CHAPTER THREE

HYPOTHESES DEVELOPMENT AND RESEARCH METHOD

3.0. Introduction

This study aims to examine the value relevance of accounting information (earnings, book value of equity and cash flows from operation) with the influence of four groups of institutional factors, which are economic factors, corporate governance, company's characteristics, and industry type after controlling company's size and leverage to indicate how these factors can affect the value relevance of the accounting information in Jordan. To indicate the value relevance of these accounting variables and the impact of the mentioned institutional factors on this value relevance, the relationship between eleven independent variables (IVs) and three dependent variables (DVs) after controlling two variables has been tested in this study. The expected results may assist investors in better evaluating the firm value.

Measuring the value relevance of earnings, book value, and cash flows may increase FS usefulness by alleviating the asymmetric information and helping FS users in making the right decisions. The study's hypotheses development and methodology are presented in this chapter. Starting with hypotheses development and followed by operational definitions, research strategy, research design, variables measurement, data collection and technique of data analysis are discussed in the next sections. Finally, the last section summarizes this chapter.

3.1. Hypotheses development

Based on study's theoretical framework (Figure 2.1), totally, seven groups of variables were discussed in previous chapter which are:

1. Accounting information (earnings, book value of equity and operating cash flows);
2. Economic factors (foreign ownership and trading volume);
3. Corporate governance (financial disclosure time and financial disclosure level);
4. Company's characteristics (shareholders number, listing status and company's age);
5. Type of industry (services and industrial) ;
6. Control variables (company's size and leverage); and
7. Share price proxies (average annual share price, annual closing share price, and ATM-share price).

This section discusses the study's hypotheses. To develop the study's hypotheses, a hypothesis must be specific in order to facilitate analysis of its testing. Its specificity can be evaluated by determining whether it can be tested quantitatively using operational definitions. A hypothesis may need to be divided into more specific sub-hypotheses, possibly requiring some degree of conceptual analysis (Krishnaswamy et al., 2008).

Therefore, in accordance with share price proxies, the study's hypotheses are divided into three sub-hypotheses in order to facilitate testing and analyzing the variables in ASE. This will present knowledge whether there is a gap between the value relevance of the variables relative to the three share price proxies. The hypotheses descriptions are presented in the next subsections.

3.1.1. Value relevance of earnings, book value, and cash flows: H1

Many studies examined how much the variance in share price can be explained by earnings and book value to indicate the value relevance of these variables (Ohlson, 1995; Felthman and Ohlson, 1995; Collins et al., 1997; Francis and Schipper, 1999; Ely and Waymire, 1999; Bao and Bao, 2001, 2004; Bao, 2004; Whelan, 2004; Vardavaki and Mylonakis, 2007; Anandarjan et al., 2006; Dastgir and Velashani, 2008; Oyerinde, 2009; Gee-Jung, 2009; Anandarjan and Hasan, 2010).

Other studies examined how earnings and cash flows can explain the variance in share price to conduct the value relevance of these variables (Black, 1998; Hadi, 2005; Misund et al., 2005; Aharony et al., 2006; Vishnani and Shah, 2008; Gee-Jang, 2009).

As mentioned before (section 2.2), although the value relevance of earnings, book value, and cash flows individually and in a combination with each other has been widely researched, the value relevance of these variables has been simultaneously tested in few studies (Khanagha et al., 2011). Therefore, by examining the value relevance of earnings, book value, and cash flows simultaneously, this study extends the literature and it is the first in Jordan. Based on the study's first question and objective and as earnings are expected to be the best predictor (among earnings, book value, and cash flows) to firm value, the first main hypothesis is:

H1: The value relevance of earnings is greater than that of book value and cash flows.

As mentioned before, earnings are expected to be the best predictor for firm value compared with cash flows and book value because earnings present the company's

profitability as it is evidenced in most prior studies. This hypothesis is divided into three sub-hypotheses in accordance with share price proxies as follows:

H1a: The value relevance of earnings relative to average annual share price is greater than that of book value and cash flows.

H1b: The value relevance of earnings relative to annual closing share price is greater than that of book value and cash flows.

H1c: The value relevance of earnings relative to ATM-share price is greater than that of book value and cash flows.

3.1.2. Economic factors and value relevance: H2

This study aims to indicate whether the value relevance of earnings, book value, and cash flows can be influenced by the company's foreign ownership and trading volume. While the previous chapter reviewed the prior studies that examined the influence of foreign ownership and trading volume on the value relevance of earnings or/and book value, this section hypothesizes this influence on the value relevance of earnings, book value, and cash flows. Therefore, based on the study's second question and objective, the researcher stated his second main hypothesis as follows:

H2: The value relevance of earnings, book value, and cash flows is influenced by economic factors.

The influence of foreign ownership and trading volume on the value relevance of earnings, book value, and cash flows is hypothesized as follows:

1. Foreign ownership: H2-1

Few studies examined the influence of foreign ownership on the value relevance of accounting information focusing on earnings. While foreign ownership has a strong positive effect on the value relevance of earnings in Korea (Bae and Jeong, 2007) and in Jordan (Anandarajan and Hasan, 2010), the current study adds book value and cash flows to capture the impact of foreign ownership on the value relevance of these accounting variables simultaneously and indicate whether adding these variables will affect the results of Anandarajan and Hasan (2010) in Jordanian companies. Relative to this factor, the second main hypothesis is divided into three sub-hypotheses in accordance with share price proxies as follows:

H2-1a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies with foreign ownership.

H2-1b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies with foreign ownership.

H2-1c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies with foreign ownership.

2. Trading volume: H2-2

Limited studies have examined the influence of trading volume on the value relevance of accounting information. These studies focused mainly on earning and book value. Trading volume has a significantly negative influence on the value relevance of earnings and book value (Dontoh et al., 2004), and it has an insignificant influence on the value relevance of these variables (Liu and Liu, 2007).

Since the influence of trading volume on the value relevance of cash flows has not been researched before particularly in Jordan, as far as the researcher is concerned, this study extends the studies of Dontoh et al. (2004) and Liu and Liu (2007) by examining the influence of trading volume on the value relevance of earnings, book value, and cash flows in Jordan to indicate whether adding this variable will affect the results of these studies. Since Clark (1973), Epps and Epps (1976) and Tauchen and Pitts (1983) have concluded a positive relationship between trading volume and change in share price, the current study hypothesizes a positive impact of trading volume on the value relevance of the accounting information. Relative to this factor, the second main hypothesis is divided into three sub-hypotheses in accordance with share price proxies as follows:

H2-2a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies with larger trading volume.

H2-2b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies with larger trading volume.

H2-2c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies with larger trading volume.

3.1.3. Corporate governance and value relevance: H3

This study objects to indicate whether the value relevance of earnings, book value, and cash flows can be influenced by the corporate governance (financial disclosure time and financial disclosure level) in Jordan. While the previous chapter reviewed the studies that examined the influence of these factors on the value relevance of

earnings or/and book value, this section hypothesizes this influence on the value relevance of earnings, book value, and cash flows. Therefore, based on the study's third question and objective, the researcher stated his third main hypothesis as follows:

H3: The value relevance of earnings, book value, and cash flows is influenced by the corporate governance.

The influence of financial disclosure time and financial disclosure level on the value relevance of earnings, book value, and cash flows is hypothesized as follows:

1. Financial disclosure time: H3-1

Since increasing the disclosure frequency can improve the financial reporting timeliness which is the basic element for adequate disclosure (Dyer and McHugh, 1975; Givoly and Palmon, 1982; Debreceeny et al., 2002), the delay in disclosing the information will maximize the litigation cost (Fama and Jensen, 1983; Weisbach, 1988; Borokhovich et al., 1996, Skinner, 1994, 1997).

So timing is an important determinant of disclosure that could influence the value relevance of the disclosed information. Since the influence of the financial disclosure time on the value relevance of earnings, book value, and cash flows has not been well researched particularly in Jordan, the current study tries to provide evidence about this area in literature. Relative to this factor, the third main hypothesis is divided into three sub-hypotheses in accordance with share price proxies as follows:

H3-1a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies conforming to the financial disclosure time.

H3-1b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies conforming to the financial disclosure time.

H3-1c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies conforming to the financial disclosure time.

2. Financial disclosure level: H3-2

Most recent standards generate value relevant accounting information (Healy and Palepu, 2001). The value relevance can be used as a metric in accounting standards evaluation (Holthausen and Watts, 2001). Many studies examined the association of share price with earnings and book value of equity to examine the accounting disclosures value relevance and concluded that it changed over time or it differs across disclosure regimes (Brown et al., 1999).

Many studies (Eccher and Healy, 2000; Gelb and Zarowin, 2002; Lang et al., 2003; Hassan, 2004) found that disclosing accounting information that is highly associated with share price is considered as high disclosure level. Also, it has been argued that high earnings response is found in firms with high disclosure level. Anandarajan and Hasan (2010) and Hassan (2004) investigated the influence of disclosure level on the value relevance of earnings and a combination of earnings and book value respectively and found it to be significantly positive.

The current study tries to extend these studies by examining the influence of financial disclosure level on the value relevance of earnings, book value, and cash flows in Jordan. Relative to this factor, the third main hypothesis is divided into three sub-hypotheses in accordance with share price proxies as follows:

H3-2a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies complying with the disclosure requirements.

H3-2b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies complying with the disclosure requirements.

H3-2c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies complying with the disclosure requirements.

3.1.4. Company's characteristics and value relevance: H4

This study purposes to indicate whether the value relevance of earnings, book value, and cash flows can be influenced by company's shareholders number, listing status and age. While the previous chapter reviewed the prior studies that examined the influence of these characteristics on the value relevance of earnings or/and book value, this section hypothesizes the influence of these characteristics on the value relevance of earnings, book value, and cash flows. Therefore, based on the study's fourth question and objective, the researcher stated his fourth main hypothesis as follows:

H4: The value relevance of earnings, book value, and cash flows is influenced by the company's characteristics.

The influence of company's shareholders number, listing status and age on the value relevance of earnings, book value, and cash flows is hypothesized as follows:

1. Shareholders number: H4-1

The impact of shareholders number on disclosure level and firm value has been examined in many studies. A significant positive influence has been concluded for the shareholders number on the disclosure level (Singhvi and Desai, 1971; Firth, 1979; Cooke, 1989a, 1991, 1992; Imhoff, 1992; Malone et al., 1993; Wallace and Naser, 1995; Heflin et al., 2001; Al Arussi et al., 2009). Firms' market value could be increased by increasing firms' shareholders number (Merton, 1987; Amihud et al., 1999).

A study on examining the influence of shareholders number on the value relevance of earnings, book value, and cash flows has not been found. Therefore, the current study tries to provide evidence about this area in literature. Relative to this factor, the fourth main hypothesis is divided into three sub-hypotheses in accordance with share price proxies as follows:

H4-1a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies with larger number of shareholders.

H4-1b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies with larger number of shareholders.

H4-1c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies with larger number of shareholders.

2. Listing status: H4-2

As mentioned in chapter two, listing on the main board increases the firm shareholders number, which positively and significantly affects the share price appreciation (Amihud et al., 1999). While some studies focused on the main board companies to examine the value relevance of earnings and book value (Aba Ibrahim et al., 2009), the second board has not been well researched. The current study tries to extend these studies by testing the value relevance of earnings, book value, and cash flows according to main and second boards to capture the influence of listing status on the value relevance of these accounting variables. Relative to this factor, the fourth main hypothesis is divided into three sub-hypotheses in accordance with share price proxies as follows:

H4-2a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies listed in the main board.

H4-2b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies listed in the main board.

H4-2c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies listed in the main board.

3. Company's age: H4-3

The influence of company's age on the value relevance of earnings and cash flows has been tested by Black (1998) and Aharony et al. (2006). They concluded different results for the impact of the company's age on the value relevance of these accounting variables. As mentioned before, the influence of company's age on the value relevance of earnings, book value, and cash flows simultaneously has not been researched before particularly in Jordan. While the current study examines the influence of company's age on the value relevance of these accounting variables and as old companies always improve their annual reports' quality to produce relevant information to market's participants and alleviate the asymmetric information, the fourth main hypothesis is divided into three sub-hypotheses in accordance with share price proxies as follows:

H4-3a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies that are older in age.

H4-3b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies that are older in age.

H4-3c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies that are older in age.

3.1.5. Type of industry and value relevance: H5

This study aims to indicate whether the value relevance of earnings, book value, and cash flows can be influenced by the type of industry. As mentioned before, in industrial sector, these accounting variables are value relevant (Harris et al., 1994; Misund et al., 2005; Vardavaki and Mylonakis, 2007; Hadi, 2006; Oyeriend, 2009;

Gee-Jung, 2009), and they are irrelevant (Collins et al., 1997; Francis and schipper, 1999). Also in services sector, these accounting variables are value relevant (Harris et al., 1994; Ely and Waymire, 1999; Dastgir and Velashani, 2008; Gee-Jung, 2009), and they are irrelevant or declined in the value relevance (Amir and Lev, 1996; Bao and Bao, 2001).

While these studies examined the value relevance of the accounting information according to type of industry, the impact of this factor on the value relevance has been involved in few studies (Abayadeera, 2010a, 2010b). Therefore, this study tries to extend the literature and provide evidence about the impact of this factor on the value relevance of earnings, book value, and cash flows. In Jordan, as services sector has larger number of companies and total shareholders' equity and since the total number of shares traded and value are greater for this sector in the recent years compared with those for industrial sector,²⁵ the current study hypothesizes its fifth main hypothesis as follows:

H5: The value relevance of earnings, book value, and cash flows is influenced by the type of industry.

Relative to this factor, the fifth main hypothesis is divided into three sub-hypotheses in accordance with share price proxies as follows:

²⁵ This information is extracted from companies FS published on ASE website.

H5a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater in services companies than in industrial companies.

H5b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater in services companies than in industrial companies.

H5c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater in services companies than in industrial companies.

3.1.6. Share price proxies and value relevance: H6

In order to give an empirical support to this study, the accounting information in FS was carried out to establish the correlation between share price and this information to indicate their value relevance. The price valuation models are used to regress share price on FS information in value relevance literature (Collin et al., 1997; Black, 1998; Francis and Schipper, 1999; Ely and Waymire, 1999; Bao, 2004).

The current study regresses earnings, book value, and cash flows on three proxies for share price (average annual share price, annual closing share price and ATM-share price) to find whether there is a gap between the results in Jordan. Since annual closing share price is expected to be the best in reflecting the value relevance of accounting information in consistence with prior studies (sections 1.2 and 2.7) and based on study's sixth question and objective, the researcher stated his sixth hypothesis as follows:

H6: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater than that relative to average annual share price and ATM-share price.

Finally, research objectives and question have been linked with research hypotheses in table 3.1.

Table 3.1*Research's Objectives, Questions, and Hypotheses*

Research objective:	Research question	Hypothesis
O1: To examine which variable among earnings, book value, and cash flows is the best predictor for the firm value.	Q1: Which accounting variable among earnings, book value, and cash flows is the best predictor for firm value?	<p>H1a: The value relevance of earnings relative to average annual share price is greater than that of book value and cash flows.</p> <p>H1b: The value relevance of earnings relative to average annual share price is greater than that of book value and cash flows.</p> <p>H1c: The value relevance of earnings relative to ATM-share price is greater than that of book value and cash flows.</p>
O2: To examine whether foreign ownership and trading volume can influence the value relevance of earnings, book value, and cash flows.	Q2: Can foreign ownership and trading volume influence the value relevance of earnings, book value, and cash flows?	<p>H2-1a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies with foreign ownership.</p> <p>H2-1b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies with foreign ownership.</p> <p>H2-1c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies with foreign ownership.</p> <p>H2-2a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies with larger trading volume.</p> <p>H2-2b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies with larger trading volume.</p> <p>H2-2c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies with larger trading volume.</p>
O3: To investigate whether financial disclosure time and financial disclosure level can influence the value relevance of earnings, book value, and cash flows.	Q3: Do the corporate governance variables (financial disclosure time and financial disclosure level) influence the value relevance of earnings, book value, and cash flows?	<p>H3-1a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies conforming to the financial disclosure time.</p> <p>H3-1b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies conforming to the financial disclosure time.</p> <p>H3-1c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies conforming to the financial disclosure time.</p> <p>H3-2a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies complying with the disclosure requirements.</p> <p>H3-2b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies complying with the disclosure requirements.</p> <p>H3-2c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies complying with the disclosure requirements.</p>

Table 3.1 (Cont.)*Research's Objectives, Questions, and Hypotheses*

Research objective:	Research question	Hypothesis
O4: To investigate whether company's specific characteristics can influence the value relevance of earnings, book value, and cash flows.	Q4: What are the specific characteristics of a company that influence the value relevance of earnings, book value, and cash flows?	H4-1a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies with larger number of shareholders.
		H4-1b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies with larger number of shareholders.
		H4-1c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies with larger number of shareholders.
		H4-2a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies listed in the main board.
		H4-2b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies listed in the main board.
		H4-2c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies listed in the main board.
		H4-3a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater for companies that are older in age.
		H4-3b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater for companies that are older in age.
		H4-3c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater for companies that are older in age.
O5: To examine whether type of industry can influence the value relevance of earnings, book value, and cash flows.	Q5: Does type of industry influence the value relevance of earnings, book value, and cash flows?	H5a: The value relevance of earnings, book value, and cash flows relative to average annual share price is greater in services companies than in industrial companies.
		H5b: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater in services companies than in industrial companies.
		H5c: The value relevance of earnings, book value, and cash flows relative to ATM-share price is greater in services companies than in industrial companies.
O6: To examine whether different proxies of share price can influence the value relevance of earnings, book value, and cash flows.	Q6: Do different proxies for share price influence the value relevance of earnings, book value, and cash flows?	H6: The value relevance of earnings, book value, and cash flows relative to annual closing share price is greater than that relative to average annual share price and ATM-share price.

3.2. Operational definitions

The essential purposes of operational definitions are to: (1) establish the rules and procedures that will be employed by the research investigator to measure the key variables of the study, and (2) present explicit definitions of terms that might be interpreted in ways that are inconsistent with the study. Therefore, research proposals require operational definitions of major variables and terms (Fisher and Foreit, 2002).

For the period from 2004 to 2009, the current study is guided by the following definitions of terms in the course of its implementation:

1. **Earnings (E)**: refer to earnings per share of a company at end of the financial year.
2. **Book value (BV)**: refers to book value of equity per share of a company at end of the financial year.
3. **Cash flows (CF)**: refer to cash flows from operating activities per share of a company at end of the financial year.
4. **Foreign ownership (FORN)**: refers to the foreign ownership of a company at end of the financial year.
5. **Trading volume (TRDV)**: refers to the total number of shares traded of a company at end of the financial year.
6. **Financial disclosure time (DTIM)**: refers to the announcement time limited by JSC for a company to submit its preliminary, semiannual, and annual financial reports.
7. **Financial disclosure level (DLVL)**: refers to the financial reports of a company complying with the disclosure requirements: (a) IASs requirements; (b) disclose material information; and (c) provide the JSC with all the disclosure items that should be included in the reports.

8. **Shareholders number (SHRHNO)**: refers to the total number of shareholders of a company at end of the financial year.
9. **Listing status (LSTUS)**: refers to the main and second boards companies.
10. **Company's age (AGE)**: refers to the number of company's life years.
11. **Type of industry (TYIND)**: refers to services and industrial companies.
12. **Company's size (SIZE)**: refers to the log of total assets of a company at end of the financial year.
13. **Leverage (LEVRG)**: refers to the ratio of debt to total assets of a company at end of the financial year.
14. **Average annual share price (AP)**: refers to annual rates of share price of a company for the financial year (as in yearly bulletin database).²⁶
15. **Annual closing share price (CP)**: refers to share price of a company at end of the financial year.
16. **ATM-share price (ATMP)**: refers to share price of a company after a three-month period following the financial year-end.

Please refer to Appendix 5 to full explanations of the above variables.

3.3. Research strategy

Numerous studies have pointed out that each research strategy has its own advantages. No single strategy is the most appropriate for all research purposes (Benbasat et al., 1987). When selecting a research strategy, the researcher's considerations should include the nature of the research topic, the existing knowledge

²⁶ Annual rates of share price are calculated by its annual value traded / No. of shares traded annually (ASE visited on Dec. 6, 2009 at: <http://www.ase.com.jo/>).

about that topic and the goals of the researcher, among other factors (Benbasat, 1984; Benbasat et al., 1987).

In social sciences, research strategies can be classified as: experiments, surveys, archival analyses, histories, and case studies. Depending on the study's type, each strategy can be either better or worse (Yin, 2003). Dealing with historical data of ASE companies is the strategy of the current study.

3.4. Research design

This section includes research design approach and steps.

3.4.1. Research design approach

Research can be divided into qualitative and quantitative depending on the nature of data collected (Saunders et al., 2000). Yin (1994) states that qualitative methods usually relate to case studies that aim to receive complete information and have a deep understanding of the research problem. On the other hand, quantitative research includes numerical data or consists of data that can be quantified (Saunders et al., 2000).

Quantitative data must be based on meanings derived from numbers, including numerical and standardized data and dealing with the conducted analysis by using diagrams and statistics (Saunders et al., 2000). The current study was conducted with a quantitative research design to examine the value relevance of earnings, book value, and cash flows with the influence of four groups of institutional factors (economic, governance, company's characteristics and industry type) after controlling company's

size and leverage. In most quantitative research, two statistics have to be known, descriptive, and inferential statistics (Cavana et al., 2001).

Sekaran (2000) points out that a study can be categorized as exploratory, descriptive, and inferential statistics. Therefore, the current study briefly defines each one to differentiate them and specify which one is suitable to be used in this study. Saunders et al. (2000) explain the exploratory research as the valuable means of what is happening, seeking new notions, assessing phenomena, and asking questions. In addition, the objective of an exploratory research is to collect information as much as possible about a limited subject (Yin, 2003).

Salkind (2000) refers to a descriptive study as one which describes a phenomenon regardless of what causes the phenomenon. Furthermore, it is often used for a well structured problem where there is no need to examine the cause-effect relationship. Inferential statistics is statistics that helps in establishing the relationships among variables from which conclusions can be drawn (Cavana et al., 2001). The whole idea of inferential research, which is representing the entire population by using a sample, depends on that population being accurately described (Sekaran 2000; Cavana et al., 2001).

Inferential statistics can be classified as: a parametric technique that is used to test hypotheses by assuming a normal distribution for the population from which the sample is drawn, or non-parametric technique that is used to test hypotheses in which a normal distribution cannot be assumed for the population from which the sample is drawn. This study is categorized as a parametric inferential quantitative one;

therefore, normality for the study's variables data has been tested by measuring their skewness and kurtosis ratios. The lack of normality (if it exists) will be solved by transformation processes (Tabachnick and Fidell, 1996; Pallant, 2007).

3.4.2. Research design steps

Jordanian financial capital market (ASE) is a merged market. It tries to provide information in a high transparency. Since this study is related to Jordanian companies, and in order to test its hypotheses, answer its questions and achieve its objectives, many steps have been followed to select sample and gather and analyze the data. These steps (as illustrated in Figure 3.1) are:

1. Gathering data about the study's dependent, independent, and control variables from ASE database and the annual financial reports of companies listed in ASE.
2. Selecting the study's sample according to certain criteria (section 3.6.1).
3. Describing the nature of the collected data and the data gathering method for sample selection which is important to specify the analysis techniques.
4. Some data analyses techniques are adopted in this research. The collected data has been analyzed in many steps which are test of data and variables quality, descriptive analysis and multiple regression analysis by using Statistical Package for the Social Science (SPSS) version 16.0.
5. Finally, after data analysis, findings' reporting is the next step (chapter) in this research.

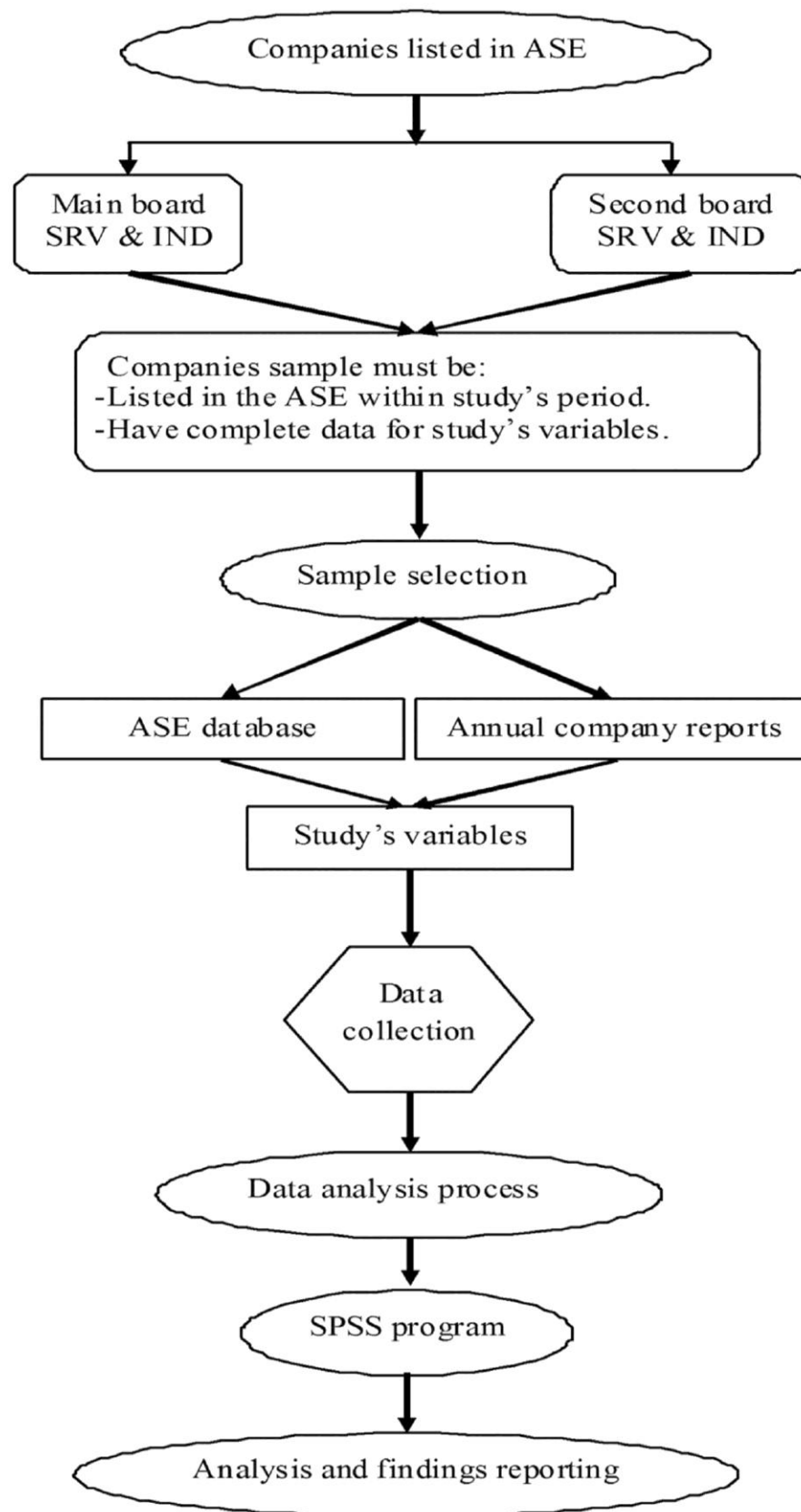


Figure 3.1
Research Design Steps

3.5. Measurement of variables

Measurement is defined as the assignment of numerals to objects or events according to rules or standards (Stevens, 1946). In a research that includes many variables, the researcher would like to know how these variables are related to each other (Cavana et al., 2001). Theoretically, the measurement of the study's variables is extracted from the previous studies.

While the main purpose of this research is to examine the value relevance of earnings, book value, and cash flows with the influence of four groups of institutional factors, correlation analysis is conducted to test the relationship among variables and to test the hypotheses (Zikmund, 2003).

The relationship between causality and correlation is often misinterpreted because there is a false belief that when two variables are highly correlated, one of the variables is automatically the cause of the other (Krishnaswamy et al., 2008). In general, the causality has not been demonstrated in the regression and correlation analyses (Moore and Buzby, 1972).

Normally, correlation analysis is the analysis on the linear relationship between two or more variables regardless of the effect of one variable on another (Salkind, 2000). The correlations and regressions can play an invaluable role in suggesting mechanisms for further investigation (Levin, 1993).

Practically, data about the eleven independent variables, two control variables, and the three dependent variables of this study have been extracted from the annual

companies' FS and ASE database, and multiple regressions model was used in this study to examine the relationships among these variables. Therefore, it is important to know the nature of the variables measurement that was used in the data analyses. The following subsections discuss the measurement of the DVs, IVs, and control variables.

3.5.1. Independent variables (IVs)

There are eleven IVs used in this study categorized under five groups as shown in the conceptual framework, namely accounting variables (earnings, book value, and cash flows), economic factors (foreign ownership, trading volume), corporate governance (financial disclosure time, financial disclosure level), company's characteristics (shareholders number, listing status, company's age), and type of industry. For the purposes of this study, these variables have been measured as mentioned in section 3.2 and Appendix 5. The same study's variables measurements have been used in prior studies (please refer to Appendix 6). The current study linked these eleven IVs to three share price proxies after controlling company's size and leverage.

3.5.2. Dependent variables (DVs)

This study uses share price in three different proxies as its DVs to examine the value relevance of earnings, book value and, cash flows and to conduct whether the value relevance will be changed relative to share price measurement. These share price proxies have been examined in prior studies as mentioned before (section 2.7). Please refer to Appendix 6. Different measurements for share price are employed in prior studies as demonstrated in Table 3.2. In Jordan, information about share price proxies for ASE listed companies within the research's period is provided by yearly bulletin

information that was published on ASE website. For the purpose of the current study, share price has been measured in three different proxies, namely average annual share price, annual closing price, and ATM-share price as they are defined in section 3.2 and in Appendix 5.

Table 3.2
Different Measurements for Share Prices in Prior Studies

	Different dates for share price	Previous studies
1	Annual closing share price	(Beaver et al., 1980; Black, 1998; Powell et al., 2001; Bao & Bao, 2001; Bao & Bao, 2004; Bao, 2004; Khaleel, 2005; Anandarajan et al., 2006; Chen & Zhang, 2007; Dastgir & Velashani, 2008)
2	Share price at the beginning of a year	(Kothari & Zimmerman, 1995; Huson et al., 2001; Pan, 2007)
3	Monthly share price	(Ball & Brown, 1968)
4	Share price on the 1 st , 5 th , and 9 th months of a year	(Bartram, 2007)
5	Share price before 60, 1, at the day, after 2, 30 days of Es' announcement	(Kaber & Roosenboom, 2003)
6	Share price at the end of the 2 nd month following quarter	(Amir and Lev, 1996)
7	Share price after a three-month period following the financial year-end	(Whelan, 2004; Hellstron, 2005; Vardavaki & Mylonakis, 2007; Habib and Weil, 2008; Kanagaretnam et al., 2009)
8	Share price at the day before, at the day and the day after the earnings announcement	(Zaurob & Sharab, 2007)
9	Closing share price in the previous year, change in share price in the previous year and change in share price in the current year	(Suwardi, 2009)
10	Average annual share price	(Grabowski and Mueller, 1975; Oyerinde, 2009)

3.5.3. Control variables

The current study controls two variables, namely company's size and leverage. The study's models have been tested with/without control variables and compare the

coefficients significance and models' adjusted R^2 to indicate whether including these variables in the study's models affects the results. As mentioned before, these variables have been used in prior studies in different measurements. The measurements of these control variables as follows.

1. Company's size

Company's size is significantly associated with earnings announcement (Bamber, 1986), foreign ownership (Kang and Stulz, 1997; Covrig et al., 2006), disclosure level (Cooke, 1992; Hassan, 2004), disclosure time (Dyer and McHugh, 1975), type of industry (Dhawan, 2001), share price (Huberman and Kandel, 1987), and value relevance of earnings (Anandarajan and Hasan, 2010).

As mentioned in the second chapter, different measures for company's size have been used, such as market capitalization, sales, turnover, capital employed, number of shareholders, number of employees, company's average market value, total assets, and log of assets (Singhvi and Desai, 1971; Firth, 1979; Harris and Gurel, 1986; Shleifer, 1986; Cooke, 1989a, 1991; Malone, 1993; Vijh, 1994; Beneish and Whaley, 1996; Lynch and Mendenhall, 1997; Tkac, 1999; Craven and Marston, 1999; lang and Lundholm, 2000; Hassan, 2004; Lin et al., 2007; Firth et al., 2008; Kim and Yoo, 2009; Roll et al., 2009; Dahawy, 2009; Anandarjan and Hasan, 2010; Choi et al., 2011).

The study measures this variable by log of total assets as measured in many studies (Hassan, 2004; Lin et al., 2007; Anandarajan and Hasan, 2010). Please refer to Appendixes 5 and 6. Log of total assets is chosen by this study as a company's size

because the amount of total assets under a company direct control may better indicate a company's financial prowess in comparison with other measures (Lo, 2009).

2. Leverage

When a company is financed via debt, it will be considered as a highly leveraged one if the debt to asset ratio has increased. This will imply more operation risk for the company. Prior research has established that leverage can influence the firm value (Lo, 2009). Different measurements for leverage have been used in prior studies such as debt-to-equity ratio (Hassan, 2004) and debt to total assets especially in value relevance studies (Lo, 2009; Anandarajan and hasan, 2010; Choi et al., 2011).

Debt to total asset ratio is selected as a proxy for a company's resourcefulness because this ratio is positively and significantly associated with disclosed information (Ahmed and Courtis, 1999). Following the above studies, the current study measures the leverage by debt to total asset ratio.

3.6. Data collection

Data was collected as illustrated below.

3.6.1. Sampling

According to Cavana et al. (2001), there are two types of sampling design: (1) Probability (in which the population elements have an equal chance of being selected) and (2) Non-probability (in which the population elements do not have a known chance of being selected). The first type includes simple random, systematic, cluster, area, double, and stratified random sampling. Stratified random sampling is used

when the population is divided into meaningful segments. Stratified random sampling can be divided into proportionate (in which subjects are drawn in proportion to their original numbers) and disproportionate (in which subjects are drawn based on criteria other than their original population numbers). The disproportionate sampling is an efficient sampling design because it can provide more information within a specified sample size (Al Arussi et al., 2009). For the purpose of this study, disproportionate stratified random sampling is chosen as the sampling technique.

Actually, the targeted sample is all Jordanian companies listed on ASE. The study's population's frequency and percentage according to ASE sectors are summarized in Table 3.3. The total number of the population ranged from 192 to 272 from 2004 to 2009 (research period).

Table 3.3

Research Populations' Frequency and Percentage According to Amman Stock Exchange Sectors

Yrs.	Total number in ASE 1	SRV		IND		SRV & IND	
		No.	%	No.	%	No.	%
		2	3	4	5	6	7
		= 2/1		= 4/1		= 2+4	
2004	192	66	34	84	44	150	78
2005	201	73	36	87	43	160	79
2006	227	95	42	88	39	183	81
2007	245	110	45	90	37	200	82
2008	262	121	46	96	37	217	83
2009	272	129	47	95	35	224	82

Resources: Annual Reports of Amman Stock Exchange and Jordan Securities Commission for 2004 to 2009.

SRV: Services Companies.

IND: Industrial Companies.

Since the current study is related to FS and ASE data, the sample selection is based on certain criteria:

1. The selected Jordanian companies must be listed in ASE within the research period (ignoring companies registered after 2004).
2. Ignoring companies having incomplete information about their share prices in ASE database within research period.
3. Ignoring companies having no FS or other information (related to study's institutional factors and control variables) documented in ASE database within research period.

By reviewing annual FS and ASE database of Jordanian companies listed in ASE for the period from 2004 to 2009, and to examine the relationships between the study's three DVs and eleven IVs concerning two control variables, historical results of the selected companies have been chosen as research data. The study's sample period starts from year 2004, in which all companies' sample has complete data about the study's variables, and ends in year 2009 as it includes the latest data that is available on ASE databases.

3.6.2. Data description

Using different approaches with frequency and descriptive variables is so useful in presenting information that could describe the study's sample (Pallant, 2007). Categorically, depending on Cavana et al. study (2001), the size of the study's sample within 2004-2009 is 91 companies per year with 1456 observations per year (91 companies * 16 variables) and 8736 observations (1456 observations * 6 years). The study's sample includes 39 companies in the services sector and 52 companies in the industrial sector (the study's selected Jordanian companies are listed in Appendix 7).

For the study's sample, 55 and 36 companies are listed in ASE main board and second board respectively as it is shown in Table 3.4.

Table 3.4

Research Companies' Sample Frequency According to Amman Stock Exchange Sectors and Boards

<div style="display: inline-block; width: 150px; height: 1.2em; border-bottom: 1px solid black; position: relative;"> Board </div>	Main	Second	Total sample size
SRV	25	14	39
IND	30	22	52
Total sample size	55	36	91

Resources: Annual Reports of Amman Stock Exchange and Jordan Securities Commission (2009).

3.6.3. Data collection procedure

The study's data is secondary in nature and collected from ASE website and the companies' annual reports for the financial years from 2004 to 2009. Data about earnings per share, book value of equity per share, and financial leverage was collected from financial ratios that are attached with Jordanian companies' FS on ASE website. From statement of cash flows, data about cash flows from operating activities per share was collected. Company's size (log of total assets) data has been extracted from statements of financial position. Data about other variables (foreign ownership, trading volume, financial disclosure time and financial disclosure level, listing status, company's age, and type of industry) has been collected from database that is published on ASE by Amman Stock Exchange Information Center (ASEIC).

3.7. Technique of data analysis

The objectives of this study are to present the value relevance of earnings, book value, and cash flows relative to three share price proxies with the influence of four groups

of institutional factors after controlling two variables. Many analysis techniques based on the correlation between study's IVs and DVs are used to detect and describe the relationships between them.

The data analysis techniques that are adopted in this research are described in this section. In order to answer the study's questions, the collected data was analyzed in steps by using SPSS version 16.0. The steps of analysis techniques based on Pallant (2007) are summarized in the following subsections.

3.7.1. Test of data and variables quality

There is a need to strengthen the process of the analyses that are used in the next chapters. Therefore, the first step is the quality tests for the data and variables which includes (Canvana et al., 2001; Pallant, 2007):

1. Normality test: scores of each variable should be normally distributed. This can be checked by calculating the skewness and kurtosis values, checking for outliers, and extreme points or by inspecting the histograms of each variable. Normality exists when skewness and kurtosis values are within ± 2 at 0.05 significance values.²⁷
2. Linearity test: the relationship between two variables should be linear. It means that it must be a straight line when looking at scatter plot of scores;
3. Homoscedasticity: the variability in scores for the variable X should be similar at all values of variable Y;

²⁷ The positive skewness values indicate positive skew in which scores clustered at the low values of the study's sample. The positive kurtosis values indicate that the distribution is peaked and clustered in the center with long thin tails which results in an underestimate of the variance of the study's variables. Negative skewness values indicate clustering of scores at the high values. Negative kurtosis values indicate a relatively flat distribution of the scores which means that most of the cases are in the extreme. Skewness and kurtosis values of 0 mean there is a perfectly normal distribution (Pallant, 2007).

4. Correlation analysis: it is used to measure the relation sign and strength between the variables, and;
5. Multicollinearity: is a situation whether two or more IVs are highly correlated.

3.7.2. Descriptive analysis

Continuously, the second step is providing information in a descriptive statistics (such as mean, standard deviation, minimum, maximum, skewness, kurtosis and so on). This information is important to check the assumptions of the used analysis technique. Descriptive analysis presents cross-section of classification and measurement of the main direction which describe the collected data (Canvana et al., 2001; Pallant, 2007).

3.7.3. Multiple regression analysis

The third analysis is multiple regressions. The multiple regressions test is used to examine the relationships between the study's DVs and IVs. Multiple regressions are a statistical technique that estimates values of one variable (DV) regarding two or more variables (IVs) as its basis. In other words, it is right to say that at a significant level, a proportion of the variance in a DV can be explained by a set of IVs (Cavana et al., 2001; Pallant, 2007).

Many types of multiple regression analyses can be used depending on the study's question nature. The main types are: standard (simultaneous), sequential (hierarchical), and stepwise. The first is used to examine the simultaneous effect of several IVs on a DV. The second is used to show which predictor (among a set of predictors) is the important one in explaining the variance in a DV. Finally, the third

aims to show whether a set of IVs would significantly add to the variance explained in the DV (Cavana et al., 2001, Pallant, 2007).

For the current study, three DVs and eleven IVs with two control variables under six main hypotheses are tested using standard multiple regressions. In this model, the study interacts the selected institutional factors on earnings, book value, and cash flows to capture the incremental effects of these factors on the value relevance of the accounting variables. This analysis can be easily conducted on SPSS using the regression procedure (Aguinis, 1995). For the all hypotheses, the findings of the regression analysis are presented with and without control variables to indicate their impact on the results when they are included in the regression model.

Deng and Lev (1998) argued that the price regression is popularly used in the accounting literature. Many studies used regression model to test the relationship between share price as a DV and accounting information as IVs (Edwards and Bell, 1961; Ohlson, 1995; Hassan, 2004; Whelan, 2004; Hellstron, 2005; Oyerinde, 2009; Lo, 2009; Anandarajan and Hasan, 2010).

The main equations that test the study's hypotheses have been divided into three sub-equations relative to three share price proxies (average annual share price, annual closing share price, and ATM-share price). These equations are presented as follows.

1. Equations of H1

This study uses the valuation framework developed by Ohlson (1995) to examine the value relevance of earnings and book value of equity in addition to cash flows. An

empirical adaptation of Ohlson's theoretical model has been used extensively in the value relevance literature (Burgstahler and Dichev 1997; Collins et al., 1997; Barth et al., 1998; Collins et al., 1999; Easton, 1999; Easton and Sommers, 2000). Khanagha et al. (2011) have adopted a valuation price model including earnings, book value, and cash flows. The current study adopted this model. Therefore, the first hypothesis is modeled as:

$$P = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + e \quad (3-1)$$

Where

P: share price proxy (average annual share price (AP), annual closing share price (CP) or share price after a three-month period following the financial year-end (ATMP)) for a company in a year.

E: earnings per share for a company at end of a year.

BV: book value of equity per share for a company at end of a year.

CF: cash flows from operation per share for a company at end of a year.

e : error term.

Equation 3-1 is divided into six sub-equations according to the three share price proxies with and without control variables:

$$AP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + e \quad (3-1a)$$

$$AP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + \beta_4 SIZE + \beta_5 LEVRG + e \quad (3-1b)$$

$$CP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + e \quad (3-1c)$$

$$CP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + \beta_4 SIZE + \beta_5 LEVRG + e \quad (3-1d)$$

$$ATMP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + e \quad (3-1e)$$

$$ATMP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + \beta_4 SIZE + \beta_5 LEVRG + e \quad (3-1f)$$

where

SIZE : log of total assets.

LEVRG: ratio of debt to total assets.

Other variables are defined before.

Coefficients β_1 , β_2 and β_3 represent the value relevance of earnings, book value, and cash flows respectively. H1 can be stated in terms of the regression coefficients from Equation (3-1) as follows:

$$H1: \beta_1 > \beta_2$$

$$\beta_1 > \beta_3$$

To assess the extent to which institutional factors moderate the value relevance of the accounting information, the general price model is adopted. This study employs a methodology similar to that in previous studies (Davis-Friday et al., 2006; Whelan, 2004; Dontoh et al., 2004; Liu and Liu, 2007) that examined the influence of various institutional factors on the value relevance of earnings and book value.

As the value relevance of earnings, book value, and cash flows could be influenced by the institutional factors, the coefficients on these accounting variables are functions of these factors as indicated by the dummy variables. An intercept dummy is also included in the model to assess the value relevance of the institutional factors in their own right. To test the influence of the institutional factors on the value relevance of accounting variables, the interaction term (accounting variable * institutional factor) is included in Eq. (3-1). Therefore, with

$$\beta_0 = a_0 + a_1 \text{ IF}$$

$$\beta_1 = a_2 + a_3 \text{ IF},$$

$$\beta_2 = a_4 + a_5 \text{ IF}$$

$$\beta_3 = a_6 + a_7 \text{ IF}$$

where IF: institutional factors adopted by the current study (foreign ownership, trading volume, financial disclosure time, financial disclosure level, shareholders number, listing status, company's age and type of industry).

By substitution, the estimated regression equation is:

$$P = (a_0 + a_1 \text{ IF}) + (a_2 + a_3 \text{ IF}) E + (a_4 + a_5 \text{ IF}) BV + (a_6 + a_7 \text{ IF}) CF + e \quad (3-1g)$$

$$P = a_0 + a_1 \text{ IF} + a_2 E + a_3 E*IF + a_4 BV + a_5 BV*IF + a_6 CF + a_7 CF*IF + e \quad (3-1h)$$

where a_1 to a_7 : unstandardized coefficients of the estimated regression equation.

To compare the different variables, the standardized coefficients (not unstandardized ones) should be used as these coefficients means that the values of the different variables were converted into the same scale (Pallant, 2007). Thus, the general model is:

$$P = \alpha_0 + \alpha_1 \text{ IF} + \alpha_2 E + \alpha_3 E*IF + \alpha_4 BV + \alpha_5 BV*IF + \alpha_6 CF + \alpha_7 CF*IF + e \quad (3-1i)$$

where:

Coefficients α_2 , α_4 and α_6 represent the value relevance of earnings, book value, and cash flows respectively in the absence of the impact of IF. Coefficients $\alpha_2 + \alpha_3$, $\alpha_4 + \alpha_5$ and $\alpha_6 + \alpha_7$ represent the share price response to earnings, book value, and cash flows respectively when they are influenced by IF.

This model has been adopted by Whelan (2004), Lui and Lui (2007) and Habib and Weil (2008). In the previous equation, earnings, book value, and cash flows are interacted with the selected institutional factors to capture the influence of these factors on the value relevance of accounting information. According to Hartmann and

Moers (1999), this model is assumed to be the suitable one by including the interaction term of a specific variable (each institutional factor in the current study) on the relationship between the dependent (share price) and independent variables (accounting information). The interaction effect of various institutional factors with the accounting information has been tested by many valuation studies using similar models (Davis-Friday et al., 2006; Hassan, 2004; Whelan, 2004; Dontoh et al., 2004; Francis et al., 2005; Liu and Liu, 2007; Habib and Weil, 2008; Anandarajan and Hasan, 2010).

2. Equations of H2-1

To examine the impact of the foreign ownership on the value relevance of earnings, book value, and cash flows, the study's sample is categorized based on whether companies have foreign ownership (please refer to Appendix 5). Following Anandarajan and Hasan (2010) who have interacted foreign ownership with earnings to capture its influence on the value relevance of earnings, the study interacts this factor with earnings, book value, and cash flows according to share price proxies. H2-1 Equations with and without control variables are:

$$AP = \omega_0 + \omega_1 \text{ FORN} + \omega_2 E + \omega_3 E * \text{FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV} * \text{FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF} * \text{FORN} + e \quad (3-2-1a)$$

$$AP = \omega_0 + \omega_1 \text{ FORN} + \omega_2 E + \omega_3 E * \text{FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV} * \text{FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF} * \text{FORN} + \omega_8 \text{ SIZE} + \omega_9 \text{ LEVRG} + e \quad (3-2-1b)$$

$$CP = \omega_0 + \omega_1 \text{ FORN} + \omega_2 E + \omega_3 E * \text{FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV} * \text{FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF} * \text{FORN} + e \quad (3-2-1c)$$

$$CP = \omega_0 + \omega_1 \text{ FORN} + \omega_2 E + \omega_3 E*\text{FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV}*\text{FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF}*\text{FORN} + \omega_8 \text{ SIZE} + \omega_9 \text{ LEVRG} + e \quad (3-2-1d)$$

$$\text{ATMP} = \omega_0 + \omega_1 \text{ FORN} + \omega_2 E + \omega_3 E*\text{FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV}*\text{FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF}*\text{FORN} + e \quad (3-2-1e)$$

$$\text{ATMP} = \omega_0 + \omega_1 \text{ FORN} + \omega_2 E + \omega_3 E*\text{FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV}*\text{FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF}*\text{FORN} + \omega_8 \text{ SIZE} + \omega_9 \text{ LEVRG} + e \quad (3-2-1f)$$

where

FORN: dummy variable with value 1 for companies having foreign ownership at the end of financial year, 0 otherwise.

Other variables are defined before.

Coefficients ω_2 , ω_4 and ω_6 represent the value relevance of earnings, book value, and cash flows respectively in the absence of the impact of foreign ownership. Coefficients $\omega_2 + \omega_3$, $\omega_4 + \omega_5$ and $\omega_6 + \omega_7$ represent the share price response to earnings, book value, and cash flows respectively when they are influenced by foreign ownership. H2-1 can be stated in terms of the regression coefficients as follows:

$$\begin{aligned} \text{H2-1: } & \omega_3 > 0 \\ & \omega_5 > 0 \\ & \omega_7 > 0 \end{aligned}$$

3. Equations of H2-2

To examine the impact of the trading volume on the value relevance of earnings, book value, and cash flows, the study's sample is categorized based on whether companies have trading volume greater than the median trading volume of the study's sample (please refer to Appendix 5). Median trading volume is represented by the median total number of shares traded that are held by companies' investors. Following Chen

et al. (2001) who interacted trading volume with earnings and book value to capture its influence on the value relevance of these accounting variables, the study interacts this factor with earnings, book value, and cash flows according to share price proxies.

H2-2 Equations with and without control variables are:

$$AP = \theta_0 + \theta_1 \text{TRDV} + \theta_2 E + \theta_3 E * \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV} * \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF} * \text{TRDV} + e \quad (3-2-2a)$$

$$AP = \theta_0 + \theta_1 \text{TRDV} + \theta_2 E + \theta_3 E * \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV} * \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF} * \text{TRDV} + \theta_8 \text{SIZE} + \theta_9 \text{LEVRG} + e \quad (3-2-2b)$$

$$CP = \theta_0 + \theta_1 \text{TRDV} + \theta_2 E + \theta_3 E * \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV} * \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF} * \text{TRDV} + e \quad (3-2-2c)$$

$$CP = \theta_0 + \theta_1 \text{TRDV} + \theta_2 E + \theta_3 E * \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV} * \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF} * \text{TRDV} + \theta_8 \text{SIZE} + \theta_9 \text{LEVRG} + e \quad (3-2-2d)$$

$$\text{ATMP} = \theta_0 + \theta_1 \text{TRDV} + \theta_2 E + \theta_3 E * \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV} * \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF} * \text{TRDV} + e \quad (3-2-2e)$$

$$\text{ATMP} = \theta_0 + \theta_1 \text{TRDV} + \theta_2 E + \theta_3 E * \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV} * \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF} * \text{TRDV} + \theta_8 \text{SIZE} + \theta_9 \text{LEVRG} + e \quad (3-2-2f)$$

where:

TRDV: dummy variable with value 1 for companies with trading volume greater than median shares traded, 0 otherwise.

Other variables are defined before.

Coefficients θ_2 , θ_4 and θ_6 represent the value relevance of earnings, book value, and cash flows respectively in the absence of the impact of trading volume. Coefficients $\theta_2 + \theta_3$, $\theta_4 + \theta_5$ and $\theta_6 + \theta_7$ represent the share price response to earnings, book value, and cash flows respectively when they are influenced by trading volume. H2-2 can be stated in terms of the regression coefficients as follows:

$$\begin{aligned} \text{H2-2: } \theta_3 &> 0 \\ \theta_5 &> 0 \\ \theta_7 &> 0 \end{aligned}$$

4. Equations of H3-1

To examine the impact of the financial disclosure time on the value relevance of earnings, book value, and cash flows, the study's sample is categorized based on whether companies conform to the announcement time limited by JSC to submit their preliminary, semiannual, and annual financial reports (please refer to Appendix 5). To capture the influence of financial disclosure time on the value relevance of the accounting information, the study interacts financial disclosure time with earnings, book value, and cash flows according to share price proxies. H3-1 Equations with and without control variables are:

$$\text{AP} = \varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + e \quad (3-3-1a)$$

$$\text{AP} = \varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + \varphi_8 \text{SIZE} + \varphi_9 \text{LEVRG} + e \quad (3-3-1b)$$

$$\text{CP} = \varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + e \quad (3-3-1c)$$

$$\text{CP} = \varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + \varphi_8 \text{SIZE} + \varphi_9 \text{LEVRG} + e \quad (3-3-1d)$$

$$\text{ATMP} = \varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + e \quad (3-3-1e)$$

$$\text{ATMP} = \varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + \varphi_8 \text{SIZE} + \varphi_9 \text{LEVRG} + e \quad (3-3-1f)$$

where

DTIM: dummy variable with value 1 for companies that submit their preliminary, semiannual, and annual financial reports within the announcement time limited by JSC, 0 otherwise.

Other variables are defined before.

Coefficients φ_2 , φ_4 and φ_6 represent the value relevance of earnings, book value, and cash flows respectively in the absence of the impact of the financial disclosure time.

Coefficients $\varphi_2 + \varphi_3$, $\varphi_4 + \varphi_5$ and $\varphi_6 + \varphi_7$ represent the share price response to earnings, book value, and cash flows respectively when they are influenced by financial disclosure time. H3-1 can be stated in terms of the regression coefficients as follows:

$$\begin{aligned} \text{H3-1: } & \varphi_3 > 0 \\ & \varphi_5 > 0 \\ & \varphi_7 > 0 \end{aligned}$$

5. Equations of H3-2

To examine the impact of the financial disclosure level on the value relevance of earnings, book value, and cash flows, the study's sample is categorized based on whether companies comply with information required by the disclosure construction (please refer to Appendix 5). To capture the influence of financial disclosure level on the value relevance of the accounting information, the study interacts financial disclosure level with earnings, book value, and cash flows according to share price proxies. H3-2 Equations with and without control variables are:

$$AP = \gamma_0 + \gamma_1 DLVL + \gamma_2 E + \gamma_3 E*DLVL + \gamma_4 BV + \gamma_5 BV*DLVL + \gamma_6 CF + \gamma_7 CF*DLVL + e \quad (3-3-2a)$$

$$AP = \gamma_0 + \gamma_1 DLVL + \gamma_2 E + \gamma_3 E*DLVL + \gamma_4 BV + \gamma_5 BV*DLVL + \gamma_6 CF + \gamma_7 CF*DLVL + \gamma_8 SIZE + \gamma_9 LEVRG + e \quad (3-3-2b)$$

$$CP = \gamma_0 + \gamma_1 DLVL + \gamma_2 E + \gamma_3 E*DLVL + \gamma_4 BV + \gamma_5 BV*DLVL + \gamma_6 CF + \gamma_7 CF*DLVL + e \quad (3-3-2c)$$

$$CP = \gamma_0 + \gamma_1 DLVL + \gamma_2 E + \gamma_3 E*DLVL + \gamma_4 BV + \gamma_5 BV*DLVL + \gamma_6 CF + \gamma_7 CF*DLVL + \gamma_8 SIZE + \gamma_9 LEVRG + e \quad (3-3-2d)$$

$$ATMP = \gamma_0 + \gamma_1 DLVL + \gamma_2 E + \gamma_3 E*DLVL + \gamma_4 BV + \gamma_5 BV*DLVL + \gamma_6 CF + \gamma_7 CF*DLVL + e \quad (3-3-2e)$$

$$ATMP = \gamma_0 + \gamma_1 DLVL + \gamma_2 E + \gamma_3 E*DLVL + \gamma_4 BV + \gamma_5 BV*DLVL + \gamma_6 CF + \gamma_7 CF*DLVL + \gamma_8 SIZE + \gamma_9 LEVRG + e \quad (3-3-2f)$$

where:

DLVL: dummy variable with value 1 for companies that prepare their financial reports according to information required by the disclosure construction, 0 otherwise.

Other variables are defined before.

Coefficients γ_2 , γ_4 and γ_6 represent the value relevance of earnings, book value, and cash flows respectively in the absence of the impact of financial disclosure level.

Coefficients $\gamma_2 + \gamma_3$, $\gamma_4 + \gamma_5$ and $\gamma_6 + \gamma_7$ represent the share price response to earnings, book value, and cash flows respectively when they are influenced by financial disclosure level. H3-2 can be stated in terms of the regression coefficients as follows:

$$\begin{aligned} \text{H3-2: } & \gamma_3 > 0 \\ & \gamma_5 > 0 \\ & \gamma_7 > 0 \end{aligned}$$

6. Equations of H4-1

To examine the impact of the shareholders number on the value relevance of earnings, book value, and cash flows, the study's sample is categorized based on whether companies have shareholders number greater than the median shareholders number of the study's sample. Median shareholders number is represented by the median number of shareholders in the sample (please refer to Appendix 5). To capture the influence of shareholders number on the value relevance of the accounting information, the study interacts shareholders number with earnings, book value, and cash flows according to share price proxies. H4-1 Equations with and without control variables are:

$$AP = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7 CF * \text{SHRHNO} + e \quad (3-4-1a)$$

$$AP = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7 CF * \text{SHRHNO} + \delta_8 \text{SIZE} + \delta_9 \text{LEVRG} + e \quad (3-4-1b)$$

$$CP = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7 CF * \text{SHRHNO} + e \quad (3-4-1c)$$

$$CP = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7 CF * \text{SHRHNO} + \delta_8 \text{SIZE} + \delta_9 \text{LEVRG} + e \quad (3-4-1d)$$

$$\text{ATMP} = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7 CF * \text{SHRHNO} + e \quad (3-4-1e)$$

$$\text{ATMP} = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7 CF * \text{SHRHNO} + \delta_8 \text{SIZE} + \delta_9 \text{LEVRG} + e \quad (3-4-1f)$$

where:

SHRHNO: dummy variable with value 1 for companies with shareholders number greater than median shareholders number, 0 otherwise.

Other variables are defined before.

Coefficients δ_2 , δ_4 and δ_6 represent the value relevance of earnings, book value, and cash flows respectively in the absence of the impact of shareholders number. Coefficients $\delta_2 + \delta_3$, $\delta_4 + \delta_5$ and $\delta_6 + \delta_7$ represent the share price response to earnings, book value, and cash flows respectively when they are influenced by shareholders number. H4-1 can be stated in terms of the regression coefficients as follows:

$$\begin{aligned} \text{H4-1: } & \delta_3 > 0 \\ & \delta_5 > 0 \\ & \delta_7 > 0 \end{aligned}$$

7. Equations of H4-2

To examine the impact of the listing status on the value relevance of earnings, book value, and cash flows, the study's sample is categorized based on whether companies are listed in main or second board (please refer to Appendix 5). To capture the influence of listing status on the value relevance of the accounting information, the study interacts listing status with earnings, book value, and cash flows according to share price proxies. H4-2 Equations with and without control variables are:

$$\begin{aligned} AP = & \Phi_0 + \Phi_1 \text{ LSTUS} + \Phi_2 E + \Phi_3 E * \text{LSTUS} + \Phi_4 BV + \Phi_5 BV * \text{LSTUS} + \Phi_6 CF + \Phi_7 \\ & CF * \text{LSTUS} + e \end{aligned} \quad (3-4-2a)$$

$$\begin{aligned} AP = & \Phi_0 + \Phi_1 \text{ LSTUS} + \Phi_2 E + \Phi_3 E * \text{LSTUS} + \Phi_4 BV + \Phi_5 BV * \text{LSTUS} + \Phi_6 CF + \Phi_7 \\ & CF * \text{LSTUS} + \Phi_8 \text{ SIZE} + \Phi_9 \text{ LEVRG} + e \end{aligned} \quad (3-4-2b)$$

$$\begin{aligned} CP = & \Phi_0 + \Phi_1 \text{ LSTUS} + \Phi_2 E + \Phi_3 E * \text{LSTUS} + \Phi_4 BV + \Phi_5 BV * \text{LSTUS} + \Phi_6 CF + \Phi_7 \\ & CF * \text{LSTUS} + e \end{aligned} \quad (3-4-2c)$$

$$\begin{aligned} CP = & \Phi_0 + \Phi_1 \text{ LSTUS} + \Phi_2 E + \Phi_3 E * \text{LSTUS} + \Phi_4 BV + \Phi_5 BV * \text{LSTUS} + \Phi_6 CF + \Phi_7 \\ & CF * \text{LSTUS} + \Phi_8 \text{ SIZE} + \Phi_9 \text{ LEVRG} + e \end{aligned} \quad (3-4-2d)$$

$$\begin{aligned} ATMP = & \Phi_0 + \Phi_1 \text{ LSTUS} + \Phi_2 E + \Phi_3 E * \text{LSTUS} + \Phi_4 BV + \Phi_5 BV * \text{LSTUS} + \Phi_6 CF + \\ & \Phi_7 CF * \text{LSTUS} + e \end{aligned} \quad (3-4-2e)$$

$$\begin{aligned} \text{ATMP} = & \Phi_0 + \Phi_1 \text{LSTUS} + \Phi_2 \text{E} + \Phi_3 \text{E} * \text{LSTUS} + \Phi_4 \text{BV} + \Phi_5 \text{BV} * \text{LSTUS} + \Phi_6 \text{CF} + \\ & \Phi_7 \text{CF} * \text{LSTUS} + \Phi_8 \text{SIZE} + \Phi_9 \text{LEVRG} + e \end{aligned} \quad (3-4-2f)$$

where:

LSTUS: dummy variable with value 1 for main board companies and 0, if otherwise.

Coefficients Φ_2 , Φ_4 and Φ_6 represent the value relevance of earnings, book value, and cash flows respectively in the absence of the impact of listing status. Coefficients $\Phi_2 + \Phi_3$, $\Phi_4 + \Phi_5$ and $\Phi_6 + \Phi_7$ represent the share price response to earnings, book value, and cash flows respectively when they are influenced by listing status. H4-2 can be stated in terms of the regression coefficients as follows:

$$\begin{aligned} \text{H4-2: } & \Phi_3 > 0 \\ & \Phi_5 > 0 \\ & \Phi_7 > 0 \end{aligned}$$

8. Equations of H4-3

To examine the impact of the company's age on the value relevance of earnings, book value, and cash flows, the study's sample is categorized based on whether companies' ages are greater than the median age of the study's sample. Median companies' age is represented by the median number of years and months since they were registered at the legal affairs bureau. Please refer to Appendix 5. Following Abayadeera (2010b) who interacted company's age with earnings and book value to capture the influence of this factor on the value relevance of these accounting variables, the study interacts this factor with earnings, book value, and cash flows according to share price proxies. H4-3 Equations with and without control variables are:

$$AP = \lambda_0 + \lambda_1 AGE + \lambda_2 E + \lambda_3 E*AGE + \lambda_4 BV + \lambda_5 BV*AGE + \lambda_6 CF + \lambda_7 CF*AGE + e \quad (3-4-3a)$$

$$AP = \lambda_0 + \lambda_1 AGE + \lambda_2 E + \lambda_3 E*AGE + \lambda_4 BV + \lambda_5 BV*AGE + \lambda_6 CF + \lambda_7 CF*AGE + \lambda_8 SIZE + \lambda_9 LEVRG + e \quad (3-4-3b)$$

$$CP = \lambda_0 + \lambda_1 AGE + \lambda_2 E + \lambda_3 E*AGE + \lambda_4 BV + \lambda_5 BV*AGE + \lambda_6 CF + \lambda_7 CF*AGE + e \quad (3-4-3c)$$

$$CP = \lambda_0 + \lambda_1 AGE + \lambda_2 E + \lambda_3 E*AGE + \lambda_4 BV + \lambda_5 BV*AGE + \lambda_6 CF + \lambda_7 CF*AGE + \lambda_8 SIZE + \lambda_9 LEVRG + e \quad (3-4-3d)$$

$$ATMP = \lambda_0 + \lambda_1 AGE + \lambda_2 E + \lambda_3 E*AGE + \lambda_4 BV + \lambda_5 BV*AGE + \lambda_6 CF + \lambda_7 CF*AGE + e \quad (3-4-3e)$$

$$ATMP = \lambda_0 + \lambda_1 AGE + \lambda_2 E + \lambda_3 E*AGE + \lambda_4 BV + \lambda_5 BV*AGE + \lambda_6 CF + \lambda_7 CF*AGE + \lambda_8 SIZE + \lambda_9 LEVRG + e \quad (3-4-3f)$$

where:

AGE: dummy variable with value 1 for companies with age greater than median age in the sample, 0 otherwise.

Other variables are defined before.

Coefficients λ_2 , λ_4 and λ_6 represent the value relevance of earnings, book value, and cash flows respectively in the absence of the impact of company's age. Coefficients $\lambda_2 + \lambda_3$, $\lambda_4 + \lambda_5$ and $\lambda_6 + \lambda_7$ represent the share price response to earnings, book value, and cash flows respectively when they are influenced by company's age. H4-3 can be stated in terms of the regression coefficients as follows:

$$\begin{aligned} \text{H4-3: } & \lambda_3 > 0 \\ & \lambda_5 > 0 \\ & \lambda_7 > 0 \end{aligned}$$

9. Equations of H5

To examine the impact of the type of industry on the value relevance of earnings, book value, and cash flows, the study's sample is categorized based on whether companies are in services or industrial sectors (please refer to Appendix 5). Following Abayadeera, (2010a, 2010b), who interacted type of industry with earnings and book value to capture the influence of this factor on the value relevance of these accounting variables, the study interacts this factor with earnings, book value, and cash flows according to share price proxies. H5 Equations with and without control variables are:

$$AP = \mu_0 + \mu_1 TYIND + \mu_2 E + \mu_3 E*TYIND + \mu_4 BV + \mu_5 BV*TYIND + \mu_6 CF + \mu_7 CF*TYIND + e \quad (3-5a)$$

$$AP = \mu_0 + \mu_1 TYIND + \mu_2 E + \mu_3 E*TYIND + \mu_4 BV + \mu_5 BV*TYIND + \mu_6 CF + \mu_7 CF*TYIND + \mu_8 SIZE + \mu_9 LEVRG + e \quad (3-5b)$$

$$CP = \mu_0 + \mu_1 TYIND + \mu_2 E + \mu_3 E*TYIND + \mu_4 BV + \mu_5 BV*TYIND + \mu_6 CF + \mu_7 CF*TYIND + e \quad (3-5c)$$

$$CP = \mu_0 + \mu_1 TYIND + \mu_2 E + \mu_3 E*TYIND + \mu_4 BV + \mu_5 BV*TYIND + \mu_6 CF + \mu_7 CF*TYIND + \mu_8 SIZE + \mu_9 LEVRG + e \quad (3-5d)$$

$$ATMP = \mu_0 + \mu_1 TYIND + \mu_2 E + \mu_3 E*TYIND + \mu_4 BV + \mu_5 BV*TYIND + \mu_6 CF + \mu_7 CF*TYIND + e \quad (3-5e)$$

$$ATMP = \mu_0 + \mu_1 TYIND + \mu_2 E + \mu_3 E*TYIND + \mu_4 BV + \mu_5 BV*TYIND + \mu_6 CF + \mu_7 CF*TYIND + \mu_8 SIZE + \mu_9 LEVRG + e \quad (3-5f)$$

where:

TYIND: dummy variable with value 1 for services companies, 0 otherwise.

Other variables are defined before.

Coefficients μ_2 , μ_4 and μ_6 represent the value relevance of earnings, book value, and cash flows respectively in the absence of the impact of type of industry. Coefficients $\mu_2 + \mu_3$, $\mu_4 + \mu_5$ and $\mu_6 + \mu_7$ represent the share price response to earnings, book value, and cash flows respectively when they are influenced by type of industry. H5 can be stated in terms of the regression coefficients as follows:

$$H5: \mu_3 > 0$$

$$\mu_5 > 0$$

$$\mu_7 > 0$$

10. Equations of H6

Most of valuation studies tend to compare the value relevance of the accounting information with results from different markets and periods. To be valid, the comparison has to be made for value relevance tests that have been performed using the same or very similar methodology. Then the comparison is made in terms of coefficients on accounting variables and model's R^2 (Klimczak, 2008).

While the value relevance of the accounting information relative to the three share price proxies has been tested using the same data and methodology, H6 is tested by comparing the results from testing the last five hypotheses of this study. The differences in the results from testing these hypotheses according to each share price proxy reveals which share price proxy is more dependable in indicating the value relevance of earnings, book value, and cash flows.

3.7.4. Multi regressions outputs

Finally, the important multi regression outputs are briefly discussed next.

1. Test of adjusted R square

R^2 is the amount of variance in DV that is explained by the predictor. R^2 has values between 0 and 1. Clearly, the model that is used can be considered to fit the data very well if it has R^2 value close to one. Conversely, the model doesn't fit the data very well if R^2 values are close to 0 (Cavana et al., 2001). During the last fifty years of accounting research, the changes in value relevance have been measured by R^2 (Brown et al., 1999). The coefficient of determination R^2 and the adjusted coefficient of determination adjusted R^2 have customarily been used to calculate goodness of fit of an estimated linear regression model (Ohtani and Tanizaki, 2004). The strength or weakness of the model can be indicated from R^2 values (Klimczak, 2008). Adjusted R^2 is a measure for the suitability of the correlation test results to evaluate the population. Adjusted R^2 helps in overestimating the association strength especially if the model has many IVs (Cavana et al., 2001) as in this study.

2. Test of F statistic

In the analysis of variance (ANOVA) and regression analysis, F -statistic is the value that is well known to most applied researchers. If this statistic produces valid results, certain assumptions will be satisfied for a given set of data (Lix et al., 1996). For practical purposes, this value indicates the significance of the test. Therefore, ANOVA F statistic is used to assess the statistical significance of a result in order to evaluate whether the model as a whole is significant (Pallant, 2007). F statistic significance is depended upon in evaluating the study's models.

3. Test of coefficients

While the unstandardized coefficients represent the estimated regression model coefficients, that is the values of **a** and **b** in the regression equation, the standardized coefficients (Betas) mean that these values are converted to the same scale for different variables to be more comparable. If the researcher is interested in constructing a regression equation, the unstandardized coefficient will be used. On the other hand, if the researcher is interested in comparing the contribution of each IV, the standardized beta will be used (Cavana et al., 2001 and Pallant, 2007). By having a look at betas values, one can immediately notice which IV explains more the variation in the DV (Cavana et al., 2001 and Pallant, 2007).

The use of t-test in a regression model can help to determine the importance of each IV in the model. The best values are well below or above ± 2 . If the significance of t-test is below the selected significant level, it means this IV will be retained in the regression equation. In value relevance studies, both betas coefficients and t-test are used to measure the strength of the value relevance (Klimczak, 2008).

Following previous value relevance studies (Subramanyam and Wild, 1996; Burgstahler and Dichev, 1997; Barth et al., 1998; Ho et al., 2001; Whelan, 2004; Davis-Friday et al., 2006), this study depends on betas, t-tests, and p-values for the pooled sample in accepting or rejecting the study's hypotheses.

4. Additional tests

Following Chen et al. (2001) and Harris et al. (1994), Joint F test and formal test for the difference of R^2 (Cramer test, 1987) was conducted to give robustness and have

greater confidence on the sensitivity of the results. These tests were applied for the impact of foreign ownership, listing status, and type of industry factors on the value relevance of earnings, book value, and cash flows.

The study's sample was divided into two groups consisting of companies with foreign ownership versus those without foreign ownership, companies listed in main board versus those in second board, and services companies versus industrial. To perform Joint F and R^2 significance tests, the above factors are employed as dummy variables to denote a company's membership in each group and test the significance of the interaction variables to assess the impact of each factor on the value relevance of accounting information.

3.8. Summary

In this chapter, the research hypotheses were developed. Hypotheses regarding the influence of four groups of institutional factors on the value relevance of earnings, book value, and cash flows were developed relative to three share price proxies. The expected sign for each hypothesis is illustrated in Table 3.5. Operational definitions, research strategy, and design were also presented. Accordingly, measurements of the independent, dependent, and control variables were provided together with data collection and sampling. Finally, the technique of data analysis (multiple regressions) was explained. The findings of the study are described in the next chapter.

Table 3.5*The Predicted Sign for each Hypothesis*

Hypotheses	Predicted Sign
H1: Earnings are more value relevant than book value and cash flows	+
H2-1: Impact of foreign ownership on value relevance of earnings, book value, and cash flows	+
H2-2: Impact of trading volume on value relevance of earnings, book value, and cash flows	?
H3-1: Impact of financial disclosure time on value relevance of earnings, book value, and cash flows	+
H3-1: Impact of financial disclosure level on value relevance of earnings, book value, and cash flows	+
H4-1: Impact of shareholders number on value relevance of earnings, book value, and cash flows	+
H4-2: Impact of listing status on value relevance of earnings, book value, and cash flows	+
H4-3: Impact of company's age on value relevance of earnings, book value, and cash flows	?
H5: Impact of type of industry on value relevance of earnings, book value, and cash flows	?
H6: Value relevance of earnings, book value, and cash flows is influenced by share price proxies	+

CHAPTER FOUR

FINDINGS

4.0. Introduction

This study aims to examine the value relevance of earnings, book value, and cash flows to extract the accounting variable that can be the best predictor for firm value in Jordan. This was achieved by comparing the value relevance of these variables to detect the more value relevant one relative to share price proxies. Also, this study tries to find whether the value relevance of these accounting variables could be influenced by the selected groups of institutional factors (economic, governance, company's characteristics, and type of industry). Finally, the current study tries to examine which share price proxy (among average annual share price, annual closing share price, and ATM-share price) could be more dependable in indicating the value relevance of these accounting variables. To achieve these objectives, the relationships between the study's IVs and DVs were examined according to the study's hypotheses.

After discussing the research hypotheses and research method in the previous chapter, this chapter presents the findings of this study. As referred in Chapter 3, research data is secondary in nature and it was collected from the ASE website and the annual reports of 91 Jordanian companies listed in ASE for the years 2004-2009.

This chapter is divided into five sections. In addition to the introduction, the research sample which involves the research's technical records and observations' distribution for the research's raw data is reported in the first section. The pre-tests for the research's raw data and variables' quality were discussed in the second section. The quality tests which were applied to check the assumptions of the regression analysis are: Normality, linearity, homoscedasticity, correlation analysis, and multicollinearity. The third section presents the descriptive statistics, while the fourth section in this chapter provides the findings of the multiple regression analysis. Finally, the summary for this chapter is presented in the last section.

To conduct all tests and analyses in this study, SPSS version 16.0 which provides many statistical methods to analyze data is used. A wide range of techniques is available in SPSS to explore the relationships among the variables. These techniques vary according to the type of both the available data and the research's questions that need to be addressed (Pallant, 2007).

4.1. Research sample

In addition to the research's sample discussed in section 3.6.2, this section provides more information as technical records and observations' distribution of the research's sample before starting the tests and analyses of this chapter. The technical records information is related to the target of the study's population, target of the study's sample, sample unit,

selected sample size, and the real sample size in process. This information is illustrated in Table 4.1.

Table 4.1

Research Technical Records

Research sample item	Description
Target of population	All Jordanian companies listed in the main and second boards of ASE for the services and industrial economic sectors for the years 2004-2009
Target of the sample	Jordanian companies (services and industrial sectors) which: <ul style="list-style-type: none"> - Are listed in ASE within the study's period; and - Have complete information about their earnings, book value, cash flows, study's institutional factors, control variables, and share price proxies within study's period
Sample unit	Company
Sample size (selected)	91 companies
Real sample size in process	Depends on each IV and DV observations within research period according to each hypothesis

To better describe the research's sample, observations' frequency within the research's period is reported in Table 4.2. This study employs 16 variables for each company consisting of 1456 observations per year. In total, the sample consists of 8736 observations for the 6 years period and the final number of observations including the pooled sample is 17472.

Table 4.2

Variables and Observations Frequency within Research Period

Sample size (1)	91 companies
Variables per company (2)	16 variables
Observations per year ($3 = 1 * 2$)	1456 observations
Observations within research's period ($4 = 3 * 6$ years)	8736 observations
Pooled observations (5)	8736 observations
Total observations in process ($6 = 4 + 5$)	17472 observations

Figure 4.1 illustrates the research's sample path in this section.

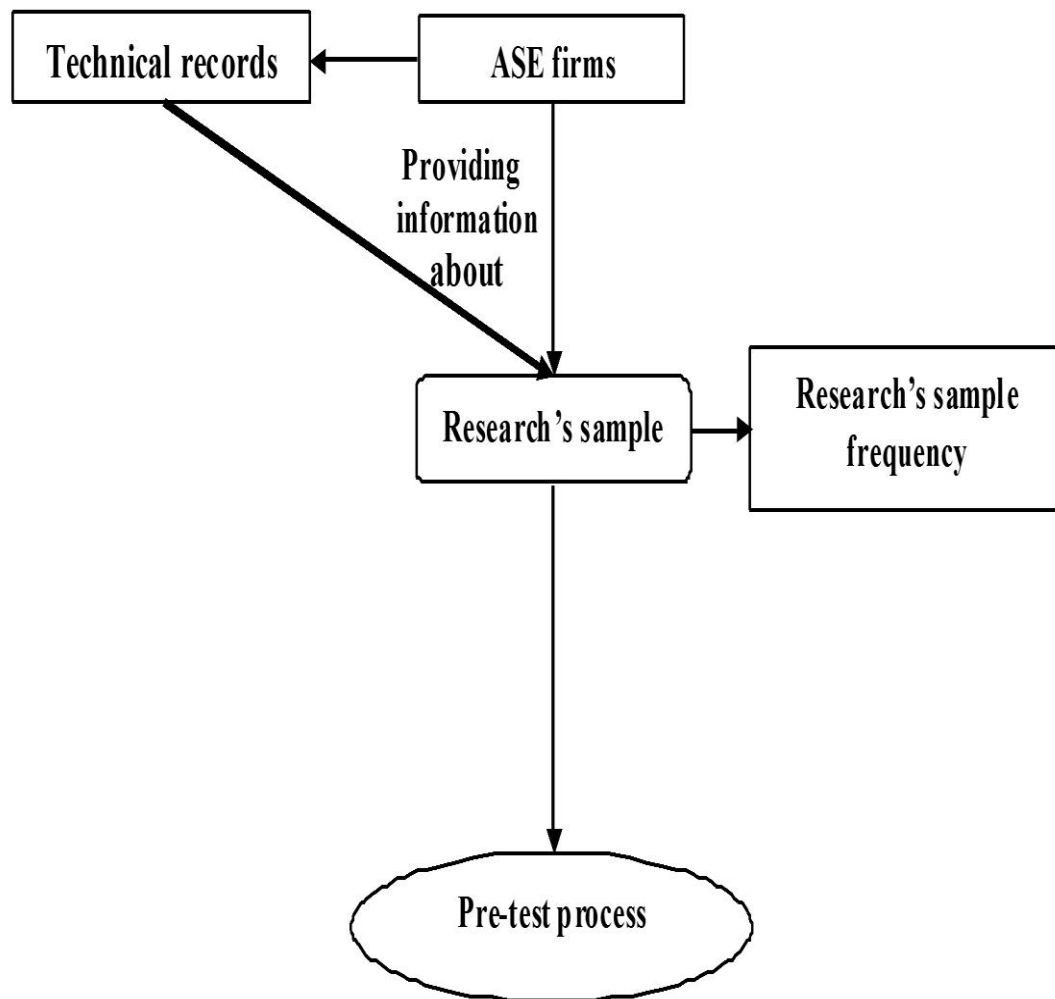


Figure 4.1

Research Sample Path

4.2. Pre-tests for the data and variables quality

The first step of data analysis technique is testing the raw data and variables quality. As referred in section 3.7.1, it is important to examine the strength of the analysis used in this chapter is important. Many assumptions should always be tested by researchers when using the regression analysis. The major assumptions that must be taken in the researcher's consideration are normality, linearity, homoscedasticity, correlation, and multicollinearity. All these assumptions have been tested to make this data suitable for regression analysis (Mertler and Vannatta, 2005; Pallant, 2007; McManus, 2009; Jones Jr, 2010; Wahab et al., 2010). The following subsections discuss these tests in detail.

4.2.1. Normality test

The first quality test is the normality test. Many statistical techniques assume that the distribution of DV scores is normal. The determination of data distribution is the first important and common step that must be done before undertaking many statistical analyses. Distribution analysis is done to understand the nature of the investigated population. It is important because many other statistical analyses depend on the nature of the data distribution. The most well known distribution is the normal distribution. Many statistical analyses are based on the normality assumption. The word normal describes a symmetrical with greatest frequency of scores in the middle and smaller frequency towards the extremes (Cavana et al., 2001; Gravetter and Wallanau, 2004; Pallant, 2007). In this study, the normality test was performed by three measures: Skewness and kurtosis values, distribution shape, and checking for outliers as follows.

1. Skewness and kurtosis values measurement

Skewness value provides an indication of the distribution symmetry, while kurtosis value provides information about the peakedness of that distribution (Bickel and Lehmann, 1975; Pallant, 2007). The skewness and kurtosis values for research's raw data are illustrated in Table 4.3. For skewness and kurtosis values range, please refer to section 3.7.1.

Table 4.3

The Statistics of Skewness and Kurtosis Values for Research Raw Data

Variables	N	Mean	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
AP	546	3.3443	4.068	.105	24.573	.209
CP	546	3.2642	4.390	.105	27.208	.209
ATMP	546	3.4402	6.740	.105	68.279	.209
E	546	.1518	3.845	.105	24.417	.209
BV	546	1.7093	4.956	.105	37.035	.209
CF	546	.1523	5.058	.105	55.958	.209
SIZE	546	7.2877	.452	.105	.200	.209
LEVRG	546	.3030	.900	.105	.640	.209
Valid N	546					

AP: Average annual share price; CP: Annual closing share price; ATMP: ATM-share price: Share price after a three-month period following the financial year-end; E: Earnings per share; BV: Book value per share; CF: Operating cash flows per share; SIZE: Company's size (log of total assets); LEVRG: Company's leverage (debt to total asset ratio).

Normality test has been executed for the research's DVs and IVs raw data. The variables according to Table 4.3 showed non-normal distribution. The skewness values for the research's variables range from 0.452 for size variable to 6.740 for ATM-share price variable. The kurtosis values range from 0.200 to 68.279 for those variables respectively

within the research period. It is clear that most skewness and kurtosis values (except for size and leverage variables) were above 2.

The correlation between the raw data of the accounting information (earnings, book value, and cash flows) simultaneously as the research's IVs and share price proxies (average annual share price, annual closing share price and ATM-share price) as the research's DVs within the period 2004-2009 has been tested and the results are reported in Table 4.4.

Table 4.4

Correlation between Earnings, Book Value, and Cash Flows Simultaneously and Dependent Variables Raw Data

DVs	AP		CP		ATM-share price	
	R^2	Adj. R^2	R^2	Adj. R^2	R^2	Adj. R^2
Yrs						
04	0.67	0.65	0.69	0.68	0.59	0.58
05	0.72	0.71	0.79	0.78	0.49	0.47
06	0.49	0.48	0.54	0.53	0.49	0.47
07	0.72	0.71	0.75	0.74	0.62	0.61
08	0.83	0.81	0.84	0.83	0.81	0.81
09	0.75	0.74	0.74	0.73	0.64	0.63

Note: Correlations are significant at 0.05 levels or better.

Adj. R^2 : Adjusted R^2

All variables are defined before.

Table 4.4 shows that R^2 and adjusted R^2 values relative to average annual share price are more close to those relative to annual closing share price than those relative to ATM-share price. Although the above results are significant, they are undependable because of the non-normal distribution of the variables. To solve the problem of the variables' non-normal distribution, transformation process was conducted. Transformation method is the best step that transforms the non-normal distribution into a normal one (Tabachnick and Fidell, 1996).

Non-normal distributions (positive or negative skewness) were transformed into a normal one by using an appropriate transformation rule (Tabachnick and Fidell, 1996; Pallant, 2007). Since the study's data has substantial positive skew, it is transformed by using logarithm (Pallant, 2007) as illustrated in Table 4.5.

Table 4.5

Transformation Rule

Non-normal distributed variables	Variables	Transformation rule
AP, CP and ATM-share price	DVs	Transformed to new variables by using LOG10
E, BV, CF	IVs	Transformed to new variables by using LOG10

LOG10: Logarithm.

All variables are defined before

The normality test for the transformed variables has been repeated and the new values of skewness and kurtosis are shown in Table 4.6. As reported in this table, most of the skewness and kurtosis values for the research's transformed variables are within ± 2 .

2. Distribution shape

A good indication whether the distribution can be assumed to be normal can be obtained by using graphical methods, such as histograms with normal distribution curves and normal Q-Q plots.²⁸ The histograms in Figure 4.2 show the actual shape of the DVs distribution (average annual share price (AP), annual closing share price (CP), and ATM-share price (ATMP) within the research's period. The scores appear to be reasonably normally distributed with most scores accruing in the center, tapering out towards the

²⁸ To explain the results of this section, the researcher based on evaluation rules used in Pallant study (2007).

extremes. Also, the scores are not skewed to the left or right or arranged in a rectangular shape.

Table 4.6

Skewness and Kurtosis Values for Research Variables after Transformation

Variables	N	Mean	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
AP	546	.3767	.496	.105	.421	.209
CP	546	.3501	.334	.105	.654	.209
ATM-share price	546	.3667	.481	.105	.691	.209
E	393	-.8682	-.026	.123	.124	.246
BV	545	.1671	.591	.105	3.131	.209
CF	347	-.7387	-1.138	.131	5.665	.261
SIZE	546	7.2877	.452	.105	.200	.209
LEVRG	546	.3030	.900	.105	.640	.209

All variables are defined before.

If the sample were from a normal distribution, normal Q-Q plot diagram of the variables observed values can be plotted against its expected values. Figure 4.2 shows the Q-Q plots for the research's DVs. It can be seen that the points clustered around reasonably straight line, so a normal distribution can be assumed for the study's sample.

Detrended normal Q-Q plots for the research's DVs are obtained by plotting the deviation of the scores from the zero line (Figure 4.2). It can be seen that there is no real clustering of scores with most of these clustering around the zero line.

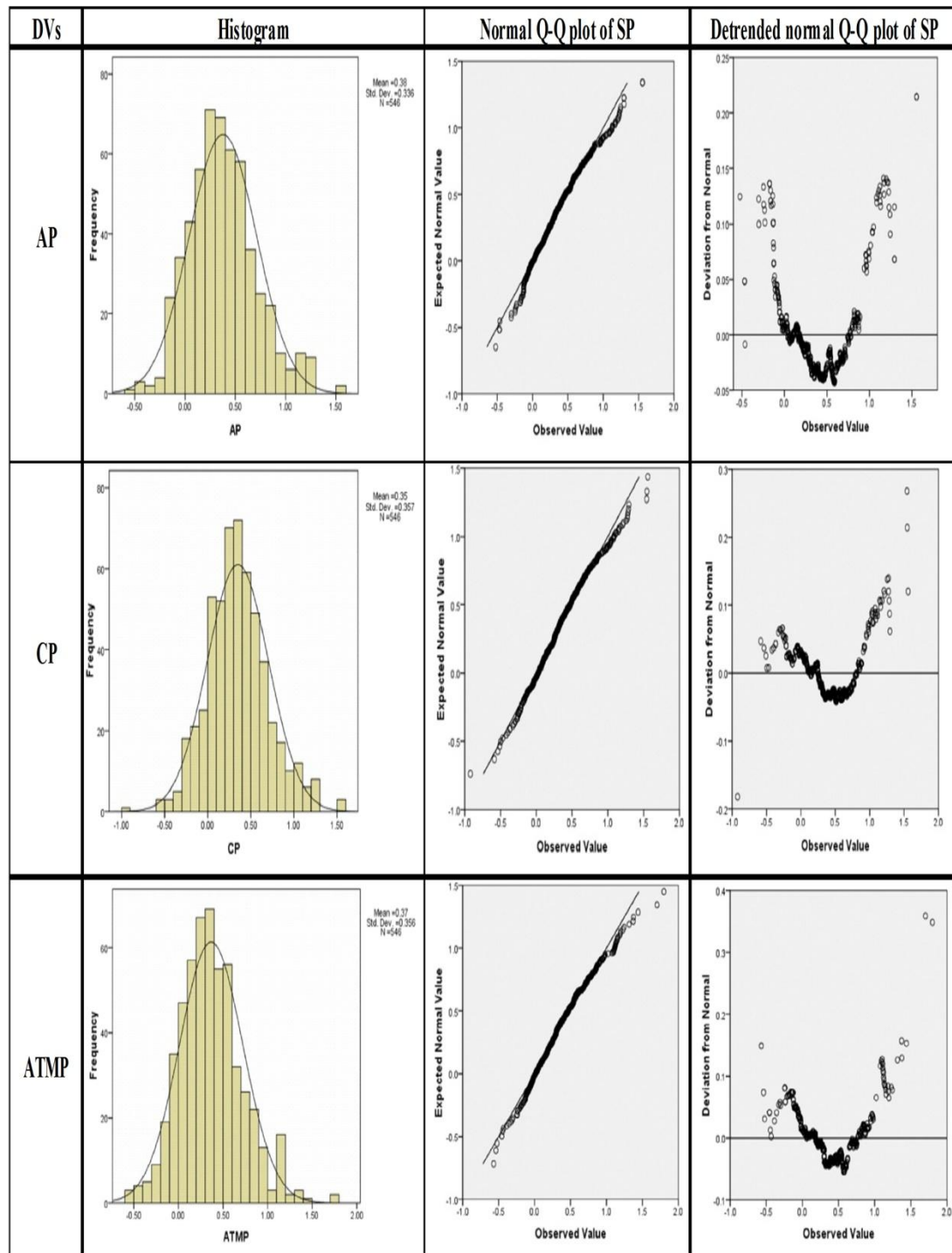


Figure 4.2
Normality Test for Dependent Variables

3. Checking for outliers

Outliers and extremes are cases with values well above or below the majority of other cases. Regression analysis is sensitive to extreme cases or outliers. In interpreting the regression analysis, results are adversely affected by those cases even as little as one or two. To reduce the problems of outliers, transformation process is needed to be used (Pallant, 2007). Through the transformation process, observations that are considered as outliers will be removed from the process.

For the purpose of this study, outliers' inspection was applied for the remained data (data remained after transformation). Outliers' inspection can be performed firstly by investigating the histograms in Figure 4.2, which show that some data points are setting on their own out on the stream, but they drop in such a way that made them not too much to worry about. Secondly, outliers were determined by an initial boxplots screening based on all variables (Pallant, 2007; McManus, 2009).

By inspecting the boxplots in Figures 4.3, 4.4 and 4.5, they show some outliers (extend more than 1.5 box length) and extreme points (extend more than 3 box length). To detect the identification diagnostic (ID) numbers for both outliers and extreme points of the research variables (earnings, book value, and cash flows) within the research's period, please refer to Table 4.7.

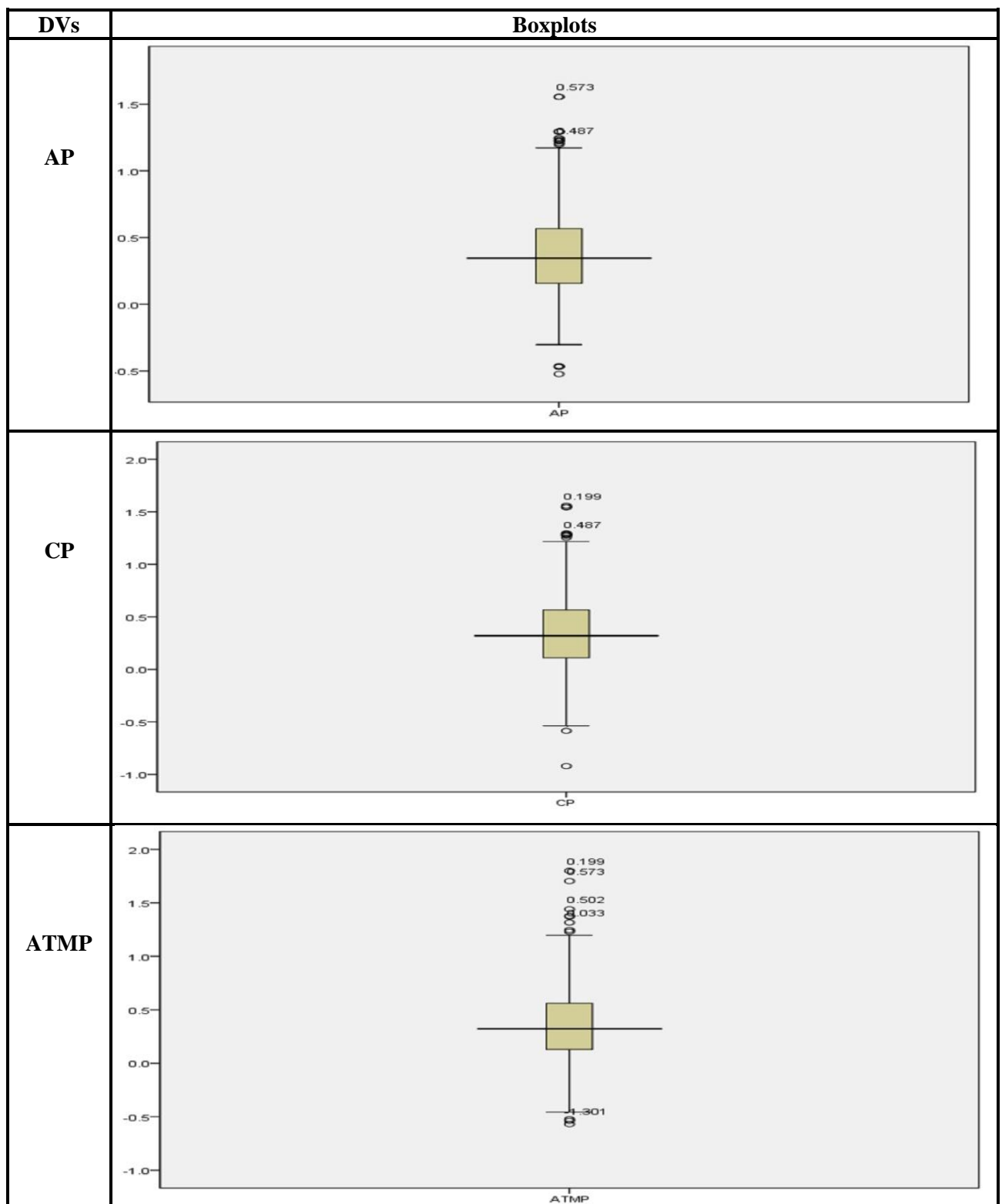


Figure 4.3
Outliers Test for Earnings and Share Price Proxies Relationship
 All variables are defined before.

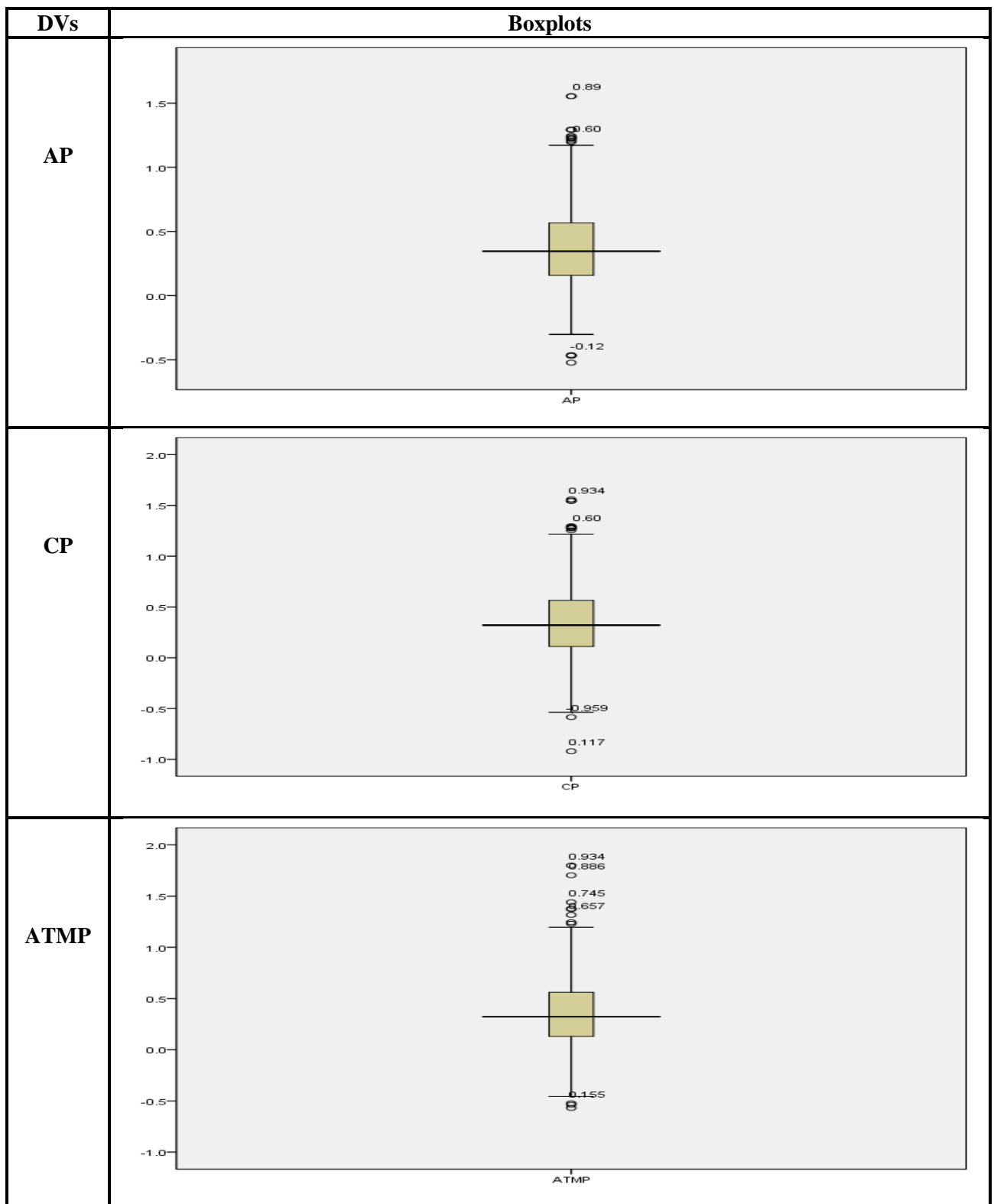


Figure 4.4
Outliers Test for Book Value and Share Price Proxies Relationship
 All variables are defined before.

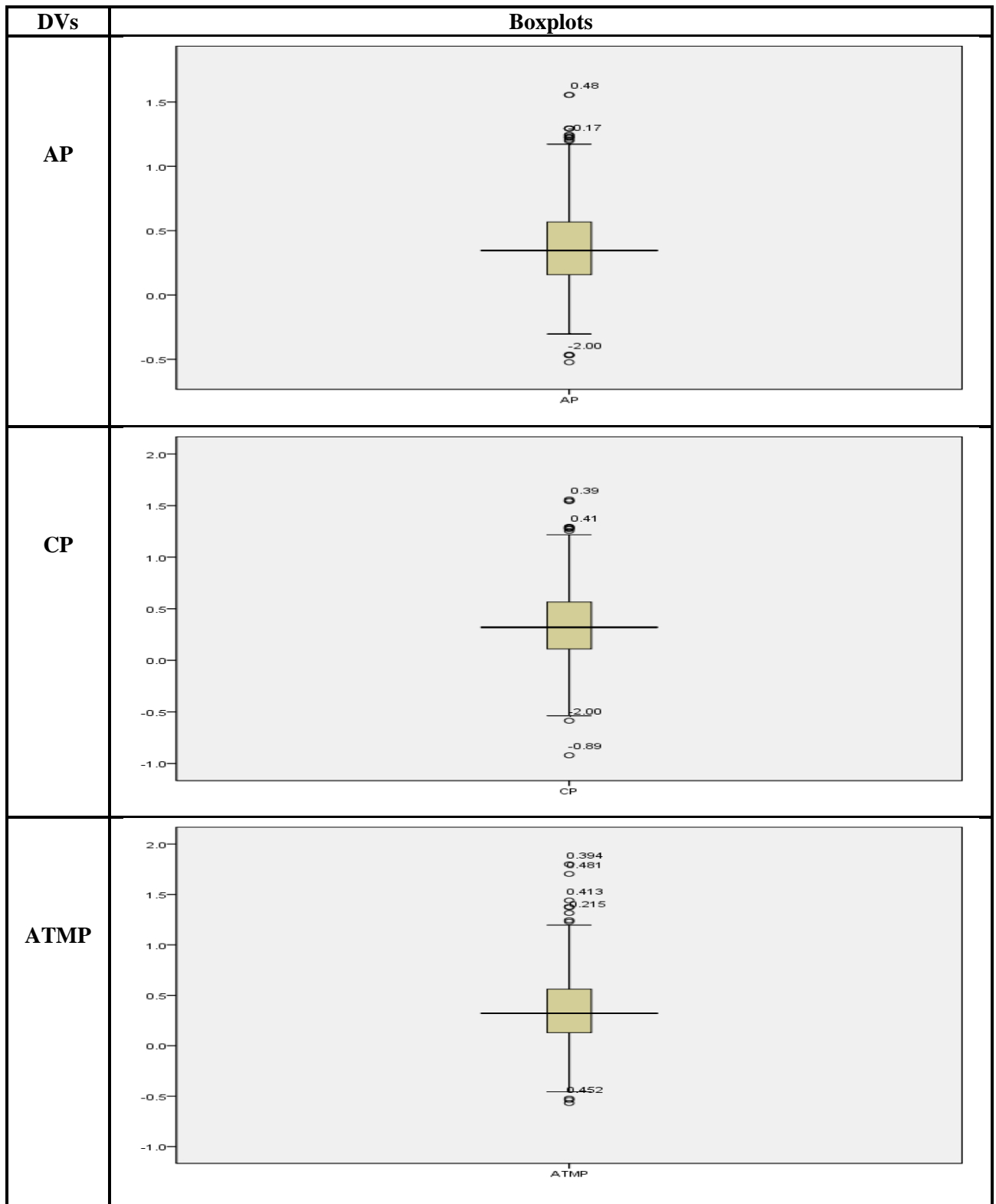


Figure 4.5
Outliers Test for Cash Flows and Share Price Proxies Relationship
 All variables are defined before.

Table 4.7*Identification Diagnostic (ID) of Outliers and Extreme Points*

DVs	Earnings		Book value		Cash flows	
IVs	Outliers	Extreme*	Outliers	Extreme	Outliers	Extreme
AP	10, 39, 120, 225, 293, 300, 316, 407	151,198, 546	191, 254, 370, 455, 482	104, 352, 545	191, 254, 370, 455, 482	104, 352, 545
CP	10,110,151, 189, 225, 293, 300, 378, 407	/	254, 405, 487, 545	/	46, 321, 323, 413, 525	225, 506
ATMP	12, 30, 61, 120, 151, 198, 225, 407, 526, 546	189	154, 455, 482, 518, 526	104, 254	48, 137, 169, 269, 319, 448, 518	213, 323

Asterisk * in the diagrams

All variables are defined before.

After checking these outliers and extreme points, the researcher found that they are genuine and not just an error, but they are within the possible scores range for the research's variables. In order to treat these outliers, two methods have been suggested by the statistic writers. The first is removing all extreme outliers. The second is changing their values to a less extreme value (Pallant, 2007).

Whereas the current study used secondary data and removing these scores will affect the analysis, so the researcher chooses to test how much of a problem these outlying cases are likely to be. This can be investigated by comparing the 5% trimmed mean with the mean values as illustrated in Table 4.8.

Table 4.8
Investigating Outlier Points

IVs	DVs	Mean	– 5% Trimmed Mean	= Difference*
Earnings	AP	0.3767	0.3646	0.012
	CP	0.3501	0.3421	0.008
	ATMP	0.3667	0.3566	0.01
Book value	AP	0.3767	0.3456	0.0311
	CP	0.3501	0.3421	0.008
	ATMP	0.3667	0.3566	0.01
Cash flows	AP	0.3767	0.3646	0.0121
	CP	0.3501	0.3201	0.03
	ATMP	0.3667	0.3421	0.0246

* A difference of 0.09 is assumed to be very similar according to Pallant (2007).
All variables are defined before.

According to Pallant (2007), if the trimmed mean and mean values are very different, it means that a further investigation for the data points is needed. If the trimmed mean and mean values are very similar, it means that not too different are the values from the remaining distribution. For this study, Table 4.8 shows that all difference values are < 0.09 (assumed to be very similar), so the researcher decided to keep these points in the process.

4.2.2. Linearity test

The second quality test is linearity. The linear association between the research's variables has been examined. The non-linear elements (if it exists) will affect the correlation values (Hair et al., 1998). Researchers often faced a problem of how they can appropriately describe the relationship of a set of paired values of related variables by a straight line (Thornby, 1972). The linear scoring systems' adequacy for the research's variables can be examined by using the regression test of linearity (Cox and Wermuth, 1994).

The linearity assumptions of the regression model have been tested by plotting the normal P-P plots and the scatterplots of the standardized residual distribution. It is a good idea, before performing a correlation analysis, to generate a scatterplot which enables the researcher to check for the violation of the linearity assumption (Pallant, 2007). If a roughly straight line (not curve) passing the scatterplot of scores can be seen, it means that research data is in accordance with linearity assumptions (Al Arussi, 2008).

To better understand the above information, Figure 4.6 has been diagrammed. The figure shows the normal probability plots (P-P) and scatter plots. In the normal P-P plot, one can see that the scores lie in a reasonably straight diagonal line from bottom left to top right. This would suggest that there is no major deviation from linearity.

By plotting the scatterplots of the regression standardized residuals with the predictive values, it can be seen that scores are roughly rectangularly distributed, with scores mostly concentrated in the center as illustrated in Figure 4.6. Also, this figure shows no clear or systematic pattern of residuals curve linear which indicates that there is no violation of the linearity assumption.

Finally, a normal distribution for the standardized residual scores could be seen with the linear relationship between both the expected and observed cumulative probabilities (George and Mallery, 2007).

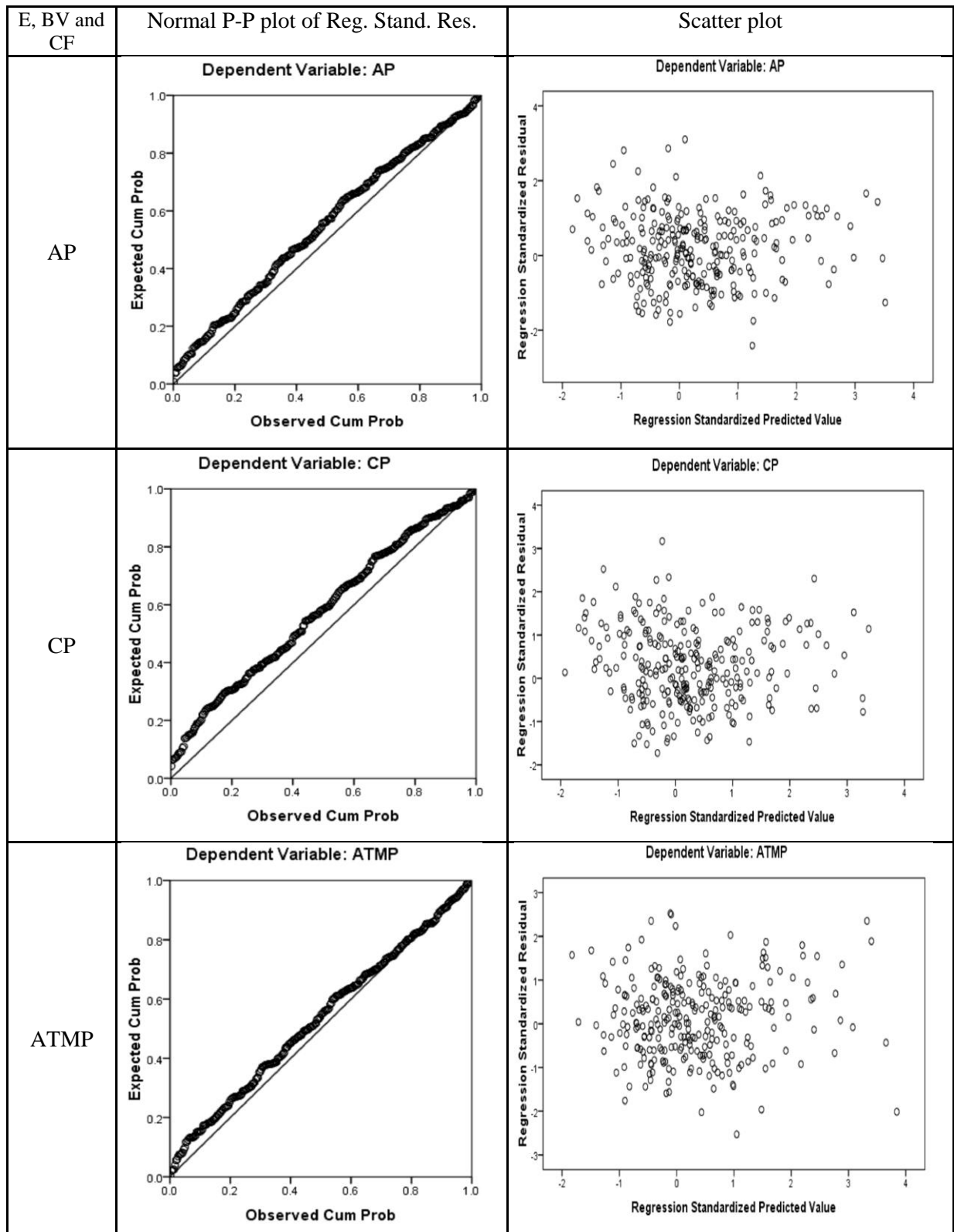


Figure 4.6

Linearity Test Results of Earnings, Book Value, and Cash Flows and Share Price Proxies
 Reg. Stand. Res.: Regression Standardized Residual; All variables are defined before.

4.2.3. Homoscedasticity test

The third quality test is homoscedasticity which describes the homogeneity of the variance. It can be evaluated by plotting the scatterplot. There is no violation of the homoscedasticity assumption, if the scores have a semi-regular shape in the scatterplot (George and Mallery, 2007; Pallant, 2007; McManus, 2009; Jones Jr, 2010). The scatterplots which represent the results of the homoscedasticity test that are displayed in Figure 4.6 show that the scores are clustered even from one end to the other. This would suggest that no violation for the assumption of homoscedasticity.

4.2.4. Correlation test

The forth quality test is the correlation analysis. An indication about the existence of a relationship between two variables can be provided by this test, but it does not indicate that one variable causes the other. A correlation coefficient R is a measure of linear association between two variables (Salkind, 2000; Razdan, 2004; Pallant, 2007; Krishnaswamy et al., 2008).

Positive values of R coefficient indicate that when one value increases (decreases) so does the other, whereas negative values indicate that when one variable increases (decreases) the other will decrease (increase). The correlation coefficient Pearson R is the most prominent measure for linear association (Cavana et al., 2001; Zikmund, 2003; Razdan, 2004; Tian and Wilding, 2008). The R values and their descriptions are illustrated in Table 4.9.

Table 4.9*R Values Description*

$\pm R$	Correlation description
1	Perfect correlation
0.80 – 0.99	Very strong correlation
0.70 – 0.79	Strong correlation
0.50 – 0.69	Slightly strong correlation
0.30 – 0.49	Slightly weak correlation
0.20 – 0.29	Weak correlation
< 0.2	Very weak correlation
0.00	No correlation

Source: Guildford and Christensen (1973); Cohen (1988); Razdan (2004); Pallant (2007)

A number of factors are needed to be considered when interpreting the results of a correlation analysis. Firstly, since the correlation coefficient Pearson R provides an indication of the linear relationship between two variables, the strength of this relationship will be underestimated by R values if a non-linear relationship exists between two variables. Therefore, a check for the scatterplot is needed particularly if R values are low (Healy, 1984; Cavana et al., 2001; Pallant, 2007).

The second factor that can affect the correlation coefficient especially in small sample is the outliers. Sometimes outliers make R values more than it should be, and other times it leads to underestimate the linear relationship. Therefore, the offending values (if they exist) are needed to be treated (removed or recoded) to reduce its effect on R values (Cavana et al., 2001; Pallant, 2007). Details of checking outliers and extreme scores are discussed in previous subsection (4.2.1).

The third factor that can affect R values is the sample size. Care must be taken when interpreting correlation coefficients that come from a small range of scores. Correlation coefficients that result from studies using a restricted range of cases are different from those used full ranges of scores (Pallant, 2007). In this study, the correlation coefficient R is measured for the research's DVs (average annual share price, annual closing share price, and ATM-share price) with each IV (earnings, book value, or cash flows) within the research's period as reported in Table 4.10.

Table 4.10

Correlation Test between Earnings (E), Book Value (BV), and Cash Flows (CF) and Share Price Proxies

<i>IVs</i>	<i>DVs</i>	Correlation coefficient (R) *	Relationship description
E	AP	0.67	Slightly strong correlation
	CP	0.70	Strong correlation
	ATMP	0.59	Slightly strong correlation
BV	AP	0.71	Strong correlation
	CP	0.71	Strong correlation
	ATMP	0.69	Slightly strong correlation
CF	AP	0.45	Slightly weak correlation
	CP	0.48	Slightly weak correlation
	ATMP	0.44	Slightly weak correlation

Note:

* A correlation is significant at the 0.05 level or better.

All variables are defined before.

Table 4.10 indicates the direction and strength of the linear relationship between the research's variables (earnings, book value, and cash flows, and share price proxies). Within the research's period, the results show that the average annual share price has slightly strong, strong, and slightly weak correlations with earnings, book value, and cash flows respectively. The annual closing share price and ATM-share price have strong or

slightly strong correlations with earnings and book value and slightly weak correlation with cash flows.

4.2.5. Multicollinearity test

The fifth quality test is multicollinearity test. Multicollinearity exists when the research's IVs are highly correlated with each other, where $R \geq 0.7$ (Pallant, 2007). After processing the multicollinearity test, it is hoped to have IVs which are strongly correlated to the research's DV but not to each other. Multicollinearity assumption can be checked according to two ways. The first is by indicating the values of tolerance and variance inflation factors (VIF), while the second is by indicating the values of the correlation between each IV with the others (Pallant, 2007; Jones Jr, 2010).

Tolerance for a model indicates how much of an IV variability that is not explained by the other IVs and it has the formal of $1 - R^2$. Very small values of tolerance (less than 0.1) indicate a high correlation between variables and the possibility of multicollinearity is suggested. VIF measures how much the variances of the estimated regression coefficient are inflated compared to when independent variables are not linearly related (Sekaran, 2000; Pallant, 2007). The VIF is just the inverse of the tolerance value. So, high values of VIF suggest the possibility of multicollinearity (Meyers et al., 2006).

While tolerance values range from 0 to 1, VIF has a maximum value of 10, which is considered as a critical value for serious multicollinearity (Marquardt, 1970; Hair et al.,

1998; O'Brien, 2007). Table 4.11 illustrates the tolerance and VIF values for earnings, book value, and cash flows.

Table 4.11

Multicollinearity Test by Tolerance and Variance Inflation Factors (VIF)

DVs	AP		CP		ATMP	
IVs	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
E	0.50	1.99	0.52	1.96	0.49	1.97
BV	0.54	1.87	0.56	1.90	0.53	1.85
CF	0.69	1.45	0.67	1.44	0.70	1.47

All variables are defined before.

From this table and according to the three share price proxies, tolerance values are ranged from 0.49 to 0.52, 0.53 to 0.56 and from 0.67 to 0.70 for earnings, book value, and cash flows respectively, while VIF values are ranged from 1.96 to 1.99, 1.85 to 1.90 and from 1.44 to 1.47 for earnings, book value, and cash flows respectively. These results indicate the absence of multicollinearity among earnings, book value, and cash flows. Therefore, no violation of the multicollinearity assumption has been found.

The second method to test the multicollinearity is by indicating the values of Pearson correlation among earnings, book value, and cash flows. According to Sekaran (2000), the Pearson correlation has been computed in this study to examine the direction, strength, and significance of the bivariate relationship among the study's independent accounting variables, and the results are reported in Table 4.12. From this table, it is clear that Pearson coefficients for the correlation among earnings, book value, and cash flows

are less than 0.7, which indicates that there is no multicollinearity problem among these variables.²⁹

Table 4.12

Multicollinearity Test by Correlations

IVs		E	BV	CF
E	Pearson Correlation	1	.665**	.529**
	Sig. (2-tailed)		.000	.000
	N	393	393	276
BV	Pearson Correlation	.665**	1	.482**
	Sig. (2-tailed)	.000		.000
	N	393	545	346
CF	Pearson Correlation	.529**	.482**	1
	Sig. (2-tailed)	.000	.000	
	N	276	346	347

** Correlation is significant at the 0.01 level (2-tailed).

All variables are defined before.

This study conducted the assumptions of normality, linearity, homoscedasticity, correlation, and multicollinearity to ensure the validity of a statistical conclusion. The regression assumptions have been examined, and it is found that there is no reason to doubt the model.

Finally, Figure 4.7 illustrates the checking processes that were applied for regression analysis assumptions in this study.

²⁹ According to Pallant (2007), no multicollinearity is assumed to be exist when Pearson correlation is less than 0.7.

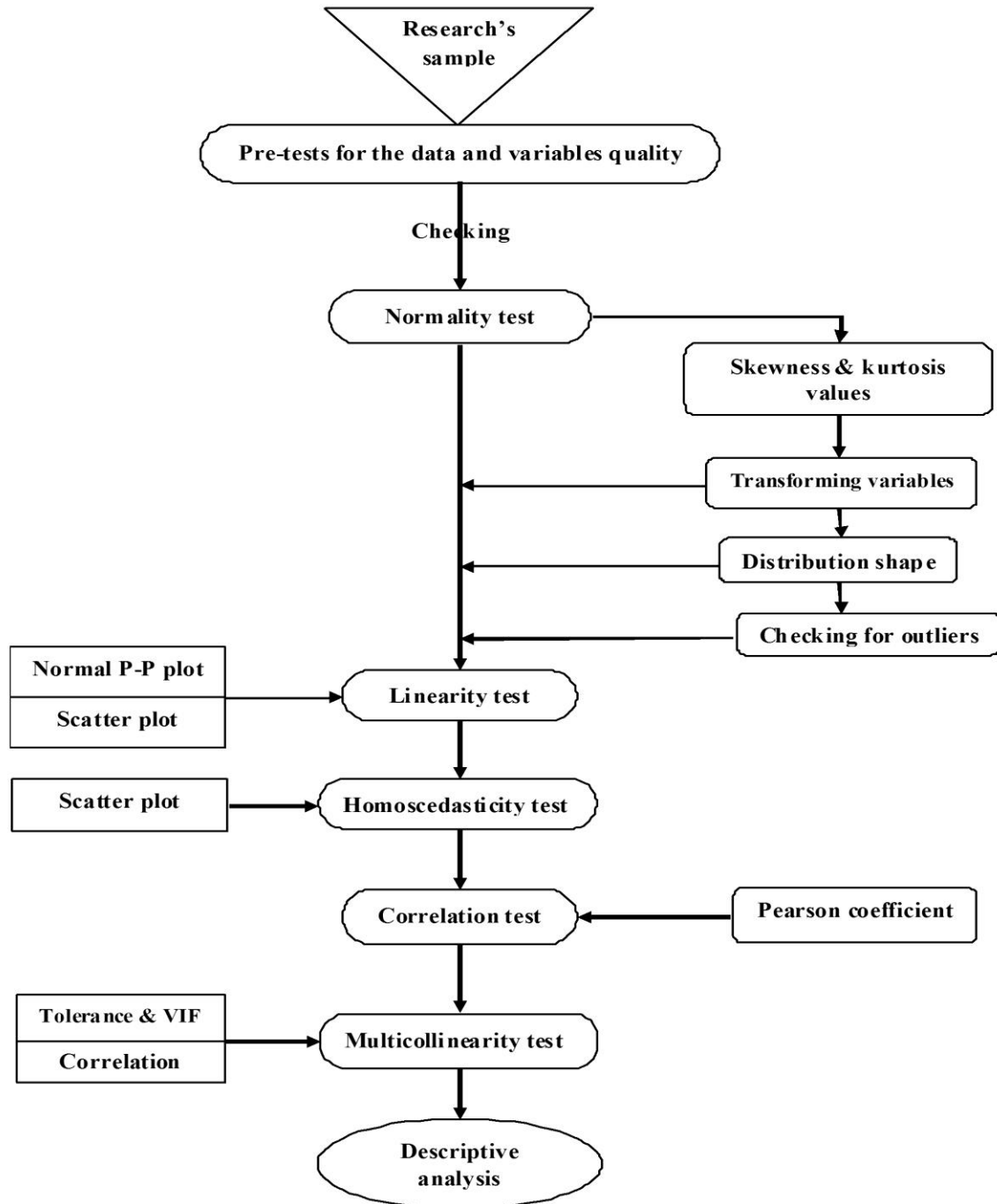


Figure 4.7
Checking Regression Assumptions

4.3. Descriptive statistics

The second main analysis in this study is the descriptive statistics. The descriptive statistics results provided the data's distribution profile to make sure that the sample population approached the normal distribution. For every research analysis, this step is so important because it helps in choosing the right statistical method that will be used to analyze the collected data (Cooper and Schindler, 2003).

By using SPSS, frequency distribution and descriptive statistics were determined for the research's DVs (average annual share price, annual closing share price and ATM-share price) and IVs (earnings, book values, and cash flows) with respect to sample size (N). In this section, frequency and percentage distribution, line graphs, and statistical measures are the three ways by which the findings are presented.

4.3.1. Frequency and percentage distribution

A frequency distribution determines the occurrences frequency of each value of an identified variable. The demographic frequency analyses determined the variables' population profile. Through the analysis of the demographic frequencies, the percentages for the data characteristics were done (Sekaran, 2000; Cooper and Schindler, 2003; Gay and Airasian, 2003).

By using SPSS technique, the frequency and percentage distribution for the research's observations after transformation (missed and remained) is reported in Table 4.13.

Table 4.13*Research Sample Size Description*

observations Variables	Research's sample for 6 Yrs	Missed	Missed observations in pooled	Remained	Remained observations in pooled	Total observations
AP	546	/	/	546	546	1092
CP	546	/	/	546	546	1092
ATMP	546	/	/	546	546	1092
E	546	153	153	393	393	1092
BV	546	1	1	545	545	1092
CF	546	199	199	347	347	1092
FORN	546	/	/	546	546	1092
TRDV	546	/	/	546	546	1092
DTIM	546	/	/	546	546	1092
DLVL	546	/	/	546	546	1092
SHRHNO	546	/	/	546	546	1092
LSTUS	546	/	/	546	546	1092
AGE	546	/	/	546	546	1092
TYIND	546	/	/	546	546	1092
SIZE	546	/	/	546	546	1092
LEVRG	546	/	/	546	546	1092
Total	8736	353	353	8383	8383	17472
observations			706		16766	
% of total observations			4		96	100

All variables are defined before.

4.3.2. Line graph

In the research process, an essential component is the findings presentation. The process of presenting research results can be enhanced by visual aids, such as tables, graphs, and illustrations. Using these visual aids makes the research be more effective and capture the reader's full attention (Krawiec, 1995). A line graph facilitates the inspection of the mean scores of a DV across a number of different values of an IV. While the line graph does not explain whether the relationship is statistically significant, it certainly gives a lot of information and raises a lot of additional questions (Pallant, 2007). For this study, Figure 4.8 represents the line graph that is displayed to provide additional inspection for the research's DVs and IVs (earnings, book value, and cash flows) within research's period.

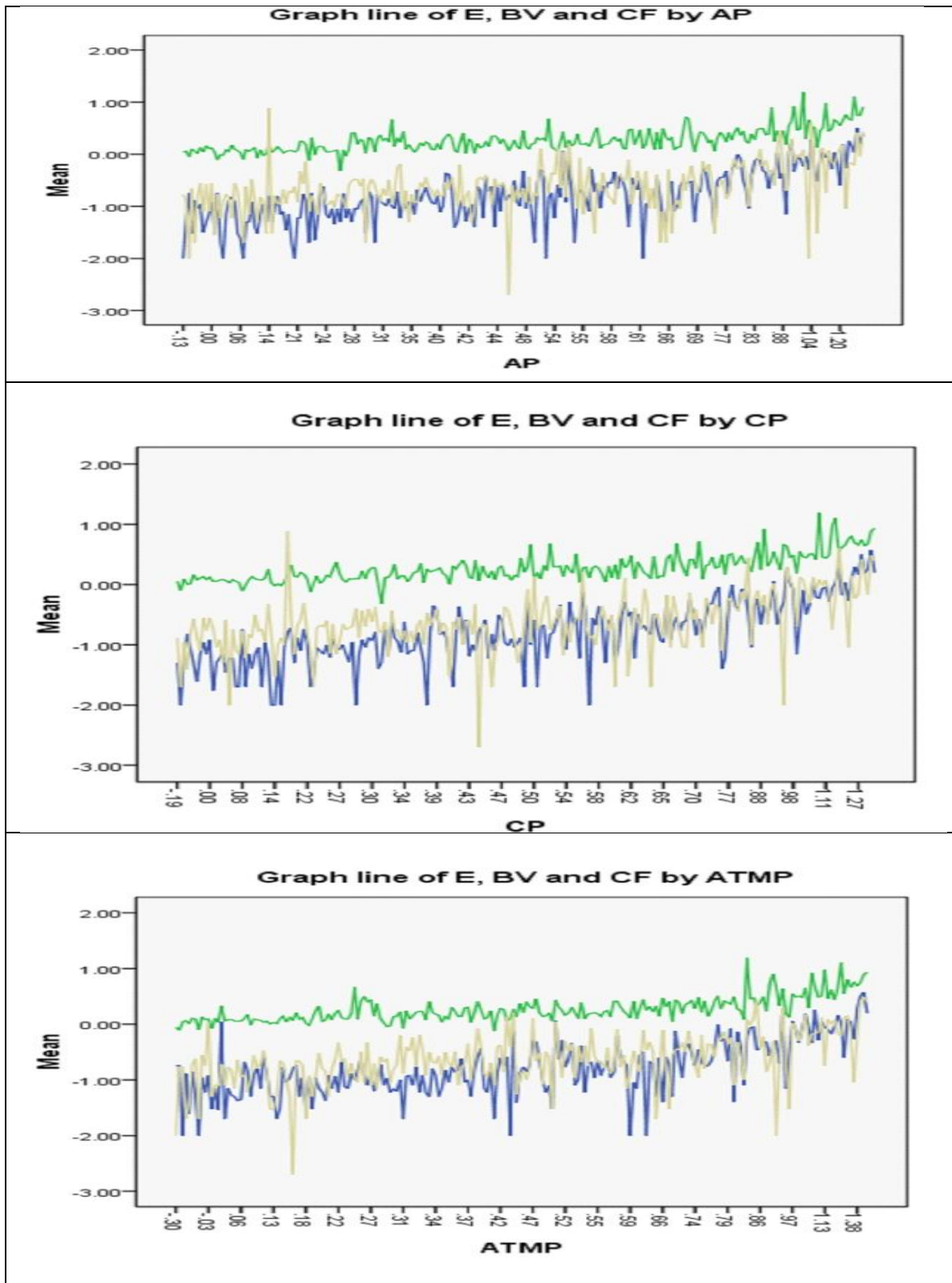


Figure 4.8
Line Graph for Research Share Price Proxies and Earnings, Book Value, and Cash Flows
 Blue line: Earnings (E); green line: Book value (BV); grey line: Cash flows (CF)

This figure illustrates, from the first look, the association as a clear relationship between the changes in DVs and the changes in each IV (earnings, book values, and cash flows) without a direct referring to coefficients, tests, and significances. From this graph and within research's period, it is clear that earnings show a complex interfering with cash flows, while book value shows simple interfering with both earnings and cash flows for all the research's DVs.

4.3.3. Statistical measures

Descriptive statistics deals with different aspects of measures of a population. Examples of these measures are the mean and median for location measures, standard deviation as measures of scale, and the skewness and kurtosis values measures (Bickel and Lehmann, 1975; Pallant, 2007).

These measures are conducted to make primary comparisons of the main differences among the research's variables. The study's descriptive statistical measures for share price proxies and accounting information are reported in Table 4.14 Panel A. Among the three share price proxies, average annual share price reported the highest mean and median values while the lowest are for annual closing share price. Among the accounting variables, cash flows show the highest standard deviation while the lowest is shown by book value although all values are less than 3 which ensure the absence of outliers that could significantly affected the analysis and in turn the results.

Table 4.14
Descriptive Measures

Panel A		AP	CP	ATMP	E	BV	CF
N	Valid	546	546	546	393	545	347
	Missing	0	0	0	153	1	199
Mean		.3767	.3501	.3667	-.8682	.1671	-.7387
Median		.3456	.3201	.3222	-.8539	.1271	-.6990
Std. Deviation		.33579	.35695	.35551	.50245	.22254	.55186
Skewness		.496	.334	.481	-.026	.591	-1.138
Std. Error of Skewness		.105	.105	.105	.123	.105	.131
Kurtosis		.421	.654	.691	.124	3.131	5.665
Std. Error of Kurtosis		.209	.209	.209	.246	.209	.261
Minimum		-.52	-.92	-.57	-2.00	-.96	-4.40
Maximum		1.55	1.56	1.80	.57	1.19	.89

Panel B		FORN	TRDV	DTIM	DLVL	SHRHNO	LSTUS
N	Valid	546	546	546	546	546	546
	Missing	0	0	0	0	0	0
Mean		.84	.45	.71	.53	.68	.58
Median		1.00	.00	1.00	1.00	1.00	1.00
Std. Deviation		.371	.498	.454	.499	.466	.494
Skewness		-1.812	.214	-.931	-.133	-.789	-.335
Std. Error of Skewness		.105	.105	.105	.105	.105	.105
Kurtosis		1.287	-1.961	-1.136	-1.990	-1.382	-1.895
Std. Error of Kurtosis		.209	.209	.209	.209	.209	.209
Minimum		0	0	0	0	0	0
Maximum		1	1	1	1	1	1

Panel B (cont.)		AGE	TYIND	SIZE	LEVRG
N	Valid	546	546	546	546
	Missing	0	0	0	0
Mean		.45	.43	7.2877	.3030
Median		.00	.00	7.2400	.2700
Std. Deviation		.498	.495	.56777	.20272
Skewness		.207	.289	.452	.900
Std. Error of Skewness		.105	.105	.105	.105
Kurtosis		-1.964	-1.923	.200	.640
Std. Error of Kurtosis		.209	.209	.209	.209
Minimum		0	0	5.97	.00
Maximum		1	1	8.95	1.08

AP: Average annual share price; CP: Annual closing share price; ATMP: ATM-share price: Share price after a three-month period following the financial year-end; E: Earnings per share; BV: Book value per share; CF: Operating cash flows per share; FORN: Foreign ownership; TRDV: Trading volume; DTIM: financial Disclosure time; DLVL: financial Disclosure level; SHRHNO: Shareholders number; LSTUS: Listing status; AGE: Company age; TYIND: Type of industry; SIZE: Company's size (log of total assets); LEVRG: Company's leverage (debt to total asset ratio).

The descriptive statistics for study's institutional factors are shown in Table 4.14 Panel B. The mean of foreign ownership indicates that 84% of study's sample was included as companies having foreign ownership. Also, 45%, 68% and 45% of the companies in the sample have trading volume, shareholders number, and age respectively that are larger than their median numbers in the study companies' sample. The means of financial disclosure time and financial disclosure level indicate that 71% of the companies in the sample have submitted their reports within the allowed period while 53% of companies have complied with the disclosure requirements. The means of listing status and type of industry show that 58% of the companies in the sample were listed in the main board and 43% of the companies were in the services sector.

All variables show skewness and kurtosis values that are within ± 2 which ensure the normal distribution of study's variables. Earnings, book value, and cash flows show positive kurtosis values, all over zero, which indicates that their distribution is clustered in the center with long thin tails. Table 4.14 indicates that there is no violation from regression assumptions that could affect the analysis then the results.

Finally, the descriptive statistics flowchart is illustrated in Figure 4.9.

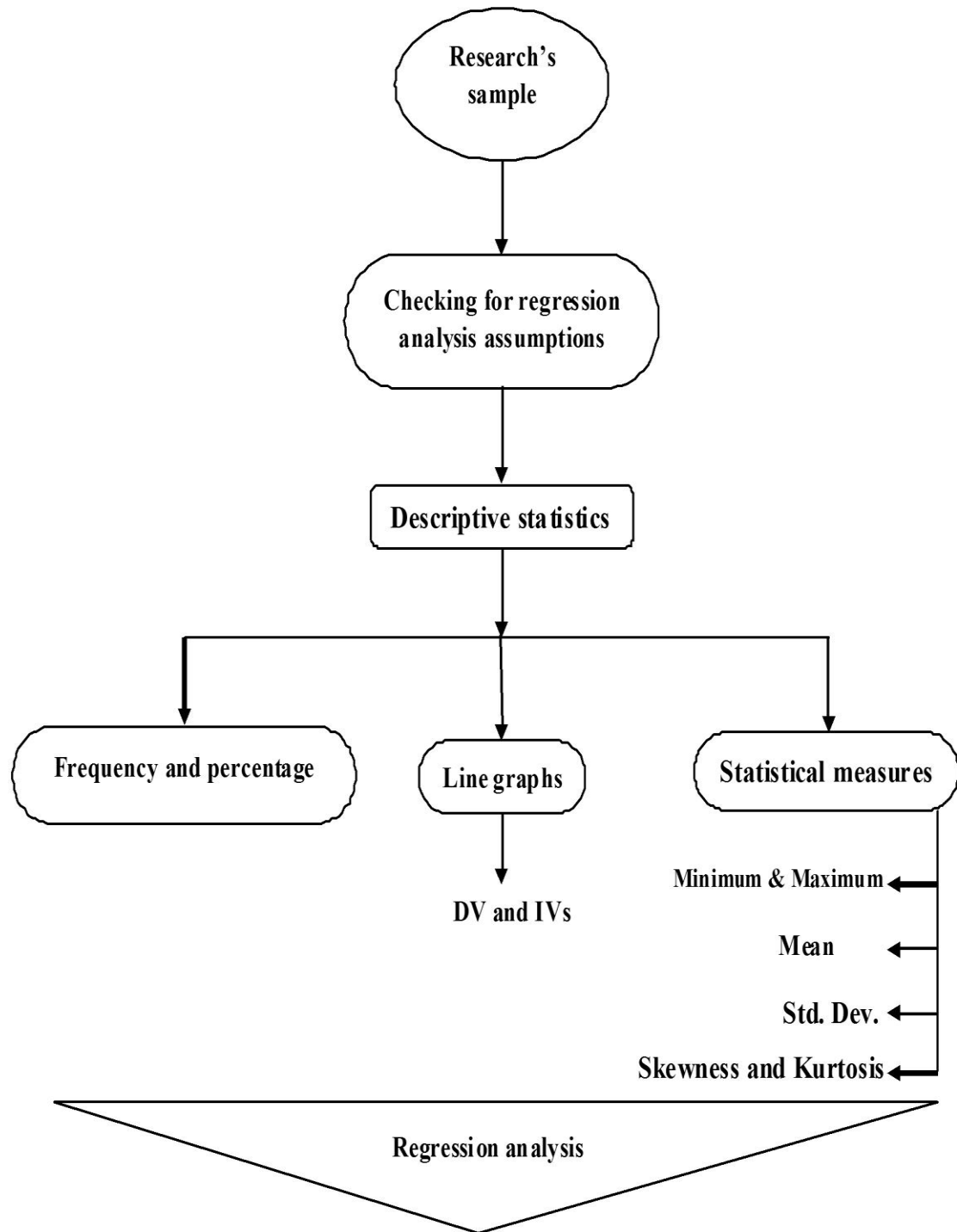


Figure 4.9
Descriptive Statistics Flowchart

4.4. Multiple regression analysis

The fifth main section in this chapter is the multiple regression analysis. The multiple regression analysis was used to test the relationship between the IVs and DVs of this study. As it was referred in chapter three, multiple linear regression is one of the most widely used statistical methods in value relevance studies.³⁰ It is used by data analysts in many fields of science and technology as well as in social sciences, economics, and finance (Hoerl and Kenner, 1970). Multiple linear regression tries to model the relationship between two or more IVs and a DV by fitting a linear equation and observing the data (McManus, 2009).

This study tests the relationships among its variables by using the standard (simultaneous) multiple regression analysis (please refer to section 3.7.3). This analysis is used to test which IV (among a set of IVs) is more important in explaining the variance in a DV (Pallant, 2007).

In standard regression, all of the research's variables are entered into the analysis and the effect of each IV on the DV is assessed after the variance from all other IVs had been accounted for. Each IV is evaluated in terms of what it added to the prediction of the DV as specified from the regression equation (McManus, 2009).

To complete the research's design steps as referred in the last chapter (section 3.4.2), the standard regression analysis was used to examine the study's hypotheses. The findings of

³⁰ Value relevance studies (Table 2.1) have used multiple regression analysis to conduct their results.

multiple regression analysis was extracted based on the influence of the institutional factors within the research's period and it appeared as statistics measures in model summary box (adjusted R^2), ANOV model (F statistic), and coefficients box (β and t -test) with p-values. The findings of the regression analysis are presented with and without control variables to indicate whether controlling company's size and leverage could affect the value relevance of the accounting information (earnings, book value, and cash flows). Finally, the findings of multiple regression analysis according to the research's hypotheses are presented in the following subsections.

4.4.1. Value relevance of earnings, book value, and cash flows: H1

Hypothesis (1) states that earnings have greater value relevance than book value and cash flows. Hypothesis (1) has been tested in the current study by the Equations 3-1a, 3-1b, 3-1c, 3-1d, 3-1e and 3-1f. Table 4.15 presents the regression results for the pooled sample with and without control variables relative to the three share price proxies.

According to average annual share price, annual closing price, and ATM-share price without control variables, the coefficients on earnings ($\beta_1 = 0.33, 0.36$ and 0.23 respectively), on book value ($\beta_2 = 0.47, 0.46$ and 0.52 respectively) and on cash flows ($\beta_3 = 0.08, 0.08$ and 0.11 respectively) are significant at 0.01 level for earning and book value and at 0.1 level or better for cash flows. The coefficients β_1, β_2 and β_3 demonstrate the value relevance of earnings, book value, and cash flows.

Table 4.15

The Value Relevance of Earnings, Book Value, and Cash Flows Relative to Share Price Proxies

$$P = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + e$$

$$P = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + \beta_4 SIZE + \beta_5 LEVRG + e$$

P proxy	AP		CP		ATMP	
Statistics	Without CVs	With CVs	Without CVs	With CVs	Without CVs	With CVs
β_1	0.33	0.32	0.36	0.35	0.23	0.21
t-test	6.07***	5.82***	6.88***	6.68***	4.08***	3.80***
β_2	0.47	0.45	0.46	0.45	0.52	0.48
t-test	8.92***	8.21***	9.03***	8.35***	9.56***	8.49***
β_3	0.08	0.06	0.08	0.07	0.11	0.09
t-test	1.72*	1.21	1.90*	1.55	2.37**	1.96*
β_4		0.11		0.07		0.19
t-test		2.60***		1.61		4.31***
β_5		0.02		0.01		-0.03
t-test		0.36		0.25		-0.70
Adj. R^2	0.61	0.62	0.64	0.64	0.58	0.61
F	145.06***	91.07***	164.21***	99.78***	129.44***	86.67***

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

P: Share price.

CVs: Control variables.

Other variables are defined before.

However, the results show that the accounting variables are value relevant according to the three share price proxies. Although the coefficients on earnings and book value are positive and significant, it is interesting to note the oscillating nature of the estimated coefficients on the variables over the six years of this study. Please refer to Appendix 8 (Panels A, B, C, D, E and F) for the yearly results. This is reflected by that when the coefficient on earnings declined, the response coefficient on book value increased and vice versa.

Hypothesis (1) states that the coefficient on earnings (β_1) is greater than that of book value and cash flows (β_2 and β_3), while the results show that the coefficient on book value

is the greatest. The coefficient on earnings is significant in the pooled sample and in six, five and two out of the six yearly regressions for average annual share price, annual closing share price, and ATM-share price respectively. The coefficient on book value is significant in the pooled sample and in the six yearly regressions for average annual share price and annual closing share price and in five out of the six yearly regressions for ATM-share price. The coefficient on cash flows is significant in the pooled sample (at 0.1 level) and in two out of the six yearly regressions for the three share price proxies.

For Jordanian companies, the share price response to earnings, book value, and cash flows is increased as it is reflected in the positive coefficients on these accounting variables. The yearly and pooled trend of the coefficients on the accounting variables is shown in Appendix (9). Table 4.15 shows that by including the control variables in the regression model, leads to stronger adjusted R^2 and the relative importance and significance of the coefficients remain the same for earnings and book value. Cash flows became insignificant for average annual share price and annual closing share price, while it became significant at 0.1 levels for ATM-share price. The increase in adjusted R^2 values is largely attributable to an increase in the effect of the control variable. The yearly and pooled trend R^2 is shown in Appendix (10). The significant F statistic indicates that the model as a whole is significant.

4.4.2. Value relevance influenced by economic factors: H2

The influence of economic factors (foreign ownership and trading volume) on the value relevance of earnings, book value, and cash flows is tested relative to the three share price proxies with and without control variables as follows.

1. Value relevance influenced by foreign ownership: H2-1

Hypothesis (2-1) states that the value relevance of the accounting information (earnings, book value, and cash flows) is greater for companies having foreign ownership. The influence of foreign ownership has been tested in the current study by the Equations 3-2-1a, 3-2-1b, 3-2-1c, 3-2-1d, 3-2-1e and 3-2-1f.

Table (4.16) presents the regression results for the pooled sample with and without the company's size and leverage as control variables relative to the three share price proxies. According to average annual share price, annual closing share price and ATM-share price without control variables, the coefficients on earnings ($\omega_2 = 0.46, 0.51$ and 0.35 respectively), on book value ($\omega_4 = 0.57, 0.58$ and 0.54 respectively), and on cash flows ($\omega_6 = 0.23, 0.28$ and 0.23 respectively) are significant at 0.01 level and demonstrate the value relevance of earnings, book value, and cash flows in the absence of the impact of the foreign ownership.

Table 4.16

The Influence of Foreign Ownership on the Value Relevance of Earnings, Book Value, and Cash Flows Relative to Share Price Proxies

$$P = \omega_0 + \omega_1 \text{ FORN} + \omega_2 E + \omega_3 E * \text{FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV} * \text{FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF} * \text{FORN} + e$$

$$P = \omega_0 + \omega_1 \text{ FORN} + \omega_2 E + \omega_3 E * \text{FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV} * \text{FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF} * \text{FORN} + \omega_8 \text{ SIZE} + \omega_9 \text{ LEVRG} + e$$

P proxy	AP		CP		ATMP	
Statistics	Without CVs	With CVs	Without CVs	With CVs	Without CVs	With CVs
ω_1	0.25	0.14	0.29	0.19	0.19	0.06
t-test	2.83***	1.49	3.29***	2.08**	2.15**	0.68
ω_2	0.46	0.41	0.51	0.48	0.35	0.29
t-test	10.22***	9.28***	11.93***	11.07***	7.29***	6.22***
ω_3	0.31	0.28	0.34	0.31	0.16	0.13
t-test	4.22***	3.83***	4.66***	4.31***	2.21**	1.76*
ω_4	0.57	0.58	0.58	0.59	0.54	0.53
t-test	15.47***	14.85***	15.65***	15.24***	14.19***	13.30***
ω_5	0.40	0.40	0.39	0.39	0.42	0.40
t-test	6.30***	6.28***	6.34***	6.22***	6.62***	6.28***
ω_6	0.23	0.24	0.28	0.29	0.23	0.23
t-test	4.93***	5.01***	6.04***	6.27***	4.87***	5.05***
ω_7	0.03	-0.01	0.05	0.02	0.09	0.06
t-test	0.47	-0.16	0.93	0.41	1.50	0.97
ω_8		0.08		0.03		0.17
t-test		1.82*		0.65		3.73***
ω_9		0.05		0.04		0.000
t-test		1.12		1.08		0.01
Adj. R^2	0.64	0.65	0.65	0.67	0.63	0.65
F	71.22***	56.94***	73.40***	57.57***	68.03***	55.65***

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

FORN: Foreign ownership.

Other variables are defined before.

However, according to average annual share price, annual closing share price and ATM-share price, the results show that the coefficients on foreign ownership ($\omega_1 = 0.25$, 0.29 and 0.19 respectively) are significant at 0.05 level or better. This demonstrates that foreign ownership is value relevant in its own right. Foreign ownership shows significant impact on the value relevance of earnings and book value. This is demonstrated by the significant coefficients on the earnings interaction variable ($\omega_3 = 0.31$, 0.34 and 0.16 significant at 0.05 level or better) and book value interaction variable ($\omega_5 = 0.40$, 0.39 and

0.42 significant at 0.01 level) for those share price proxies respectively. Foreign ownership shows insignificant impact on the value relevance of cash flows as it is reflected by the insignificant coefficient on the interaction term ($\omega_7 = 0.03, 0.05$ and 0.09) according to the three share price proxies respectively.

The sign of the coefficients on the interaction terms is consistent with Hypothesis 2-1 (a, b and c). Coefficients ω_3 , ω_5 (and ω_7 although it is insignificant) are positive, indicating an increase in the value relevance of the accounting information when foreign ownership is included. The coefficient on the interaction term for earnings is significant in the pooled sample and in two out of the six yearly regressions for average annual share price and annual closing share price, while it is significant in only one year for ATM-share price. The coefficient on the interaction term for book value is significant in the pooled sample and in the all yearly regressions for average annual share price and annual closing share price, while it is significant in five out of six yearly regressions for ATM-share price. The coefficient on the interaction term for cash flows is insignificant in the pooled sample and is significant in only one out of the six yearly regressions for the three share price proxies. Please refer to Appendix 11 (Panels A, B, C, D, E and F) for the yearly results.

The results of Table 4.16 show that for companies with foreign ownership, the share price response to earnings is increased, as reflected in the positive coefficient on the earnings interaction term (ω_3). The reaction of average annual share price, annual closing share

price, and ATM-share price to earnings increased from 0.46 (ω_2) to 0.77 ($\omega_2 + \omega_3$), 0.52 to 0.85 and from 0.35 to 0.51 respectively in the presence of foreign ownership. The share price response to book value is also increased, as reflected in the positive coefficient on the book value interaction term (ω_5). The reaction of those share price proxies to book value increased from 0.57 (ω_4) to 0.97 ($\omega_4 + \omega_5$), 0.58 to 0.97 and from 0.54 to 0.96 respectively in the presence of foreign ownership. The three share price proxies show no response to cash flows in the presence of foreign ownership, as reflected in the insignificant coefficients on cash flows interaction term (ω_7). The yearly and pooled trend of the coefficients on earnings, book value, and cash flows interaction terms relative to three share price proxies is shown in Appendix (12).

Table (4.16) shows that including company's size and leverage as control variables in the regression model leads to stronger model's adjusted R^2 and the relative importance and significance of the interaction terms remain the same (except that on earnings according to ATM-share price which became significant at 0.1 level). This increase in adjusted R^2 values is largely attributable to an increase in the effect of the control variable. The yearly and pooled trend R^2 is shown in Appendix (13). The significant F statistic indicates that the model as a whole is significant.

2. Value relevance influenced by trading volume: H2-2

Hypothesis (2-2) states that the value relevance of the accounting information (earnings, book value, and cash flows) is greater for companies having larger trading volume. The

influence of trading volume has been tested in the current study by the Equations 3-2-2a, 3-2-2b, 3-2-2c, 3-2-2d, 3-2-2e and 3-2-2f.

Table (4.17) presents the regression results for the pooled sample with and without control variables relative to the three share price proxies. According to average annual share price, annual closing share price, and ATM-share price without control variables, the coefficients on earnings ($\theta_2 = 0.46, 0.51$ and 0.35 respectively), on book value ($\theta_4 = 0.58, 0.58$ and 0.55 respectively), and on cash flows ($\theta_6 = 0.24, 0.29$ and 0.24 respectively) are significant at 0.01 level and demonstrate the value relevance of earnings, book value, and cash flows in the absence of the impact of the trading volume.

However, according to average annual share price, annual closing share price, and ATM-share price, the results show that the coefficients on trading volume ($\theta_1 = 0.19, 0.21$ and 0.11 respectively) are insignificant. This demonstrates that trading volume is irrelevant in its own right. Trading volume shows significant impact on the value relevance of earnings, and book value. This is demonstrated by the significant coefficients on earnings interaction terms ($\theta_3 = 0.28, 0.26$ and 0.19 significant at 0.1 level or better) and on book value interaction terms ($\theta_5 = 0.32, 0.32$ and 0.34 significant at 0.05 level or better) for those share price proxies. Trading volume has insignificant impact on the value relevance of cash flows as it is reflected by the insignificant coefficient on the interaction term ($\theta_7 = 0.02, 0.06$ and 0.10) according to those share price proxies respectively.

Table 4.17

The Influence of Trading Volume on the Value Relevance of Earnings, Book Value, and Cash Flows Relative to Share Price Proxies

$$P = \theta_0 + \theta_1 \text{TRDV} + \theta_2 E + \theta_3 E^* \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV}^* \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF}^* \text{TRDV} + e$$

$$P = \theta_0 + \theta_1 \text{TRDV} + \theta_2 E + \theta_3 E^* \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV}^* \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF}^* \text{TRDV} + \theta_8 \text{SIZE} + \theta_9 \text{LEVRG} + e$$

P proxy	AP		CP		ATMP	
Statistics	Without CVs	With CVs	Without CVs	With CVs	Without CVs	With CVs
θ_1	0.19	0.13	0.21	0.15	0.11	0.02
t-test	1.25	0.85	1.40	0.97	0.69	0.13
θ_2	0.46	0.41	0.51	0.48	0.35	0.29
t-test	10.23***	9.28***	11.92***	11.05***	7.34***	6.24***
θ_3	0.28	0.27	0.26	0.25	0.19	0.17
t-test	2.63***	2.55**	2.42**	2.33**	1.72*	1.60
θ_4	0.58	0.58	0.58	0.60	0.55	0.53
t-test	15.71***	15.09***	15.86***	15.44***	14.37***	13.41***
θ_5	0.32	0.27	0.32	0.27	0.34	0.27
t-test	3.71***	3.10***	3.68***	3.08***	3.84***	3.08***
θ_6	0.24	0.24	0.29	0.30	0.24	0.24
t-test	5.01***	5.08***	6.09***	6.32***	4.90***	5.07***
θ_7	0.02	-0.003	0.06	0.04	0.10	0.07
t-test	0.24	-0.05	0.88	0.57	1.36	0.99
θ_8		0.08		0.04		0.18
t-test		1.79*		0.79		3.97***
θ_9		0.05		0.04		-0.001
t-test		1.15		0.96		-0.03
Adj.R ²	0.64	0.65	0.67	0.67	0.63	0.65
F	49.35***	40.87***	48.34***	40.21***	45.78***	41.55***

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

TRDV: Trading volume.

Other variables are defined before.

The sign of the coefficients on the interaction terms is consistent with Hypothesis 2-2 (a, b and c). Coefficients θ_3 , θ_5 (and θ_7 although it is insignificant) are positive, indicating an increase in the value relevance of the accounting information when a company has larger trading volume. The coefficient on the interaction term for earnings is significant in the pooled sample and in two out of the six yearly regressions for average annual share price and annual closing share price, while it is significant in only one year for ATM-share price. The coefficient on the interaction term for book value is significant in the pooled

sample and in only one year out of the six yearly regressions for average annual share price and ATM-share price, while it is insignificant for all yearly regressions for annual closing share price. The coefficient on the interaction term for cash flows is insignificant in the pooled sample. It is significant in two out of the six yearly regressions for ATM-share price, while it is insignificant for the six yearly regressions for average annual share price and annual closing share price. Please refer to Appendix 14 (Panels A, B, C, D, E and F) for the yearly results.

The results of Table 4.17 show that for companies with larger trading volume, the share price response to earnings is increased, as reflected in the positive coefficient on the earnings interaction term (θ_3). The reaction of average annual share price, annual closing share price and ATM-share price to earnings increased from 0.46 (θ_2) to 0.74 ($\theta_2 + \theta_3$), 0.51 to 0.77 and from 0.35 to 0.54 respectively in the presence of trading volume. The share price response to book value is also increased, as reflected in the positive coefficient on the book value interaction term (θ_5). The reaction to book value increased from 0.58 (θ_4) to 0.90 ($\theta_4 + \theta_5$) for both average annual share price and annual closing share price and from 0.55 to 0.89 for ATM-share price in the presence of trading volume. The three share price proxies show no response to cash flows in the presence of trading volume, as reflected in the insignificant coefficients on the cash flows interaction term (θ_7). The yearly and pooled trend of the coefficients on earnings, book value, and cash flows interaction terms relative to three share price proxies is shown in Appendix (15).

Table (4.17) shows that including company's size and leverage as control variables in the regression model leads to stronger model's adjusted R^2 . The relative importance and significance of the interaction terms remain the same (except that on earnings according to ATM-share price which became insignificant). This increase in adjusted R^2 values is largely attributable to an increase in the effect of the control variable. The yearly and pooled trend R^2 is shown in Appendix (16). The significant F statistic indicates that the model as a whole is significant.

4.4.3. Value relevance influenced by corporate governance: H3

The influence of the corporate governance (financial disclosure time and financial disclosure level) on the value relevance of earnings, book value, and cash flows is tested relative to the three share price proxies with and without control variables as follows.

1. Value relevance influenced by financial disclosure time: H3-1

Hypothesis (3-1) states that the value relevance of the accounting information (earnings, book value, and cash flows) is greater for companies conforming to the financial disclosure time. The influence of financial disclosure time has been tested in the current study by the Equations 3-3-1a, 3-3-1b, 3-3-1c, 3-3-1d, 3-3-1e and 3-3-1f.

Table (4.18) presents the regression results for the pooled sample with and without control variables relative to the three share price proxies. According to average annual share price, annual closing share price and ATM-share price without control variables,

the coefficients on earnings ($\varphi_2 = 0.45, 0.50$ and 0.33 respectively), on book value ($\varphi_4 = 0.55, 0.58$ and 0.55 respectively), and on cash flows ($\varphi_6 = 0.23, 0.28$ and 0.23 respectively) are significant at 0.01 level and demonstrate the value relevance of earnings, book value, and cash flows in the absence of the impact of the financial disclosure time.

Table 4.18

The Influence of Financial Disclosure Time on the Value Relevance of Earnings, Book Value, and Cash Flows Relative to Share Price Proxies

$P = \varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 E + \varphi_3 E \cdot \text{DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV} \cdot \text{DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF} \cdot \text{DTIM} + e$						
$P = \varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 E + \varphi_3 E \cdot \text{DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV} \cdot \text{DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF} \cdot \text{DTIM} + \varphi_8 \text{SIZE} + \varphi_9 \text{LEVRG} + e$						
P proxy	AP		CP		ATMP	
Statistics	Without CVs	With CVs	Without CVs	With CVs	Without CVs	With CVs
φ_1	0.22	0.22	0.30	0.30	0.09	0.09
t-test	1.90*	1.96**	2.60***	2.65***	0.76	0.83
φ_2	0.45	0.41	0.50	0.47	0.33	0.28
t-test	9.93***	9.01***	11.66***	10.82***	6.95***	5.91***
φ_3	0.23	0.21	0.31	0.29	0.09	0.06
t-test	2.51**	2.33***	3.41***	3.26***	0.91	0.65
φ_4	0.55	0.58	0.58	0.59	0.55	0.53
t-test	14.35***	14.92***	15.82***	15.31***	14.35***	13.36***
φ_5	0.35	0.30	0.33	0.28	0.37	0.30
t-test	5.06***	4.35***	4.63***	4.01***	5.21***	4.34***
φ_6	0.23	0.24	0.28	0.29	0.23	0.23
t-test	4.94***	5.05***	6.09***	6.35***	4.90***	5.10***
φ_7	0.01	0.01	-0.02	-0.01	0.03	0.04
t-test	0.07	0.18	-0.26	-0.19	0.47	0.68
φ_8		0.09		0.04		0.17
t-test		2.11**		0.89		4.05***
φ_9		0.05		0.04		0.003
t-test		1.14		0.97		0.06
Adj. R^2	0.64	0.65	0.67	0.57	0.64	0.66
F	53.13***	46.20***	52.85***	43.73***	48.76***	46.39***

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

DTIM: Financial disclosure time.

Other variables are defined before.

The results of Table 4.18 show that the coefficients on financial disclosure time ($\phi_1 = 0.22$ and 0.30) for average annual share price and annual closing share price respectively are significant at 0.1 level or better, while it is insignificant for ATM-share price ($\phi_1 = 0.09$). For average annual share price and annual closing share price, this demonstrates that financial disclosure time is value relevant in its own right, while it is irrelevant according to ATM-share price.

The disclosure time shows significant impact on the value relevance of earnings. This is demonstrated by the significant coefficients on the interaction term ($\phi_3 = 0.23$ and 0.31 are significant at 0.05 level or better), while for ATM-share price, disclosure time shows insignificant impact on the value relevance of earnings as it is reflected by the insignificant coefficient on the interaction variable ($\phi_3 = 0.09$). This variable also shows significant impact on the value relevance of book value. This is demonstrated by the significant coefficients on the interaction term ($\phi_5 = 0.35, 0.33$ and 0.37 significant at 0.01 level) for average annual share price, annual closing share price, and ATM-share price respectively. Disclosure time shows insignificant impact on the value relevance of cash flows as it is demonstrated by the insignificant coefficient on the interaction term ($\phi_7 = 0.01, -0.02$ and 0.03) according to those share price proxies respectively.

The sign of the coefficients on the interaction terms is consistent with Hypothesis 3-1 (a, b and c). Coefficients ϕ_3, ϕ_5 (and ϕ_7 although it is insignificant) are positive, indicating

an increase in the value relevance of the accounting information when a company conforms to the financial disclosure time. The coefficient on the interaction term for earnings is significant in the pooled sample and in two out of the six yearly regressions for average annual share price, while it is significant in only one year for both annual closing share price and ATM-share price. The coefficient on the interaction term for book value is significant in the pooled sample and in four out of the six yearly regressions for average annual share price and ATM-share price, while it is significant in three out of the six yearly regressions for annual closing share price. The coefficients on the interaction term for cash flows are insignificant in both the pooled sample and the six yearly regressions. Please refer to Appendix 17 (Panels A, B, C, D, E and F) for the yearly results.

For companies that conform to the financial disclosure time, the share price response to earnings is increased, as reflected in the positive coefficient on the earnings interaction term (φ_3). With the impact of the financial disclosure time factor, the reaction to earnings increased from 0.45 (φ_2) to 0.68 ($\varphi_2 + \varphi_3$) for average annual share price, from 0.50 to 0.81 for annual closing share price and insignificantly from 0.33 to 0.42 for ATM-share price. The share price response to book value is also increased, as reflected in the positive coefficient on the book value interaction term (φ_5). The reaction of average annual share price, annual closing share price, and ATM-share price to book value increased from 0.55 (φ_4) to 0.90 ($\varphi_4 + \varphi_5$), 0.58 to 0.91 and from 0.55 to 0.92 respectively with the impact of this variable. The three share price proxies show no response to cash flows in the presence of the financial disclosure time variable as it is reflected in the insignificant

coefficients on the cash flows interaction term (ϕ_7). The yearly and pooled trend of the coefficients on earnings, book value, and cash flows interaction terms relative to three share price proxies is shown in Appendix (18).

Table (4.18) shows that including company's size and leverage as control variables in the regression model leads to stronger model's adjusted R^2 for both average annual share price, and ATM-share price but not for annual closing share price. The relative importance and significance of the interaction terms remain the same. This increase in adjusted R^2 values is largely attributable to an increase in the effect of the control variable. The yearly and pooled trend R^2 is shown in Appendix (19). The significant F statistic indicates that the model as a whole is significant.

2. Value relevance influenced by financial disclosure level: H3-2

Hypothesis (3-2) states that the value relevance of the accounting information (earnings, book value, and cash flows) is greater for companies that comply with disclosure requirements. The influence of financial disclosure level has been tested in the current study by the Equations 3-3-2a, 3-3-2b, 3-3-2c, 3-3-2d, 3-3-2e and 3-3-2f.

Table (4.19) presents the regression results for the pooled sample with and without control variables relative to the three share price proxies. According to average annual share price, annual closing share price, and ATM-share price without control variables, the coefficients on earnings ($\gamma_2 = 0.46, 0.51$ and 0.35 respectively), on book value ($\gamma_4 = 0.58,$

0.58 and 0.55 respectively) and on cash flows ($\gamma_6 = 0.23, 0.28$ and 0.23 respectively) are significant at 0.01 level and demonstrate the value relevance of earnings, book value, and cash flows in the absence of the impact of the financial disclosure level.

Table 4.19

The Influence of Financial Disclosure Level on the Value Relevance of Earnings, Book Value, and Cash Flows Relative to Share Price Proxies

$$P = \gamma_0 + \gamma_1 \text{DLVL} + \gamma_2 E + \gamma_3 E * \text{DLVL} + \gamma_4 \text{BV} + \gamma_5 \text{BV} * \text{DLVL} + \gamma_6 \text{CF} + \gamma_7 \text{CF} * \text{DLVL} + e$$

$$P = \gamma_0 + \gamma_1 \text{DLVL} + \gamma_2 E + \gamma_3 E * \text{DLVL} + \gamma_4 \text{BV} + \gamma_5 \text{BV} * \text{DLVL} + \gamma_6 \text{CF} + \gamma_7 \text{CF} * \text{DLVL} + \gamma_8 \text{SIZE} + \gamma_9 \text{LEVRG} + e$$

P proxy	AP		CP		ATMP	
Statistics	Without CVs	With CVs	Without CVs	With CVs	Without CVs	With CVs
γ_1	0.05	0.05	0.12	0.11	-0.05	-0.06
t-test	0.37	0.37	0.85	0.48	-0.35	-0.42
γ_2	0.46	0.41	0.51	0.48	0.35	0.29
t-test	10.22***	9.26***	11.91***	11.04***	7.29***	6.21***
γ_3	0.13	0.13	0.17	0.17	0.03	0.04
t-test	1.27	1.37	1.66*	1.75*	0.32	0.39
γ_4	0.58	0.58	0.58	0.59	0.55	0.53
t-test	15.61***	14.88***	15.79***	15.27***	14.27***	13.27***
γ_5	0.37	0.31	0.37	0.32	0.41	0.35
t-test	5.17***	4.43***	5.23***	4.56***	5.65***	4.92***
γ_6	0.23	0.24	0.28	0.30	0.23	0.24
t-test	4.95***	5.10***	6.05***	6.33***	4.88***	5.10***
γ_7	0.07	0.06	0.08	0.07	0.06	0.04
t-test	0.97	0.84	1.11	0.96	0.80	0.61
γ_8		0.08		0.03		0.17
t-test		1.80*		0.63		3.75***
γ_9		0.04		0.04		-0.002
t-test		1.01		0.69		-0.05
Adj. R^2	0.65	0.65	0.67	0.67	0.63	0.65
F	51.15***	46.14***	52.87***	46.13***	47.53***	45.45***

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

DLVL: Financial disclosure level.

Other variables are defined before.

However, according to average annual share price, annual closing share price, and ATM-share price, the results show that the coefficients on disclosure level ($\gamma_1 = 0.05, 0.12$ and -0.05 respectively) are insignificant. This demonstrates that disclosure level is irrelevant in

its own right. Regressing financial disclosure level on average annual share price and ATM-share price shows insignificant impact on the value relevance of earnings as it is reflected by the insignificant coefficients on the interaction variable ($\gamma_3 = 0.13$ and 0.03 respectively). Regressing financial disclosure level on annual closing share price shows significant impact on the value relevance of earnings. This is demonstrated by the significant coefficient on the interaction term ($\gamma_3 = 0.17$ significant at 0.1 level). This variable shows significant impact on the value relevance of book value. This is demonstrated by the significant coefficients on the interaction term ($\gamma_5 = 0.37, 0.37$ and 0.41 significant at 0.01 level). Financial disclosure level also shows insignificant impact on the value relevance of cash flows as it is reflected by the insignificant coefficients on the interaction term ($\gamma_7 = 0.07, 0.08$ and 0.06) for average annual share price, annual closing share price, and ATM-share price respectively.

The γ_3 and γ_7 are insignificant, indicating that financial disclosure level has no impact on the value relevance of earnings and cash flows, while γ_5 is positive and significant, indicating an increase in the value relevance of book value when companies comply with disclosure requirements. The coefficient on the interaction term for earnings is significant in the pooled sample for annual closing share price, while this coefficient is insignificant for both average annual share price and ATM-share price, indicating that there is no impact for the financial disclosure level on the value relevance of earnings. The coefficient on the interaction term for book value is significant in the pooled sample and in four out of the six yearly regressions for average annual share price and ATM-share price, while it is significant in three out of the six yearly regressions for annual closing

share price. The coefficient on the interaction term for cash flows is insignificant in the pooled sample and in the six yearly regressions for the three share price proxies. Please refer to Appendix 20 (Panels A, B, C, D, E and F) for the yearly results.

For companies that comply with disclosure requirements, the share price proxies (average annual share price and ATM-share price) show no response to earnings as it is reflected in the insignificant coefficient on the earnings interaction term (γ_3), while annual closing share price response to earnings is increased. The reaction to earnings increased from 0.51 (γ_2) to 0.68 ($\gamma_2 + \gamma_3$) in the presence of the impact of the financial disclosure level variable. The share price response to book value is increased as it is reflected in the positive coefficient on the book value interaction term (γ_5). According to average annual share price, annual closing share price, and ATM-share price, the reaction to book value increased from 0.58 (γ_4) to 0.95 ($\gamma_4 + \gamma_5$), 0.58 to 0.95 and from 0.55 to 0.91 respectively in the presence of the impact of the financial disclosure level variable. The three share price proxies show no response to cash flows in the presence of the financial disclosure level as it is reflected in the insignificant coefficient on the cash flows interaction term (γ_7). The yearly and pooled trend of the coefficients on earnings, book value, and cash flows interaction terms relative to three share price proxies is shown in Appendix (21).

Table (4.19) shows that including control variables in the regression model leads to stronger model's adjusted R^2 (relative to ATM-share price) and the relative importance and significance of the interaction terms remain the same. This increase in adjusted R^2

values is largely attributable to an increase in the effect of the control variable. The yearly and pooled trend R^2 is shown in Appendix (22). The significant F statistic indicates that the model as a whole is significant.

4.4.4. Value relevance influenced by company's characteristics: H4

The influence of the company's characteristics (shareholders number, listing status, and age) on the value relevance of earnings, book value, and cash flows is tested relative to the three share price proxies with and without control variables as follows.

1. Value relevance influenced by shareholders number: H4-1

Hypothesis (4-1) states that the value relevance of the accounting information (earnings, book value, and cash flows) is greater for companies having larger shareholders number. The influence of shareholders number has been tested in the current study by the Equations 3-4-1a, 3-4-1b, 3-4-1c, 3-4-1d, 3-4-1e and 3-4-1f.

Table (4.20) presents the regression results for the pooled sample with and without control variables relative to the three share price proxies. According to average annual share price, annual closing share price, and ATM-share price without control variables, the coefficients on earnings ($\delta_2 = 0.46, 0.51$ and 0.35 respectively), on book value ($\delta_4 = 0.58, 0.58$ and 0.55 respectively) and on cash flows ($\delta_6 = 0.24, 0.29$ and 0.23 respectively) are significant at 0.01 level and demonstrate the value relevance of earnings, book value, and cash flows in the absence of the impact of the shareholders number.

Table 4.20

The Influence of Shareholders Number on the Value Relevance of Earnings, Book Value, and Cash Flows Relative to Share Price Proxies

$$P = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 \text{BV} + \delta_5 \text{BV} * \text{SHRHNO} + \delta_6 \text{CF} + \delta_7 \text{CF} * \text{SHRHNO} + e$$

$$P = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 \text{BV} + \delta_5 \text{BV} * \text{SHRHNO} + \delta_6 \text{CF} + \delta_7 \text{CF} * \text{SHRHNO} + \delta_8 \text{SIZE} + \delta_9 \text{LEVRG} + e$$

P proxy	AP		CP		ATMP	
Statistics	Without CVs	With CVs	Without CVs	With CVs	Without CVs	With CVs
δ_1	0.36	0.27	0.41	0.33	0.30	0.33
t-test	3.02***	2.21**	3.43***	2.72***	2.47**	2.58***
δ_2	0.46	0.41	0.51	0.48	0.35	0.29
t-test	10.26***	9.27***	11.98***	11.09***	7.34***	6.22***
δ_3	0.44	0.40	0.48	0.44	0.32	0.41
t-test	4.85***	4.37***	5.24***	4.78***	3.44***	3.80***
δ_4	0.58	0.58	0.58	0.60	0.55	0.53
t-test	15.63***	14.94***	15.82***	15.35***	14.34***	13.36***
δ_5	0.34	0.34	0.32	0.30	0.36	0.38
t-test	4.51***	4.36***	4.20***	3.90***	4.57***	4.82***
δ_6	0.24	0.24	0.29	0.30	0.23	0.24
t-test	4.95***	5.04***	6.07***	6.32***	4.90***	5.09***
δ_7	0.05	0.02	0.05	0.04	0.07	0.06
t-test	0.71	0.31	0.83	0.57	1.15	0.92
δ_8		0.09		0.03		0.18
t-test		1.94*		0.65		3.88***
δ_9		0.05		0.04		-0.002
t-test		1.11		1.07		-0.06
Adj. R^2	0.64	0.65	0.67	0.67	0.63	0.65
F	58.72***	45.71***	59.25***	45.72***	52.52***	41.55***

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

SHRHNO: Shareholders number.

Other variables are defined before.

However, according to average annual share price, annual closing share price, and ATM-share price, the results show that the coefficients on shareholders number ($\delta_1 = 0.36, 0.41$ and 0.30 respectively) are significant at 0.05 level or better. This demonstrates that shareholders number is value relevant in its own right. Shareholders number variable shows significant impact on the value relevance of earnings. This is demonstrated by the significant coefficients on the interaction term ($\delta_3 = 0.44, 0.48$ and 0.32 respectively significant at 0.01 level). This factor shows significant impact on the value relevance of

book value. This is demonstrated by the significant coefficients on the interaction term ($\delta_5 = 0.34, 0.32$ and 0.36 respectively significant at 0.01 level). Shareholders number variable shows insignificant impact on the value relevance of cash flows as it is reflected by the insignificant coefficients on the interaction term ($\delta_7 = 0.05, 0.05$ and 0.07) for average annual share price, annual closing share price, and ATM-share price respectively.

The sign of the coefficients on the interaction terms is consistent with Hypothesis 4-1 (a, b and c). Coefficients δ_3, δ_5 (and δ_7 although it is insignificant) are positive, indicating an increase in the value relevance of the accounting information when a company has larger shareholders number. The coefficient on the interaction term for earnings is significant in the pooled sample and two out of the six yearly regressions for annual closing share price and ATM-share price and three out of the six yearly regressions for average annual share price. The coefficient on the interaction term for book value is significant in the pooled sample and for all yearly regressions for the three share price proxies. The coefficient on the interaction term for cash flows is insignificant in the pooled sample for the three share price proxies although it is significant in only one out of the six yearly regressions for annual closing share price. Please refer to Appendix 23 (Panels A, B, C, D, E and F) for the yearly results.

For companies with larger shareholders number, the share price response to earnings is increased, as reflected in the positive coefficient on the earnings interaction term (δ_3). The reaction of average annual share price, annual closing share price, and AT-share

price to earnings increased from 0.46 (δ_2) to 0.90 ($\delta_2 + \delta_3$), 0.51 to 0.99 and from 0.35 to 0.67 respectively in the presence of shareholders number variable.

The share price response to book value is also increased, as reflected in the positive coefficient on the book value interaction term (δ_5). The reaction of average annual share price, annual closing share price, and ATM-share price to book value increased from 0.58 (δ_4) to 0.92 ($\delta_4 + \delta_5$), 0.58 to 0.90 and from 0.55 to 0.91 respectively in the presence of the impact of the shareholders number variable. The three share price proxies show no response to cash flows in the presence of shareholders number, as reflected in the insignificant coefficients on the cash flows interaction term (δ_7). The yearly and pooled trend of the coefficients on earnings, book value, and cash flows interaction terms relative to three share price proxies is shown in Appendix (24).

Table (4.20) shows that including control variables in the regression model leads to stronger model's adjusted R^2 and the relative importance and significance of the interaction terms remain the same. This increase in adjusted R^2 values is largely attributable to an increase in the effect of the control variable. The yearly and pooled trend R^2 is shown in Appendix (25). The significant F statistic indicates that the model as a whole is significant.

2. Value relevance influenced by listing status: H4-2

Hypothesis (4-2) states that the value relevance of the accounting information (earnings, book value, and cash flows) is greater for companies listed in the main board. The influence of listing status has been tested in the current study by the Equations 3-4-2a, 3-4-2b, 3-4-2c, 3-4-2d, 3-4-2e and 3-4-2f.

Table (4.21) presents the regression results for the pooled sample with and without control variables relative to the three share price proxies. According to average annual share price, annual closing share price, and ATM-share price without control variables, the coefficients on earnings ($\phi_2 = 0.45, 0.51$ and 0.33 respectively), on book value ($\phi_4 = 0.57, 0.58$ and 0.54 respectively) and on cash flows ($\phi_6 = 0.24, 0.29$ and 0.24 respectively) are significant at 0.01 level and demonstrate the value relevance of earnings, book value, and cash flows in the absence of the impact of the listing status.

However, according to average annual share price, annual closing share price, and ATM-share price, the results show that the coefficients on listing status ($\phi_1 = 0.25, 0.34$ and 0.20 respectively) are significant at 0.1 level or better. This demonstrates that listing status is value relevant in its own right. Listing status variable shows significant impact on the value relevance of earnings. This is demonstrated by the significant coefficients on the interaction term ($\phi_3 = 0.26, 0.29$ and 0.17 significant at 0.1 level or better). This variable shows significant impact on the value relevance of book value. This is demonstrated by the significant coefficients on the interaction term ($\phi_5 = 0.32, 0.29$ and

0.33 significant at 0.01 level). Listing status variable shows insignificant impact on the value relevance of cash flows as it is reflected by the insignificant coefficients on the interaction term ($\phi_7 = -0.05, -0.01$ and -0.01) according to those share price proxies respectively.

Table 4.21

The Influence of Listing Status on the Value Relevance of Earnings, Book Value, and Cash Flows Relative to Share Price Proxies

$P = \phi_0 + \phi_1 \text{LSTUS} + \phi_2 E + \phi_3 E * \text{LSTUS} + \phi_4 \text{BV} + \phi_5 \text{BV} * \text{LSTUS} + \phi_6 \text{CF} + \phi_7 \text{CF} * \text{LSTUS} + e$						
$P = \phi_0 + \phi_1 \text{LSTUS} + \phi_2 E + \phi_3 E * \text{LSTUS} + \phi_4 \text{BV} + \phi_5 \text{BV} * \text{LSTUS} + \phi_6 \text{CF} + \phi_7 \text{CF} * \text{LSTUS} + \phi_8 \text{SIZE} + \phi_9 \text{LEVRG} + e$						
P proxy	AP		CP		ATMP	
Statistics	Without CVs	With CVs	Without CVs	With CVs	Without CVs	With CVs
ϕ_1	0.25	0.22	0.34	0.31	0.20	0.15
t-test	2.15**	1.84*	2.87***	2.60***	1.68*	1.23
ϕ_2	0.45	0.41	0.51	0.47	0.33	0.28
t-test	9.86***	9.04***	11.62***	10.87***	6.84***	5.90***
ϕ_3	0.26	0.24	0.29	0.27	0.17	0.14
t-test	3.03***	2.82***	3.32***	3.12***	1.95*	1.66*
ϕ_4	0.57	0.57	0.58	0.59	0.54	0.53
t-test	15.42***	14.80***	15.65***	15.21***	14.18***	13.28***
ϕ_5	0.32	0.28	0.29	0.25	0.33	0.28
t-test	4.53***	3.95***	4.05***	3.44***	4.46***	3.84***
ϕ_6	0.24	0.24	0.29	0.30	0.24	0.24
t-test	5.20***	5.21***	6.27***	6.44***	5.14***	5.25***
ϕ_7	-0.05	-0.05	-0.01	-0.01	-0.01	-0.02
t-test	-0.77	-0.77	-0.12	-0.10	-0.15	-0.25
ϕ_8		0.09		0.05		0.17
t-test		2.02**		1.07		3.97***
ϕ_9		0.05		0.04		0.000
t-test		1.16		0.97		0.000
Adj. R^2	0.64	0.65	0.66	0.67	0.63	0.65
F	54.89***	44.53***	53.40***	43.41***	50.32***	43.43***

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

LSTUS: Listing status.

Other variables are defined before.

The sign of the coefficients on the interaction terms is consistent with Hypothesis 4-2 (a, b and c). Coefficients ϕ_3, ϕ_5 are positive, indicating an increase in the value relevance of

the accounting information when a company is listed in the main board. The coefficient on the interaction term for earnings is significant in the pooled sample and in two out of the six yearly regressions for average annual share price and only in one out of the six yearly regressions for annual closing share price and ATM-share price. The coefficient on the interaction term for book value is significant in the pooled sample and in two out of the six yearly regressions for both average annual share price and annual closing share price and in three out of the six yearly regressions for ATM-share price. The coefficient on the interaction term for cash flows is insignificant in the pooled sample as well as in the yearly regressions for the three share price proxies. Please refer to Appendix 26 (Panels A, B, C, D, E and F) for the yearly results.

For companies listed in the main board, the share price response to earnings is increased, as reflected in the positive coefficient on the earnings interaction term (ϕ_3). According to average annual share price and annual closing share price, the reaction to earnings increased from 0.45 (ϕ_2) to 0.71 ($\phi_2 + \phi_3$), 0.51 to 0.80 and from 0.33 to 0.50 respectively in the presence of the listing status variable. The share price response to book value is also increased, as reflected in the positive coefficient on the book value interaction term (ϕ_5). The reaction of average annual share price, annual closing share price, and ATM-share price to book value increased from 0.57 (ϕ_4) to 0.89 ($\phi_4 + \phi_5$), 0.58 to 0.87 and from 0.54 to 0.87 respectively in the presence of the listing status variable. The three share price proxies show no response to cash flows in the presence of this variable as it is reflected in the insignificant coefficients on the cash flows interaction term (ϕ_7). The yearly and pooled trend of the coefficients on earnings, book value, and

cash flows interaction terms relative to three share price proxies is shown in Appendix (27).

Table (4.21) shows that including control variables in the regression model leads to stronger model's adjusted R^2 and the relative importance and significance of the interaction terms remain the same. This increase in adjusted R^2 values is largely attributable to an increase in the effect of the control variable. The yearly and pooled trend R^2 is shown in Appendix (28). The significant F statistic indicates that the model as a whole is significant.

3. Value relevance influenced by company's age: H4-3

Hypothesis (4-3) states that the value relevance of the accounting information (earnings, book value, and cash flows) is greater for companies that are older in age. The influence of company's age has been tested in the current study by the Equations 3-4-3a, 3-4-3b, 3-4-3c, 3-4-3d, 3-4-3e and 3-4-3f.

Table (4.22) presents the regression results for the pooled sample with and without control variables relative to the three share price proxies. According to average annual share price, annual closing share price, and ATM-share price without control variables, the coefficients on earnings ($\lambda_2 = 0.46, 0.51$ and 0.35 respectively), on book value ($\lambda_4 = 0.58, 0.58$ and 0.55 respectively) and on cash flows ($\lambda_6 = 0.24, 0.29$ and 0.23 respectively) are

significant at 0.01 level and demonstrate the value relevance of earnings, book value, and cash flows in the absence of the impact of the company's age.

Table 4.22

The Influence of Company's Age on the Value Relevance of Earnings, Book Value, and Cash Flows Relative to Share Price Proxies

$$P = \lambda_0 + \lambda_1 \text{ AGE} + \lambda_2 \text{ E} + \lambda_3 \text{ E*AGE} + \lambda_4 \text{ BV} + \lambda_5 \text{ BV*AGE} + \lambda_6 \text{ CF} + \lambda_7 \text{ CF*AGE} + e$$

$$P = \lambda_0 + \lambda_1 \text{ AGE} + \lambda_2 \text{ E} + \lambda_3 \text{ E*AGE} + \lambda_4 \text{ BV} + \lambda_5 \text{ BV*AGE} + \lambda_6 \text{ CF} + \lambda_7 \text{ CF*AGE} + \lambda_8 \text{ SIZE} + \lambda_9 \text{ LEVRG} + e$$

P proxy	AP		CP		ATMP	
Statistics	Without CVs	With CVs	Without CVs	With CVs	Without CVs	With CVs
λ_1	0.46	0.45	0.60	0.59	0.32	0.29
t-test	3.80***	3.74***	5.05***	5.01***	2.57**	2.41**
λ_2	0.46	0.41	0.51	0.47	0.35	0.29
t-test	10.25***	9.23***	11.97***	11.03***	7.31***	6.16***
λ_3	0.29	0.28	0.37	0.36	0.23	0.22
t-test	3.34***	3.26***	4.28***	4.21***	2.63***	2.53**
λ_4	0.58	0.58	0.58	0.59	0.55	0.53
t-test	15.61***	14.90***	15.80***	15.29***	14.30***	13.33***
λ_5	0.30	0.26	0.26	0.22	0.34	0.29
t-test	3.87***	3.26***	3.32***	2.80***	4.33***	3.68***
λ_6	0.24	0.24	0.29	0.29	0.23	0.24
t-test	4.92***	5.00***	6.03***	6.20***	4.86***	5.04***
λ_7	0.10	0.07	0.09	0.07	0.06	0.01
t-test	1.74*	1.19	1.61	1.22	1.08	0.22
λ_8		0.09		0.04		0.17
t-test		1.91*		0.97		3.82***
λ_9		0.04		0.04		-0.003
t-test		0.99		0.90		-0.08
Adj. R^2	0.65	0.65	0.67	0.70	0.63	0.65
F	65.12 ***	53.00 ***	70.61 ***	55.38***	61.67 ***	53.78***

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

AGE: Company's age.

Other variables are defined before.

However, according to average annual share price, annual closing share price, and ATM-share price, the results show that the coefficients on company's age ($\lambda_1 = 0.46, 0.60$ and 0.32 respectively) are significant at 0.05 level or better. This demonstrates that company's age is value relevant in its own right. Company's age shows significant

impact on the value relevance of earnings. This is demonstrated by the significant coefficients of the interaction term ($\lambda_3 = 0.29, 0.37$ and 0.23 significant at 0.05 level or better) for those share price proxies respectively. This variable shows significant impact on the value relevance of book value. This is demonstrated by the significant coefficients of the interaction term ($\lambda_5 = 0.30, 0.26$ and 0.34 significant at 0.01 level) for those share price proxies respectively. Company's age shows insignificant impact on the value relevance of cash flows as it is reflected by the insignificant coefficients on the interaction term ($\lambda_7 = 0.09$ and 0.06) for annual closing share price and ATM-share price while it is significant for average annual share price ($\lambda_7 = 0.10$ significant at 0.1 level).

The sign of the coefficients on the interaction terms is consistent with Hypothesis 4-3 (a, b and c). Coefficients λ_3, λ_5 (and λ_7 although it is insignificant except with average annual share price) are positive, indicating an increase in the value relevance of the accounting information when company's age variable is included. The coefficient on the interaction term for earnings is significant in the pooled sample and in two out of the six yearly regressions for average annual share price and ATM-share price and in three out of the six yearly regressions for annual closing share price. The coefficient on the interaction term for book value is significant in the pooled sample and in one, two and three out of the six yearly regressions for average annual share price, annual closing share price and ATM-share price respectively. The coefficient on the interaction term for cash flows is insignificant in the pooled sample for both annual closing share price and ATM-share price, while it is significant in the pooled sample supported by two out of the six yearly

regressions for average annual share price. Please refer to Appendix 29 (Panels A, B, C, D, E and F) for the yearly results.

For companies that are older in age, the share price response to earnings is increased, as reflected in the positive coefficients on the earnings interaction term (λ_3). The reaction of average annual share price, annual closing share price, and ATM-share price to earnings increased from 0.46 (λ_2) to 0.75 ($\lambda_2 + \lambda_3$), 0.51 to 0.88 and from 0.35 to 0.58 respectively in the presence of company's age variable. The share price response to book value is also increased, as reflected in the positive coefficient on the book value interaction term (λ_5). The reaction of those share price proxies to book value increased from 0.58 (λ_4) to 0.88 ($\lambda_4 + \lambda_5$), 0.58 to 0.84 and from 0.55 to 0.89 respectively in the presence of this variable. The annual closing share price and ATM-share price proxies show no response to cash flows in the presence of company's age as it is reflected by the insignificant coefficients on cash flows interaction term (λ_7), while average annual share price proxy shows a statistically weak significant response to cash flows in the presence of this factor ($\lambda_6 + \lambda_7 = 0.34$). The yearly and pooled trend of the coefficients on earnings, book value, and cash flows interaction terms relative to three share price proxies is shown in Appendix (30).

Table (4.22) shows that including control variables in the regression model leads to stronger model's adjusted R^2 and the relative importance and significance of the interaction terms remain the same except cash flows which became insignificant. This increase in adjusted R^2 values is largely attributable to an increase in the effect of the

control variable. The yearly and pooled trend R^2 is shown in Appendix (31). The significant F statistic indicates that the model as a whole is significant.

4.4.5. Value relevance influenced by type of industry: H5

Hypothesis (5) states that the value relevance of the accounting information (earnings, book value, and cash flows) is greater for services companies compared with that for industrial companies. The influence of type of industry has been tested in the current study by the Equations 3-5a, 3-5b, 3-5c, 3-5d, 3-5e and 3-5f.

Table (4.23) presents the regression results for the pooled sample with and without control variables relative to the three share price proxies. According to average annual share price, annual closing share price, and ATM-share price without control variables, the coefficients on earnings ($\mu_2 = 0.45, 0.51$ and 0.34 respectively), on book value ($\mu_4 = 0.58, 0.59$ and 0.55 respectively), and on cash flows ($\mu_6 = 0.24, 0.29$ and 0.24 respectively) are significant at 0.01 level and demonstrate the value relevance of earnings, book value, and cash flows in the absence of the impact of the type of industry.

However, according to average annual share price, annual closing share price, and ATM-share price, the results show that the coefficients on type of industry variable ($\mu_1 = 0.14, 0.20$ and -0.01 respectively) are insignificant. This demonstrates that type of industry factor is irrelevant in its own right. Type of industry shows significant impact on the value relevance of earnings only with annual closing share price proxy. This is

demonstrated by the significant coefficient on the interaction term ($\mu_3 = 0.18$ significant at 0.1 level) for this proxy.

Table 4.23

The Influence of Type of Industry on the Value Relevance of Earnings, Book Value, and Cash Flows Relative to Share Price Proxies

$$P = \mu_0 + \mu_1 \text{TYIND} + \mu_2 E + \mu_3 E*TYIND + \mu_4 BV + \mu_5 BV*TYIND + \mu_6 CF + \mu_7 CF*TYIND + e$$

$$P = \mu_0 + \mu_1 \text{TYIND} + \mu_2 E + \mu_3 E*TYIND + \mu_4 BV + \mu_5 BV*TYIND + \mu_6 CF + \mu_7 CF*TYIND + \mu_8 \text{SIZE} + \mu_9 \text{LEVRG} + e$$

P proxy	AP		CP		ATMP	
Statistics	Without CVs	With CVs	Without CVs	With CVs	Without CVs	With CVs
μ_1	0.14	0.10	0.20	0.16	-0.01	-0.07
t-test	1.05	0.74	1.43	1.17	-0.06	-0.51
μ_2	0.45	0.41	0.51	0.48	0.34	0.29
t-test	10.08***	9.19***	11.82***	10.99***	7.11***	6.09***
μ_3	0.14	0.15	0.18	0.18	-0.02	-0.01
t-test	1.41	1.55	1.77*	1.92*	-0.19	-0.11
μ_4	0.58	0.58	0.59	0.60	0.55	0.53
t-test	15.67***	15.00***	15.84***	15.37***	14.28***	13.37***
μ_5	0.25	0.23	0.26	0.24	0.28	0.26
t-test	2.89***	2.77***	2.95***	2.81***	3.20***	3.12***
μ_6	0.24	0.24	0.29	0.30	0.24	0.24
t-test	5.01***	5.03***	6.10***	6.29***	4.97***	5.08***
μ_7	0.03	0.06	0.03	0.06	0.07	0.11
t-test	0.44	0.88	0.47	0.92	1.04	1.53
μ_8		0.07		0.03		0.15
t-test		1.55		0.59		3.24***
μ_9		0.06		0.05		0.02
t-test		1.42		1.16		0.44
Adj. R^2	0.65	0.66	0.67	0.67	0.64	0.66
F	45.24 ***	42.00 ***	45.15 ***	41.03***	41.85***	40.85***

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

TYIND: Type of industry.

Other variables are defined before.

This factor shows significant impact on the value relevance of book value. This is demonstrated by the significant coefficients of the interaction term ($\mu_5 = 0.25, 0.26$ and 0.28 significant at 0.01 level). Type of industry variable shows insignificant impact on

the value relevance of cash flows as it is demonstrated by the insignificant coefficients on the interaction term ($\mu_7 = 0.03, 0.03$ and 0.07) for average annual share price, annual closing share price, and ATM-share price respectively.

The sign of the coefficients on the interaction terms is consistent with Hypotheses (5a, and b), while they are inconsistent with H5c. Coefficients μ_3, μ_5 (and μ_7 although it is insignificant) are positive for average annual share price and annual closing share price, indicating an increase in the value relevance of the accounting information for companies in services sector, while the negative sign on μ_3 with ATM-share price indicates that the value relevance of earnings declines when a company is in the services sector. The coefficient on the interaction term for earnings is significant in the pooled sample for annual closing share price, while it is insignificant for average annual share price and ATM-share price. The coefficient on the interaction term for book value is significant in the pooled sample and in only one out of the six yearly regressions for average annual share price and annual closing share price and in two out of the six yearly regressions for ATM-share price. The coefficient on the interaction term for cash flows is insignificant in the pooled sample and in the six yearly regressions for the three share price proxies. Please refer to Appendix 32 (Panels A, B, C, D, E and F) for the yearly results.

For companies in the services sector, the share price response to earnings is increased for annual closing share price as it is reflected in the positive coefficient on the earnings

interaction terms (μ_3). The reaction of annual closing share price to earnings increased from 0.51 (μ_2) to 0.69 ($\mu_2 + \mu_3$) in the presence of type of industry variable. The share price response to book value is also increased for the three share price proxies as it is reflected in the positive coefficient on the book value interaction term (μ_5). The reaction of average annual share price, annual closing share price, and ATM-share price to book value increased from 0.58 (μ_4) to 0.83 ($\mu_4 + \mu_5$), 0.59 to 0.85 and from 0.55 to 0.83 respectively in the presence of this variable. The three share price proxies show no response to cash flows in the presence of type of industry, as reflected in the insignificant coefficients on the cash flows interaction term (μ_7). The yearly and pooled trend of the coefficients on earnings, book value, and cash flows interaction terms relative to three share price proxies is shown in Appendix (33).

Table (4.23) shows that including control variables in the regression model lead to stronger model's adjusted R^2 and the relative importance and significance of the interaction terms remain the same. This increase in *adjusted R^2* values is largely attributable to an increase in the effect of the control variable. The yearly and pooled trend R^2 is shown in Appendix (34). The significant F statistic indicates that the model as a whole is significant.

4.4.6. Value relevance relative to share price proxies: H6

Hypothesis (6) states that the value relevance of the accounting information (earnings, book value, and cash flows) relative to annual closing share price is greater than that relative to average annual share price, and ATM-share price. The reactions of the share price proxies to these accounting variables have been concluded from the findings of the previous five hypotheses.

To well compare the power of the three share price proxies in reflecting the value relevance of the accounting information, the current study regressed earnings, book value, and cash flows on these proxies without/with the impact of the selected institutional factors (H1/H2, H3, H4 and H5 respectively). This is done to investigate whether there is a gap among the results relative to these share price proxies in Jordan.

As referred above, examining Hypothesis 6 is done by differentiating the results from testing the previous five hypotheses. A comparison among the results of the three share price proxies in terms of coefficients significance and models' adjusted R^2 is done to conduct the share price proxy that could be dependable in reflecting the value relevance of earnings, book value, and cash flows. Based on Tables 4.15, 4.16, 4.17, 4.18, 4.19, 4.20, 4.21, 4.22, and 4.23, Table 4.24 presents a summary for the results relative to these share price proxies.

Table 4.24*Summary of Pooled Regression Analysis Relative to Share Price Proxies*

Institutional Factors	Coef.	Pred.	AP		CP		ATMP		Adj. R^2 1 (AP) 2 (CP) 3 (ATMP)
	Symbol	Sign	Coef.	t-test	Coef.	t-test	Coef.	t-test	
H1:	β_1	+	0.33	6.07***	0.36	6.88***	0.23	4.08***	1(0.61)
E, BV and CF	β_2	+	0.47	8.92***	0.46	9.03***	0.52	9.56***	2(0.64)
	β_3	+	0.08	1.72*	0.08	1.90*	0.11	2.37**	3(0.58)
H2-1:	ω_3	+	0.31	4.22***	0.34	4.66***	0.16	2.21**	1(0.64)
FORN	ω_5	+	0.40	6.30***	0.39	6.34***	0.42	6.62***	2(0.65)
	ω_7	+	0.03	0.47	0.05	0.93	0.09	1.50	3(0.63)
H2-2:	θ_3	?	0.28	2.63***	0.26	2.42**	0.19	1.72*	1(0.64)
TRDV	θ_5	?	0.32	3.71***	0.32	3.68***	0.34	3.84***	2(0.67)
	θ_7	?	0.02	0.24	0.06	0.88	0.10	1.36	3(0.63)
H3-1:	φ_3	+	0.23	2.51**	0.31	3.41***	0.09	0.91	1(0.64)
DTIM	φ_5	+	0.35	5.06***	0.33	4.63***	0.37	5.21***	2(0.67)
	φ_7	+	0.01	0.07	-0.02	-0.26	0.03	0.47	3(0.64)
H3-2:	γ_3	+	0.13	1.27	0.17	1.66*	0.03	0.32	1(0.65)
DLVL	γ_5	+	0.37	5.17***	0.37	5.23***	0.41	5.65***	2(0.67)
	γ_7	+	0.07	0.97	0.08	1.11	0.06	0.80	3(0.63)
H4-1:	δ_3	+	0.44	4.85***	0.48	5.24***	0.32	3.44***	1(0.64)
SHRHNO	δ_5	+	0.34	4.51***	0.32	4.20***	0.31	4.57***	2(0.67)
	δ_7	+	0.05	0.71	0.05	0.83	0.07	1.15	3(0.63)
H4-2:	ϕ_3	+	0.26	3.03***	0.29	3.32***	0.17	1.95*	1(0.64)
LSTUS	ϕ_5	+	0.32	4.53***	0.29	4.05***	0.33	4.46***	2(0.66)
	ϕ_7	+	-0.05	-0.77	-0.01	-0.12	-0.01	-0.15	3(0.63)
H4-3:	λ_3	?	0.29	3.34***	0.37	4.28***	0.23	2.63***	1(0.65)
AGE	λ_5	?	0.30	3.87***	0.26	3.32***	0.34	4.33***	2(0.67)
	λ_7	?	0.10	1.74*	0.09	1.61	0.06	1.08	3(0.63)
H5:	μ_3	?	0.14	1.41	0.18	1.77*	-0.02	-0.19	1(0.65)
TYPIN	μ_5	?	0.25	2.89***	0.26	2.95***	0.28	3.20***	2(0.67)
	μ_7	?	0.03	0.44	0.03	0.47	0.07	1.04	3(0.64)

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

Other variables are defined before.

 β_1 , β_2 and β_3 : Coefficients (coef.) on earnings, book value, and cash flows respectively. ω_3 , ω_5 and ω_7 : Interaction coefficients of foreign ownership on earnings, book value, and cash flows respectively. θ_3 , θ_5 and θ_7 : Interaction coef. of trading volume on earnings, book value, and cash flows respectively. φ_3 , φ_5 and φ_7 : Interaction coef. of disclosure time on earnings, book value, and cash flows respectively. γ_3 , γ_5 and γ_7 : Interaction coef. of disclosure level on earnings, book value, and cash flows respectively. δ_3 , δ_5 and δ_7 : Interaction coef. of shareholders number on earnings, book value, and cash flows respectively. ϕ_3 , ϕ_5 and ϕ_7 : Interaction coef. of listing status on earnings, book value, and cash flows respectively. λ_3 , λ_5 and λ_7 : Interaction coef. of company's age on earnings, book value, and cash flows respectively. μ_3 , μ_5 and μ_7 : Interaction coef. of type of industry on earnings, book value, and cash flows respectively.

For Hypothesis (1), Table 4.24 indicates that there is no superiority among the three share price proxies in reflecting the value relevance of both earnings and book value, as the two are value relevant at 0.01 levels. Regarding cash flows, ATM-share price proxy shows the best results (significant at 0.05 levels), while it is significant at 0.1 level for both average annual share price and annual closing share price proxies. By including the interaction variables (H2, H3, H4 and H5), the three share price proxies are semi equal in their response to the interaction variables on book value. The response of annual closing share price to the interaction variables on earnings is more than that of average annual share price and ATM-share price proxies in terms of coefficients and significance levels. The three share price proxies show no response to cash flows when the impact of the study's institutional factors is involved.

According to the results of previous sections (4.4.1, 4.4.2, 4.4.3, 4.4.4 and 4.4.5), it is observed that the control variables lead to stronger model's adjusted R^2 and the relative importance and significance of the interaction terms remain the same. The significant F statistic indicates that the models as a whole are significant.

4.5. Summary

In this chapter, the research's sample including the research's technical records and observations' distribution for the research's raw data has been reported. To check the assumptions of the regression analysis, the pre-tests for the research's raw data and variables' quality (normality, linearity, homoscedasticity, correlation analysis, and

multicollinearity) have been applied. The descriptive statistics for the research's variables has been presented. The findings of the multiple regression analysis using SPSS have been provided. These findings are discussed in the next chapter.

CHAPTER FIVE

DISCUSSION

5.0. Introduction

The objective of this study is to detect the value relevance of the accounting information namely earnings, book value of equity, and cash flows from operation to indicate the firm value. The value relevance of these accounting variables influenced by four groups of institutional factors (economic, governance, company's characteristics and type of industry) has been investigated. Company's size and leverage are variables that have to be controlled for because they play a moderating role regarding the factors influencing the value relevance of the accounting information (Lang and Lundholm, 2000; Kothari, 2000). To test the impact of the selected institutional factors on the value relevance of the accounting information, the interaction variables; earnings * IF, book value * IF, and cash flows * IF (where IF is the institutional factor) have been included in the regression model.

In this chapter, the findings obtained from testing the study's six hypotheses in the last chapter are discussed from the practical perspective. This chapter includes eight sections. In addition to the introduction section, the first section discusses the findings from testing the value relevance of earnings, book value, and cash flows. This value relevance influenced by economic factors, corporate governance, company's characteristics, and type of industry are discussed in the second, third, fourth, and fifth sections respectively. A comparison among the response of the three share price proxies (average annual share price, annual closing share price, and ATM-share price) is made in the sixth section. The

effect of the control variables on study's results is discussed in the seventh section. Finally, the chapter ends with the summary of this chapter.

5.1. Value relevance of earnings, book value, and cash flows: H1

This study examined the value relevance of earnings, book value, and cash flows simultaneously to indicate which variable can be the best predictor for firm value in Jordan. Hypothesis (1) stated that the value relevance of earnings is greater than that of book value and cash flows in Jordanian companies ($H1: \beta_1 > \beta_2 \text{ and } \beta_3$). The value relevance of these accounting variables has been tested relative to the three share price proxies with and without control variables by Equations 3-1a, 3-1b, 3-1c, 3-1d, 3-1e and 3-1f. To be familiar with this section, please refer to section 4.4.1. Ohlson's valuation model regressed earnings and book value on share price. Khanagha et al. (2011) have adopted this model after including cash flows as a third accounting variable (Equation 3-1). From this equation, the coefficients on earnings, book value, and cash flows presented the value relevance of these accounting variables.

Results from testing Hypothesis (1) concluded that earnings, book value, and cash flows are value relevant relative to the three share price proxies. This is demonstrated by the significant positive coefficients on these variables ($\beta_1, \beta_2 \text{ and } \beta_3$), indicating an increase in the value relevance of these accounting variables. This result is consistent with the previous studies (Lev, 1989; Ou and Penman, 1989, 1993; Barth, 1991; Easton and Harris, 1991; Penman, 1991, 1996; Easton et al., 1992; Dechow, 1994; Ohlson, 1995; Feltham and Ohlson, 1995; Barth and Kallapur, 1996; Collins et al., 1997; Cheng et al.,

1997; Ely and Waymire, 1999; Easton, 1999; Alsalman, 2003; Whelan, 2004; Bao, 2004; Anandarajan et al., 2006; Vardavaki and Mylonakis, 2007; Vishnani and Shah, 2008).

This result is inconsistent with the study of Amir and Lev (1996).

From the perspective of the valuation theory and consistent with the guideline companies approach, Damodaran (1994, 1999, 2007) pointed to that gathering a series of market multiples, based on the availability of comparable firms and data can be applied to the similar financial data for the company. The results from testing H1 are for comparable companies with similar data and industry show that earnings, book value, and cash flows are value relevant. Also, based on valuation theory, the value of a firm can be expressed as a linear function of earnings, book value, and cash flows. This argument supported the significant positive coefficients on these accounting variables. From the perspective of the efficient market hypotheses (EMH), these results supported the fact that market efficiency will be referred to how these accounting variables can reflect the changes in share prices.

Table 4.15 implies that earnings are more value relevant than cash flows ($\beta_1 > \beta_3$). This result is consistent with the prior studies (Rayburn, 1986; Wilson, 1986, 1987; Bowen et al., 1986, 1987; Bernard and Stober, 1989; Livnat and Zarowin, 1990; Dechow, 1994; Biddle et al., 1995; Sloan, 1996; Dechow et al., 1998; Black, 1998; Barth, 2000; Landsman and Maydew, 2002; Hadi, 2005; Vélez-Pareja, 2005; Thinggaard and Damkier, 2008; Thi and Schultze, 2009; Khanagha et al., 2011).

Table 4.15 also shows that the value relevance of book value is greater than that of earnings and cash flows relative to these price proxies ($\beta_2 > \beta_1$ & β_3). This result is inconsistent with Khanagha et al. (2011), while it is consistent with other studies (Elliot and Hanna, 1996; Basu, 1997; Collins et al., 1997; Francis and Schipper, 1999; Jang et al., 2002; Whelan, 2004; Gee-Jung, 2009). This result is unexpected due to the fact that earnings represent the company's profitability which is the most important factor in determining the value of a stock in Jordan, and it is significantly associated with firm value. This unexpected result might be explained by that the reliance of the market has shifted away from earnings to book value (Barth et al., 1998; Collins et al., 1999; Whelan, 2004), or book values are considered to be the better proxy for future earnings (Collins et al., 1997), or this is just for the observed study's period, or due to the specific characteristics of Jordanian market. Finally, this result leads to reject Hypothesis (1).

5.2. Value relevance influenced by economic factors: H2

This study investigated whether the economic factors affected the value relevance of earnings, book value, and cash flows. The influence of foreign ownership and trading volume as the study's economic factors has been tested in order to capture the moderating effect of these factors on the value relevance of accounting variables in Jordan. This influence has been tested according to the three share price proxies with and without the control variables.

5.2.1. Value relevance influenced by foreign ownership: H2-1

This study hypothesized the influence of foreign ownership on the value relevance of earnings, book value, and cash flows as the value relevance of the accounting variables is greater for companies having foreign ownership (H2-1: $\omega_3 > 0$, $\omega_5 > 0$, $\omega_7 > 0$). This hypothesis was tested according to the three share price proxies. The influence of foreign ownership has been tested by Equations 3-2-1a, 3-2-1b, 3-2-1c, 3-2-1d, 3-2-1e and 3-2-1f. To be familiar with this section, please refer to section 4.4.2.

Results from testing Hypothesis (2-1) show that foreign ownership has a significant positive impact on the value relevance of earnings and book value. This is demonstrated by the significant positive coefficients on the interaction variables (ω_3 and ω_5), indicating an increase in the value relevance of earnings and book value for companies having foreign ownership. This result is as it was expected for the present study. The result on earnings is consistent with previous studies (Bae and Jeong, 2007; Anandarajan and Hasan, 2010) that have concluded a significant and positive impact for foreign ownership on the value relevance of earnings in Korea and Jordan respectively.

The positive and significant impact of foreign ownership on the value relevance of earnings and book value could be explained by foreign investment theory, which states that foreign ownership has a significant effect on firm value by improving its performance. Theoretically, increasing foreign investment share in a local economy requires relevant information that could fairly reflect the market performance. It is found that higher proportion of foreign ownership has positive association with company's

performance because it introduces advanced information technology and leads to company's greater economic efficiency (Claessens et al., 2001; Litan et al., 2001; Denizer, 2000; Okuda and Rungsomboon, 2004; Anandarajan and Hasan, 2010).

The results also show that foreign ownership has insignificant impact on the value relevance of cash flows. This is demonstrated by the insignificant coefficients on the interaction variable (ω_7). This result is unexpected and it might be explained by that the predictive ability of cash flows is lower than that of earnings and book value (Wilson, 1986; Dechow, 1994; Barth, 2000; Thi and Schultze, 2009), therefore, market participants rely more on earnings and book value than on cash flows. Also, this result might be because this variable is not a necessary figure for accounting principles to be based on (Hadi, 2005; Velez-Parega, 2005), thus affecting its value relevance.

While the influence of foreign ownership on the value relevance of earnings has been researched in prior studies, its influence on the value relevance of book value and cash flows has not been researched as far as the researcher is concerned. Therefore, a comparison between the study's results regarding book value and cash flows with any prior studies is unavailable.

Finally, Hypothesis (2-1) results show that the value relevance of earnings and book value relative to the three share price proxies is greater ($\omega_3 > 0$, $\omega_5 > 0$) for companies having foreign ownership in Jordan, while this factor has no significant impact on the value relevance of cash flows ($\omega_7 = 0$). Running joint F test and Cramer test, the results

shown in Appendix (35: Panel A) supported the t-test results. This result supports Hypothesis (2-1) for earnings and book value but not for cash flows.

5.2.2. Value relevance influenced by trading volume: H2-2

This study hypothesized the influence of trading volume on the value relevance of earnings, book value, and cash flows as the value relevance of the accounting variables is greater for companies having larger trading volume (H2-2: $\theta_3 > 0$, $\theta_5 > 0$, $\theta_7 > 0$). Also, this hypothesis is tested according to the three share price proxies. The influence of trading volume has been tested by Equations 3-2-2a, 3-2-2b, 3-2-2c, 3-2-2d, 3-2-2e and 3-2-2f. To be familiar with this section, please refer to section 4.4.2.

The results of Hypothesis (2-2) show that trading volume has a significant positive impact on the value relevance of earnings and book value. This is demonstrated by the significant positive coefficients on the interaction variables (θ_3 and θ_5), indicating an increase in their value relevance for companies with larger trading volume. For the present study, this result is inconsistent with the results of Dontoh et al. (2004) and Liu and Liu (2007).

Theoretically, since information event could increase trading volume and share number (Karpoff, 1986), this result might be explained by the trading volume theory, which states that trading volume is positively related to the price change (Clark, 1973; Epps and Epps, 1976; Tauchen and Pitts, 1983). The results from testing H2 are consistent with many

empirical evidences on the price changes to trading volume relationship and in turn to the value relevance of earnings and book value.

The results also show insignificant impact for trading volume on the value relevance of cash flows. This is reflected by the insignificant coefficients on the interaction variable, (θ_7) indicating that trading volume did not affect the value relevance of cash flows.

While the influence of trading volume on the value relevance of earnings and book value has been researched in prior studies, its influence on the value relevance of cash flows has not been researched as far as the researcher is concerned. Therefore, this study is unable to compare the results that are related to cash flows with any prior studies.

Actually, the results of Hypothesis (2-2) are inconsistent with the results of the previous studies. This inconsistency between the results might be explained by that; (1) share prices are led by FS information that captures the intrinsic share values toward which share prices drift. Then the value relevance would be represented by profits generated from executing accounting-based trading rules (Ou and Penman, 1989; Harris and Ohlson, 1990), (2) this may be just for the observed period (2004-2009) in ASE, (3) the trading volume has significant and positive effect on share price could be the real pattern or (4) adding cash flows as a new variable has changed the trend of the prior results. Therefore, future studies are called to extend the sample's size and period in order to investigate this extraordinary phenomenon and enrich the literature with more evidences about the impact of this factor on the value relevance of the accounting information.

Finally, the results of Hypothesis (2-2) show that the value relevance of earnings and book value relative to the three share price proxies is greater ($\theta_3 > 0$, $\theta_5 > 0$) for companies having larger trading volume, while this factor has no significant impact on the value relevance of cash flows ($\theta_7 = 0$). This leads to accept Hypothesis (2-2) for earnings and book value but not for cash flows.

5.3. Value relevance influenced by corporate governance: H3

This study examined whether the corporate governance affects the value relevance of earnings, book value, and cash flows. The influence of the financial disclosure time and financial disclosure level as the study's corporate governance factors has been examined in order to conduct the moderating effect of these factors on the value relevance of the accounting information in Jordan. This influence has been tested according to the three share price proxies with and without the control variables.

5.3.1. Value relevance influenced by financial disclosure time: H3-1

This study hypothesized the influence of the financial disclosure time on the value relevance of earnings, book value, and cash flows in Jordan as the value relevance is greater for companies conforming to the financial disclosure time (H3-1: $\phi_3 > 0$, $\phi_5 > 0$, $\phi_7 > 0$). The influence of this factor has been tested by Equations 3-3-1a, 3-3-1b, 3-3-1c, 3-3-1d, 3-3-1e and 3-3-1f. To be familiar with this section, please refer to section 4.4.3.

From the results of Hypothesis (3-1), ATM-share price proxy shows a significant impact on the value relevance of book value but not on that of earnings. This might be because earnings are mostly irrelevant noise or investors have fully anticipated earnings since their information has been impounded in share prices before releasing earnings, or it might be because earnings are perfectly predictable and there is no price response when they are announced (Francis and Schipper, 1999). The two share price proxies (average annual share price and annual closing share price) show significant impacts for the financial disclosure time factor on the value relevance of earnings and book value. This is demonstrated by the significant positive coefficients on the interaction variables (ϕ_3 and ϕ_5), indicating an increase in their value relevance for companies that conform to the financial disclosure time. This result is as it was expected and supports the fact that Jordanian investors focus mainly on financial reporting timeliness (Obaidat, 2007).

From the litigation cost hypothesis perspective, this result might be explained by the idea that receiving timely information by market participants could reduce information asymmetry. Hence, litigation cost plays an important role in improving the value relevance of the accounting information. So, managers attempt to clarify any misunderstanding by disclosing more information at a timely basis (Al Arussi, 2008; Al Arussi et al., 2009) which in turn improves the value relevance of accounting information.

The three share price proxies show insignificant impact for the financial disclosure time on the value relevance of cash flows. This is reflected by the insignificant coefficients on the interaction variable (ϕ_7), indicating that this factor has no impact on the value relevance of cash flows. The result is unexpected since this study expected an increase in the value relevance of cash flows in the presence of financial disclosure time effect. This result might indicate that cash flows are irrelevant for investors in making investment decisions (Khanagha, et al., 2011).

While a study on the direct impact of the financial disclosure time on the value relevance of earnings, book value, and cash flows has not been found in prior studies as far as the researcher is concerned, comparing the results with other studies is not feasible.

Finally, the results of Hypothesis (3-1) show that the value relevance is greater for companies conforming to the financial disclosure time for earnings ($\phi_3 > 0$) relative to average annual share price and annual closing share price proxies and for book value ($\phi_5 > 0$) relative to the three share price proxies, but it has no significant impact on the value relevance of cash flows ($\phi_7 = 0$). This result supports Hypothesis (3-1) for earnings and book value but not for cash flows.

5.3.2. Value relevance influenced by financial disclosure level: H3-2

This study hypothesized the influence of the financial disclosure level on the value relevance of earnings, book value, and cash flows in Jordan as the value relevance is

greater for companies complying with disclosure requirements (H3-2: $\gamma_3 > 0$, $\gamma_5 > 0$, $\gamma_7 > 0$). The influence of this factor has been tested by Equations 3-3-2a, 3-3-2b, 3-3-2c, 3-3-2d, 3-3-2e and 3-3-2f. To be familiar with this section, please refer to section 4.4.3.

From the results of Hypothesis (3-2), for average annual share price and ATM-share price, financial disclosure level factor shows insignificant impact on the value relevance of earnings. This is demonstrated by the insignificant coefficients on the interaction variable (γ_3). This result is inconsistent with Hassan (2004) and Anandarajan and Hasan (2010). Only with annual closing share price, this factor shows a marginally significant impact on the value relevance of earnings which is reflected by the weak coefficient and significance on the interaction variable (γ_3). The three share price proxies seem to be equal in reflecting significant impact of this factor on the value relevance of book value. This is reflected by the significant positive coefficients on the interaction variable (γ_5), indicating an increase in the value relevance of book value for companies complying with disclosure requirements. This result is consistent with that in Hassan (2004).

Also, with the three share price proxies, this factor shows insignificant impact on the value relevance of cash flows. This is demonstrated by the insignificant coefficients on the interaction variable (γ_7), indicating no impact for financial disclosure level on the value relevance of cash flows. While the influence of financial disclosure level on the value relevance of earnings and book value has been researched in prior studies, its influence on the value relevance of cash flows has not been researched as far as the

researcher is concerned. Therefore, this study is unable to compare the results related to cash flows with any prior studies.

The results for earnings and cash flows are unexpected. This might be explained by that investors might: (1) be interested with other sources in evaluating firm's performance; (2) be not worried about financial disclosure and (3) know nothing about the information since the disclosed one is too weak to draw any conclusion (Cormier and Magnan, 2007).

Theoretically, according to Kothari (2000), even though the disclosure is mandatory, the majority of firms provide less than full information (50%-99%). Based on interest-conflict, agency problems could influence accounting information that used to indicate firm value. This supported the suggestion derived from the agency theory that managers have to disclose sufficient information as a way to reduce the agency gap and to strengthen the market (Richardson and Welker, 2001; Debreceeny et al., 2002). Also, these unexpected results might be because Jordanian investors focus more on financial reporting timeliness than on disclosure level (Obaidat, 2007) or due to the specific characteristics of Jordanian accounting environment.

Finally, the results of Hypothesis (3-2) show that the value relevance of book value relative to the three share price proxies is greater ($\gamma_5 > 0$) for companies complying with disclosure requirements, while this factor has no significant impact on the value

relevance of earnings and cash flows ($\gamma_3 = 0$, $\gamma_7 = 0$). This leads to accept Hypothesis (3-2) for book value but not for earnings and cash flows.

5.4. Value relevance influenced by company's characteristics: H4

This study examined whether the company's characteristics affected the value relevance of earnings, book value, and cash flows. The influence of the company's shareholders number, listing status and age has been examined in order to conduct the moderating effect of these factors on the value relevance of the accounting information in Jordan. This influence has been tested according to the three share price proxies with and without the control variables.

5.4.1. Value relevance influenced by shareholders number: H4-1

This study hypothesized the influence of the shareholders number on the value relevance of earnings, book value, and cash flows in Jordan as the value relevance is greater for companies having larger shareholders number (H4-1: $\delta_3 > 0$, $\delta_5 > 0$, $\delta_7 > 0$). The influence of this factor has been tested by Equations 3-4-1a, 3-4-1b, 3-4-1c, 3-4-1d, 3-4-1e and 3-4-1f. To be familiar with this section, please refer to section 4.4.4.

The results of Hypothesis (4-1) show that shareholders number has a significant positive impact on the value relevance of earnings and book value relative to the share price proxies. This is demonstrated by the significant positive coefficients on the interaction variables (δ_3 and δ_5), indicating an increase in the value relevance of earnings and book value for companies having larger shareholders number. This result is as it was expected

for the present study. This result might be explained by that the extent in shareholders number is positively related to share price (Merton, 1987; Amihud et al., 1999) and in turn to the value relevance of the accounting information.

The positive and significant impact of shareholders number on the value relevance of earnings and book value might be explained from the shareholders theory perspective by that the main goal of a company is to increase shareholders interest. This can be done by increasing their shares value (Carrillo, 2007) and in turn the firm value. This can be explained by shareholders controlling that can directly or indirectly influence the managers' decisions (Deegan, 2002; Al Arussi, 2008). Managers have to follow the shareholders' demands (Ullmann, 1985) by disclosing relevant information. Shareholder theory directed managers to increase companies' share price. A company's share price might diverge from its intrinsic value due to instantaneously and continuously information communicated to the markets (Danielson et al., 2008).

The results also show that shareholders number has insignificant impact on the value relevance of cash flows relative to the three share price proxies. This is demonstrated by the insignificant coefficients on interaction variable (δ_7). This result is unexpected and it might be explained by that cash flows are not directly paid out as dividends and managers are allowed by shareholders to retain cash which might be misused in unprofitable or negative projects (Jensen and Meckling, 1976; Zeitun et al., 2007).

While the influence of shareholders number factor on the value relevance of earnings, book value, and cash flows has not been researched in prior studies, this study is unable to compare the results with any prior studies.

Finally, Hypothesis (4-1) results show that the value relevance of earnings and book value relative to the three share price proxies is greater ($\delta_3 > 0$, $\delta_5 > 0$) for companies having larger shareholders number in Jordan, while this factor has no significant impact on the value relevance of cash flows ($\delta_7 = 0$). This leads to accept Hypothesis (4-1) for earnings and book value but not for cash flows.

5.4.2. Value relevance influenced by listing status: H4-2

This study hypothesized the influence of the listing status on the value relevance of earnings, book value, and cash flows in Jordan as the value relevance is greater for companies listed in main board (H4-2: $\phi_3 > 0$, $\phi_5 > 0$, $\phi_7 > 0$). The influence of this factor has been tested by Equations 3-4-2a, 3-4-2b, 3-4-2c, 3-4-2d, 3-4-2e and 3-4-2f. To be familiar with this section, please refer to section 4.4.4.

The results of Hypothesis (4-2) show that listing status has a significant positive impact on the value relevance of earnings and book value according to the three share price proxies. This is demonstrated by the significant positive coefficients on the interaction variables (ϕ_3 and ϕ_5), indicating an increase in the value relevance of earnings and book value for companies listed in the main board. This result is as it was expected for the present study.

This result might be explained by that main board companies (1) have to disclose more financial information (Malone et al., 1993) which in turn decrease the asymmetric information that is considered as the major factor affecting the value relevance of accounting information, (2) are able to increase their shareholders number which has positively affected the share price appreciation (Amihud et al., 1999), and (3) competition is higher among the main board companies than that of second board which are of lower quality, liquidity, and volume of trading (Abdul Samad, 2002; How et al., 2007). This result is consistent with previous studies (Liu and Liu, 2007; Aba Ibrahim et al., 2009).

Theoretically, stock market is of benefit to market participants if it is informationally efficient. This benefit forms by the wealth allocation among firms that can be determined by share prices, which are influenced by the financial information (Kothari, 2001). The difference in results between main and second board companies is represented by testing H4-2. The result of this hypothesis might be explained by that companies' capital structure reflects the growth opportunities importance which affected the firm value. These opportunities are higher in main board companies, which try to capture more investment opportunities and enhance their profitability by disclosing more relevant information, than in second board (Abdul Samad, 2002; Al Arussi et al., 2009; Ahmed and Hisham, 2009).

The results also show that listing status has insignificant impact on the value relevance of cash flows relative to the three share price proxies. This is demonstrated by the insignificant coefficients on the interaction variable (ϕ_7). This result might be explained

by that Jordanian investors are concerned about how to gain quickly and they lack the awareness or understanding the relevant information available in FS (Obaidat, 2007).

While the influence of listing status on the value relevance of earnings and book value has been indirectly examined in prior studies, its influence on the value relevance of cash flows has not been tested. Therefore, a comparison with prior studies is unavailable.

Finally, Hypothesis (4-2) results show that the value relevance of earnings and book value relative to the three share price proxies is greater ($\phi_3 > 0$, $\phi_5 > 0$) for companies listed in ASE main board, while this factor has no significant impact on the value relevance of cash flows ($\phi_7 = 0$). Running joint F test and Cramer test, the results shown in Appendix (35: Panel B) supported Hypothesis (4-2) for earnings and book value but not for cash flows.

5.4.3. Value relevance influenced by company's age: H4-3

This study hypothesized the influence of the company's age on the value relevance of earnings, book value, and cash flows in Jordan as the value relevance is greater for companies that are older in age (H4-3: $\lambda_3 > 0$, $\lambda_5 > 0$, $\lambda_7 > 0$). The influence of this factor has been tested by Equations 3-4-3a, 3-4-3b, 3-4-3c, 3-4-3d, 3-4-3e and 3-4-3f. To be familiar with this section, please refer to section 4.4.4.

The results of Hypothesis (4-3) show that company's age has a significant positive impact on the value relevance of earnings and book value according to the three share price proxies. This is demonstrated by the significant positive coefficients on the interaction variables (λ_3 and λ_5), indicating an increase in the value relevance of earnings and book value for companies that are older in age. For earnings, this result is consistent with previous studies (Black, 1998; Aharony et al., 2006). According to firm life cycle theory which is related to the capital market operation efficiency, this result might be explained by that older companies re-invest too large percentage of their internal funds, while young companies invest at roughly the levels that maximize present values (Grabowski and Mueller, 1975).

The results also show that company's age has insignificant impact on the value relevance of cash flows relative to the average annual share price and ATM-share price proxies and a marginal significant impact relative to average annual share price. This is demonstrated by the insignificant coefficients on the interaction variable (λ_7). The insignificant result might be explained by that cash flow is not a necessary figure for accounting principles to be based on and it cannot limit the successfulness of company's performance (FAS 95, 1987; Vélez-Pareja, 2005). The unexpected result for cash flows is inconsistent with previous studies (Black, 1998; Aharony et al., 2006). This might be explained by that Jordanian investors focus more on earnings than cash flows (Hadi, 2005) or it might be related to the research sample or period.

While the influence of company's age factor on the value relevance of earnings and cash flows has been researched in prior studies, its influence on the value relevance of book value has not been researched as far as the researcher is concerned. Therefore, this study is unable to compare the results that are related to book value with any prior studies.

Finally, Hypothesis (4-3) results show that the value relevance of earnings and book value relative to the three share price proxies is greater ($\lambda_3 > 0$, $\lambda_5 > 0$) for companies that are older in age, while this factor has no significant impact on the value relevance of cash flows ($\lambda_7 = 0$). This leads to accept Hypothesis (4-3) for earnings and book value but not for cash flows.

5.5. Value relevance influenced by type of industry: H5

To investigate whether the type of industry can affect the value relevance of accounting information, the current study examined the influence of this factor on the value relevance of earnings, book value, and cash flows in order to capture its moderating effect on their value relevance in Jordan. This was done according to the three share price proxies with and without the control variables.

This study has hypothesized the influence of the type of industry on the value relevance of earnings, book value, and cash flows in Jordan as the value relevance is greater (H5: $\mu_3 > 0$, $\mu_5 > 0$, $\mu_7 > 0$) for services companies compared with that for industrial

companies. The influence of this factor has been tested by Equations 3-5a, 3-5b, 3-5c, 3-5d, 3-5e and 3-5f. To be familiar with this section, please refer to section 4.4.5.

From the results of Hypothesis (5), for annual average share price and ATM-share price, the type of industry factor shows insignificant impact on the value relevance of earnings. This is demonstrated by the insignificant coefficients on the interaction variable (μ_3). This result is inconsistent with previous studies (Harris et al., 1994; Ely and Waymire, 1999; Francis and schipper, 1999; Bao and Bao, 2001; Vardavaki and Mylonakis, 2007; Dastgir and Velashani, 2008; Oyeriend, 2009; Abayadeera, 2010a, 2010b), while it is consistent with the other studies (Amir and Lev, 1996; Gee-Jung, 2009). Only with annual closing share price, this factor shows a marginally significant impact on the value relevance of earnings, which is reflected by the weak coefficient and significance on the interaction variable (μ_3).

The three share price proxies seem to be equal in reflecting significant impact of the type of industry on the value relevance of book value. This is reflected by the significant positive coefficients on the interaction variable (μ_5), indicating an increase in the value relevance of book value for the services companies. This result is consistent with previous studies (Ely and Waymire, 1999; Dastgir and Velashani, 2008; Gee-Jung, 2009; Abayadeera, 2010a, 2010b), while it is inconsistent with the study of Amir and Lev (1996).

Also, with the three share price proxies, the type of industry shows insignificant impact on the value relevance of cash flows. This is demonstrated by the insignificant coefficients on the interaction variable (μ_7), indicating no impact for this factor on the value relevance of cash flows. This result is inconsistent with previous studies (Black, 1998; Aharony et al., 2006; Gee-Jung, 2009), while it is consistent with other studies (Livnat and Zarowin, 1990).

Since the current study expected that the type of industry will influence the value relevance of the accounting information, the results for earnings and cash flows are unexpected. This result might be explained by that regardless to the type of industry, ordanian investors direct their investments relying on brokers (Obaidat, 2007) who might not be able to fully extract the relevant information (Francis and Schipper, 1999).

In consistent with business entity approach that is used to classify firms based on their economic activities types (Holmes and Stevens, 2004; Oliveira et al., 2007a, 2007b) and with reference to the general theory underlying this study, another explanation for this unexpected result might be that the reliability of earnings is reduced by the adjustments via abnormal and extraordinary items. Lack of reliability resulted in the absence of value-relevance of earnings (Whelan, 2004).

Finally, the results of Hypothesis (5) show that the value relevance of book value relative to the three share price proxies is greater ($\mu_5 > 0$) for services companies, while this factor has no significant impact on the value relevance of earnings (except with annual

closing share price) and cash flows. In accordance to Lymer (1997), this result might be related to the characteristics of each industry where services companies have more growth, competition, and then risks than industrial companies. This leads the former to disclose relative information to reflect the variance in their share prices (Dye and Sridhar, 1995). Running joint F test and Cramer test, the results shown in Appendix (35: Panel C) supports the t-test results. This result supports Hypothesis (5) for book value but not for earnings and cash flows.

5.6. Value relevance relative to share price proxies: H6

The current study has regressed earnings, book value, and cash flows on three share price proxies namely average annual share price, annual closing share price, and ATM-share price to find whether there is a gap between the results according to these proxies in Jordan. While the current study expected that annual closing share price could be the best among these proxies in reflecting the value relevance of the accounting information, Hypothesis (6) was stated as the value relevance relative to annual closing share price is greater than that relative to average annual share price and ATM-share price. A comparison among share price proxies is presented in Table 4.24. The results of this table have been extracted from sections 4.5.1, 4.5.2, 4.5.3, 4.5.4 and 4.5.5.

Table 4.24 (last chapter) indicates that the adjusted R^2 s for annual closing share price proxy are slightly larger than that for average annual share price and ATM-share price proxies, although the same sample was used for each share price proxy. This gives a

similar impression of the usefulness of accounting information among the three share price proxies.

The results of Hypothesis (1) indicated no superiority among the three share price proxies in reflecting the value relevance of the accounting information in terms of coefficients and significance levels. When the interaction variables are included (H2, H3, H4 and H5), the three share price proxies responded similarly to the interaction variables on book value. The response of annual closing share price to the interaction variables on earnings is more than that of average annual share price and ATM-share price proxies in terms of coefficients and significance levels.

While the value relevance of earnings, book value, and cash flows has been widely researched relative to different share price proxies in prior studies (please refer to Table 3-2), a study on the superiority among share price proxies has not been well researched before in literature as far as the researcher is concerned. Therefore, a comparison with previous studies is not available.

The study depends on Table 4.24 to evaluate how share price proxies respond to earnings, book value, and cash flows. The study reviews the results relative to the coefficients significance and models' adjusted R^2 to indicate which share price proxy could be more dependable in indicating the value relevance of earnings, book value, and cash flows in Jordan.

In terms of coefficients significance, average annual share price proxy shows totally 18 out of 27 coefficients are significant (66.7 %) and 16 out of them (55.5%) are significant at 0.05 (study's significance) levels or better. Closing annual share price proxy shows totally 19 out of 27 coefficients are significant (70.4 %) and 16 out of them (55.5%) are significant at 0.05 levels or better. ATM-share price proxy shows totally 16 out of 27 coefficients are significant (59.3 %) and 14 out of them (52%) are significant at 0.05 levels or better.

According to the accounting information, 77.8 %, 100 % and 66.7 % of the coefficients on earnings appear significant regarding average annual share price, closing annual share price, and ATM-share price proxies respectively. This result might be explained by that events could affect the variance in share price after the end of the reporting period, while this effect will not be reflected in earnings (Klimczak, 2008). The three share price proxies show 100 % significant coefficients on book value. This result might be explained by that market participants turn their attention towards book value away from earnings (Barth et al., 1998). While 22.2 % of the coefficients on cash flows appear significant relative to average annual share price, 11.11 % of them are significant regarding closing annual share price and ATM-share price proxies. This low percentage might be due to missing data after transformation process, or it might be related to the research sample and period.

In terms of models' adjusted R^2 , closing share price proxy in all models records the highest adjusted R^2 values among the three proxies followed by average annual share

price then ATM-share price. Generally, from the aforementioned debate, closing annual share price proxy is considered to be more dependable in detecting the value relevance of the accounting information in Jordan since it shows the best results among the three share price proxies in terms of coefficients significance and models' adjusted R^2 . Therefore, Hypothesis (6) is accepted.

5.7. Control variables

For the all institutional factors of this study, company's size is strongly (weakly) significant by its own right relative to ATM-share price (average annual share price) proxy, while it is not relative to annual closing share price proxy as it is reflected by the coefficients on this variable. Also, company's leverage is insignificant by its own right relative to the three share price proxies as it is reflected by the insignificant coefficients on this variable.

Based on the findings from testing Hypothesis (1), it is observed that including company's size and leverage in the regression equation increased the model's adjusted R^2 , while a decrease in the value relevance of the accounting information has been found. The decline in the value relevance might be explained by that price regression model may not be well specified due to the problems related to company's size (Deng and Lev, 1998). This is consistent with the findings of prior studies (Collins et al., 1997; Francis and Schipper, 1999; Whelan, 2004).

From testing H2, H3, H4 and H5 it is clear that, although model's adjusted R^2 is increased, including company's size and leverage in the regression equations decrease the coefficients on the interaction variables, indicating a decrease in the value relevance of the accounting information influenced by the selected institutional factors. This is consistent with the results of prior studies (Francis and Schipper, 1999; Whelan, 2004; Anandarajan and Hasan, 2010).

5.8. Summary

In this chapter, the findings have been discussed from testing the value relevance of earnings, book value, and cash flows relative to three share price proxies namely average annual share price, annual closing share price and ATM-share price and influenced by foreign ownership, trading volume, financial disclosure time and financial disclosure level, shareholders number, listing status, company's age and type of industry after controlling company's size and leverage. Table 5.1 summarizes the findings of the hypotheses tests using the coefficients estimated from the pooled regression models.

Table 5.1
Summary of Findings

Hypotheses	Findings	Earnings	Book value	Cash flows
H1: $\beta_1 > \beta_2$ and β_3	H1a: $\beta_2 > \beta_1, \beta_2 > \beta_3$ H1b: $\beta_2 > \beta_1, \beta_2 > \beta_3$ H1c: $\beta_2 > \beta_1, \beta_2 > \beta_3$		Rejected	
H2-1: $\omega_3 > 0$	H2-1a: $\omega_3 > 0, \omega_5 > 0, \omega_7 = 0$	Accepted	Accepted	Rejected
$\omega_5 > 0$	H2-1b: $\omega_3 > 0, \omega_5 > 0, \omega_7 = 0$	Accepted	Accepted	Rejected
$\omega_7 > 0$	H2-1c: $\omega_3 > 0, \omega_5 > 0, \omega_7 = 0$	Accepted	Accepted	Rejected
H2-2: $\theta_3 > 0$	H2-2a: $\theta_3 > 0, \theta_5 > 0, \theta_7 = 0$	Accepted	Accepted	Rejected
$\theta_5 > 0$	H2-2b: $\theta_3 > 0, \theta_5 > 0, \theta_7 = 0$	Accepted	Accepted	Rejected
$\theta_7 > 0$	H2-2c: $\theta_3 > 0, \theta_5 > 0, \theta_7 = 0$	Accepted	Accepted	Rejected
H3-1: $\varphi_3 > 0$	H3-1a: $\varphi_3 > 0, \varphi_5 > 0, \varphi_7 = 0$	Accepted	Accepted	Rejected
$\varphi_5 > 0$	H3-1b: $\varphi_3 > 0, \varphi_5 > 0, \varphi_7 = 0$	Accepted	Accepted	Rejected
$\varphi_7 > 0$	H3-1c: $\varphi_3 = 0, \varphi_5 > 0, \varphi_7 = 0$	Rejected	Accepted	Rejected
H3-2: $\gamma_3 > 0$	H3-2a: $\gamma_3 = 0, \gamma_5 > 0, \gamma_7 = 0$	Rejected	Accepted	Rejected
$\gamma_5 > 0$	H3-2b: $\gamma_3 > 0, \gamma_5 > 0, \gamma_7 = 0$	Accepted	Accepted	Rejected
$\gamma_7 > 0$	H3-2c: $\gamma_3 = 0, \gamma_5 > 0, \gamma_7 = 0$	Rejected	Accepted	Rejected
H4-1: $\delta_3 > 0$	H4-1a: $\delta_3 > 0, \delta_5 > 0, \delta_7 = 0$	Accepted	Accepted	Rejected
$\delta_5 > 0$	H4-1b: $\delta_3 > 0, \delta_5 > 0, \delta_7 = 0$	Accepted	Accepted	Rejected
$\delta_7 > 0$	H4-1c: $\delta_3 > 0, \delta_5 > 0, \delta_7 = 0$	Accepted	Accepted	Rejected
H4-2: $\phi_3 > 0$	H4-2a: $\phi_3 > 0, \phi_5 > 0, \phi_7 = 0$	Accepted	Accepted	Rejected
$\phi_5 > 0$	H4-2b: $\phi_3 > 0, \phi_5 > 0, \phi_7 = 0$	Accepted	Accepted	Rejected
$\phi_7 > 0$	H4-2c: $\phi_3 > 0, \phi_5 > 0, \phi_7 = 0$	Accepted	Accepted	Rejected
H4-3: $\lambda_3 > 0$	H4-3a: $\lambda_3 > 0, \lambda_5 > 0, \lambda_7 = 0$	Accepted	Accepted	Rejected
$\lambda_5 > 0$	H4-3b: $\lambda_3 > 0, \lambda_5 > 0, \lambda_7 = 0$	Accepted	Accepted	Rejected
$\lambda_7 > 0$	H4-3c: $\lambda_3 > 0, \lambda_5 > 0, \lambda_7 = 0$	Accepted	Accepted	Rejected
H5: $\mu_3 > 0$	H5a: $\mu_3 = 0, \mu_5 > 0, \mu_7 = 0$	Rejected	Accepted	Rejected
$\mu_5 > 0$	H5b: $\mu_3 > 0, \mu_5 > 0, \mu_7 = 0$	Accepted	Accepted	Rejected
$\mu_7 > 0$	H5c: $\mu_3 = 0, \mu_5 > 0, \mu_7 = 0$	Rejected	Accepted	Rejected
H6	H6		Accepted	

Notes:

β_1, β_2 and β_3 : Coefficients (coef.) on earnings, book value, and cash flows respectively.

ω_3, ω_5 and ω_7 : Interaction coef. of foreign ownership on earnings, book value, and cash flows respectively.

θ_3, θ_5 and θ_7 : Interaction coef. of trading volume on earnings, book value, and cash flows respectively.

φ_3, φ_5 and φ_7 : Interaction coef. of disclosure time on earnings, book value, and cash flows respectively.

γ_3, γ_5 and γ_7 : Interaction coef. of disclosure level on earnings, book value, and cash flows respectively.

δ_3, δ_5 and δ_7 : Interaction coef. of shareholders number on earnings, book value, and cash flows respectively.

ϕ_3, ϕ_5 and ϕ_7 : Interaction coef. of listing status on earnings, book value, and cash flows respectively.

λ_3, λ_5 and λ_7 : Interaction coef. of company's age on earnings, book value, and cash flows respectively.

μ_3, μ_5 and μ_7 : Interaction coef. of type of industry on earnings, book value, and cash flows respectively.

CHAPTER SIX

CONCLUSIONS, CONTRIBUTIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

6.0. Introduction

The last chapter in this dissertation presents the conclusions, contributions, limitations, and suggestions for the future research.

6.1. Conclusions

The purpose of this dissertation was to provide evidence concerning the value relevance of earnings, book value, and cash flows relative to three share price proxies namely average annual share price, annual closing share price, and ATM-share price. The value relevance of those accounting variables simultaneously was determined with and without the influence of four selected groups of institutional factors (economic factors, corporate governance, company's characteristics and type of industry).

For this purpose, six questions have been stated including; which variable among earnings, book value, and cash flows is the best predictor for firm value in Jordan and whether the selected eight institutional factors (foreign ownership, trading volume, financial disclosure time and financial disclosure level, shareholders number, listing status, company's age, and type of industry) influence the value relevance of the

accounting information in Jordan. A theoretical framework and six hypotheses have been developed to answer the study's questions.

According to the three share price proxies (DVs), whether earnings have greater value relevance than book value and cash flow was formulated in Hypothesis (1), while the influence of the selected institutional factors on the value relevance of the accounting variables was formulated in Hypothesis 2, 3, 4 and 5. Finally, whether the value relevance of the accounting information relative to annual closing price is greater than that relative to average annual share price and ATM-share price was formulated in Hypothesis (6).

The study's sample was the Jordanian companies listed in ASE. Companies in the financial, insurance, and banking industries have been excluded because they are governed by other specific regulations. The study covers the period from 2004 to 2009 inclusive. The research's data has been collected from the annual financial reports of the selected companies and Amman Stock Exchange Information Center (ASEIC). The collected data was analyzed using SPSS techniques. Multiple regression models have been used to examine the research's IVs and DVs relationships. Following prior research (Easton and Harris, 1991; Dechow, 1994; Sloan, 1996; Whelan, 2004), the value-relevance of the accounting variables has been measured by examining the significance of the response coefficients on these variables in a regression against share price proxies.

Hypothesis (1) has predicted that the value relevance of earnings relative to the three share price proxies is greater than that of book value and cash flows. Based on the study's results and relative to the three share price proxies, the findings revealed that book value has more significant and positive coefficients than earnings and cash flows (please refer to Tables 4.15 and 5.1 and Appendix 8; panels A, B, C, D, E and F). So, the study concluded that the value relevance of book value is greater than that of earnings and cash flows, and it could be the best predictor for firm value in Jordan (please refer to sections 4.4.1 and 5.1). Therefore H1a, H1b, and H1c have been rejected.

Hypothesis (2-1) has predicted that the value relevance of earnings, book value, and cash flows relative to the three share price proxies is greater for companies having foreign ownership. The findings showed that foreign ownership has a significant and positive impact on the value relevance of earnings and book value but not on cash flows relative to the three share price proxies (please refer to Tables 4.16 and 5.1 and Appendix 11; panels A, B, C, D, E and F). So, the study inferred that the value relevance of earnings and book value (but not cash flows) is greater for Jordanian companies having foreign ownership (please refer to sections 4.4.2. and 5.2.1). Therefore H2-1a, H2-1b, and H2-1c have been accepted for earnings and book value but not for cash flows.

Hypothesis (2-2) has predicted that the value relevance of earnings, book value, and cash flows relative to the three share price proxies is greater for companies having larger trading volume. The findings showed that trading volume has a significant and positive

impact on the value relevance of earnings and book value but not on cash flows relative to the three share price proxies (please refer to Tables 4.17 and 5.1 and Appendix 14; panels A, B, C, D, E and F). So, the study indicated that the value relevance of earnings and book value (but not cash flows) is greater for Jordanian companies having larger trading volume (please refer to sections 4.4.2 and 5.2.2). Therefore H2-2a, H2-2b, and H2-2c have been accepted for earnings and book value but not for cash flows.

Hypothesis (3-1) has predicted that the value relevance of earnings, book value, and cash flows relative to the three share price proxies is greater for companies conforming to the financial disclosure time. The findings showed that financial disclosure time has a significant and positive impact on the value relevance of earnings relative to average annual share price and annual closing share price proxies and on the value relevance of book value relative to the three share price proxies, while it has insignificant impact on the value relevance of cash flows (please refer to Tables 4.18 and 5.1 and Appendix 17; panels A, B, C, D, E and F). So, the study deduced that the value relevance of earnings and book value (but not cash flows) is greater for Jordanian companies conforming to the financial disclosure time (please refer to sections 4.4.3 and 5.3.1). Therefore H3-1a and H3-1b have been accepted for earnings and book value but not for cash flows, while H3-1c has been accepted only for book value.

Hypothesis (3-2) has predicted that the value relevance of earnings, book value, and cash flows relative to the three share price proxies is greater for companies complying with

disclosure requirements. The findings proved that financial disclosure level has a significant and positive impact on the value relevance of book value relative to the three share price proxies and on the value relevance of earnings relative to annual closing share price, while it has insignificant impact on the value relevance of earnings relative to annual average share price and ATM-share price. This factor has insignificant impact on the value relevance of cash flows relative to the three share price proxies (please refer to Tables 4.19 and 5.1 and Appendix 20; panels A, B, C, D, E and F). So, the study concluded that the value relevance of book value is greater for Jordanian companies complying with disclosure requirements relative to the three share price proxies (please refer to sections 4.4.3 and 5.3.2). Therefore H3-2a and H3-2c have been accepted only for book value, while H3-2b has been accepted for earnings and book value but not for cash flows.

Hypothesis (4-1) predicted that the value relevance of earnings, book value, and cash flows relative to the three share price proxies is greater for companies having larger shareholders number. The findings made out that the shareholder number has a significant and positive impact on the value relevance of earnings and book value but not on cash flows relative to the three share price proxies (please refer to Tables 4.20 and 5.1 and Appendix 23; panels A, B, C, D, E and F). So, the study concluded that the value relevance of earnings and book value (but not cash flows) is greater for Jordanian companies having larger shareholders number (please refer to sections 4.4.4 and 5.4.1). Therefore H4-1a, H4-1b, and H4-1c have been accepted for earnings and book value but not for cash flows.

Hypothesis (4-2) predicted that the value relevance of earnings, book value, and cash flows relative to the three share price proxies is greater for companies listed in the main board. The findings extracted that the listing status has a significant and positive impact on the value relevance of earnings and book value but not on cash flows relative to the three share price proxies (please refer to Tables 4.21 and 5.1 and Appendix 26; panels A, B, C, D, E and F). So, the study concluded that the value relevance of earnings and book value (but not cash flows) is greater for Jordanian companies listed in the main board (please refer to sections 4.4.4 and 5.4.2). Therefore H4-2a, H4-2b, and H4-2c have been accepted for earnings and book value but not for cash flows.

Hypothesis (4-3) predicted that the value relevance of earnings, book value, and cash flows relative to the three share price proxies is greater for companies that are older in age. The findings showed that the company's age has a significant and positive impact on the value relevance of earnings and book value but not on cash flows relative to the three share price proxies (please refer to Tables 4.22 and 4.1 and Appendix 29; panels A, B, C, D, E and F). So, the study concluded that the value relevance of earnings and book value (but not cash flows) is greater for Jordanian companies that are older in age (please refer to sections 4.4.4 and 5.4.3). Therefore H4-3a, H3-4b and H3-4c have been accepted for earnings and book value but not for cash flows.

Hypothesis (5) has predicted that the value relevance of earnings, book value, and cash flows relative to the three share price proxies is greater for services companies compared

with that for industrial companies. The findings conducted that type of industry has a significant and positive impact on the value relevance of book value relative to the three share price proxies and on the value relevance of earnings relative to annual closing share price. This factor has insignificant impact on the value relevance of earnings relative to annual average share price and ATM-share price and on the value relevance of cash flows relative to the three share price proxies (please refer to Tables 4.23 and 5.1 and Appendix 32; panels A, B, C, D, E and F). So, the study concluded that the value relevance of book value relative to the three share price proxies and that of earnings relative to annual closing share price are greater for services companies compared with that for industrial companies (please refer to sections 4.4.5 and 5.5). Therefore H5a and H5c have been accepted only for book value, while H5b has been accepted for book value and earnings but not for cash flows.

Hypothesis (6) has predicted that the value relevance relative to annual closing share price is greater than that relative to average annual share price and ATM-share price. The findings of Hypothesis (1) showed no superiority among the three share price proxies in reflecting the value relevance of both earnings and book value, while ATM-share price proxy showed the best results regarding cash flows. H2, H3, H4, and H5 showed that the three share price proxies are semi equal in their response to the interaction variables on book value, while the response of annual closing share price to the interaction variables on earnings is more than that of average annual share price and ATM-share price proxies in terms of coefficients and significance levels. The three share price proxies in general showed insignificant response to cash flows (please refer to Tables 4.24 and 5.1). So, the

study concluded that annual closing share price proxy could be dependable in detecting the value relevance of the accounting information. Therefore, Hypothesis (6) has been accepted.

6.2. Contributions

The current study offers many practical contributions to market participants including investors, managers, and financial analysts in addition to its contributions to the academia and regulatory bodies. These contributions are presented in the following subsections.

6.2.1. Practical contributions

Managers, who prepare company's financial statements as a primary source of accounting information for investors and other financial statements users, are well informed regarding the company's activities and performance. Since managers are motivated by their incentive and self-interest, preparing financial statements will be affected. This may provide asymmetric information and mislead financial statements users. The results of this study assist investors to (1) better understand company's real financial position by manipulating the asymmetric information and (2) improve the control of managers' performance results which will be considered in making investment decisions.

The findings of this study revealed that earnings, book value, and cash flows are value relevant and they have significant positive coefficients with the three share price proxies.

This implies the potential valuation error relative to fixation on earnings. The findings also demonstrate that there is a shift away from earnings towards book value as the basis for firm valuation.

The widely used valuation model is employed to determine the value relevance of accounting information, primarily earnings and book value. One major implication of the current study is extending the valuation model by including cash flows since limited studies investigated the value relevance of this variable together with earnings and book value.

Furthermore, while many studies focus on examining the value relevance of earnings and book value, the present study examined the moderating effect of economic, governance, firm's characteristics, and type of industry factors on the value relevance of the accounting information.

The current study's contribution is in providing evidence about the influence of the four groups of institutional factors on the value relevance of the accounting information. Based on the findings of this study, market participants might be able to conclude the firm value through the company's foreign ownership, trading volume, financial disclosure time and financial disclosure level, shareholders number, listing status, age, and type of industry.

Using data from Jordan in the current study contributes to the valuation literature. Having similar findings with that from prior research using data from US, UK and other developed countries shows the ability of these findings to be generalized to different markets.

6.2.2. Contributions to regulatory bodies

The results of the current study furnish insight to the regulatory bodies such as ASE and JSC who have been entrusted with monitoring the process of financial reporting. The need to monitor the process of financial reporting is acknowledged by legislations. Therefore, it is necessary for regulators to employ their enforcement power to realize better obedience of firm's management and then improve the monitoring on financial reporting process.

This study provides empirical evidence about the indirect impact of the selected institutional factors on the market. Accordingly, it presents support for future regulator activity that tends to effectively monitor management in order to enhance the complimentary of the reporting process. This will improve the market participants' ability to make their right decisions about market distribution.

6.2.3. Contributions to academia

Since regulators, standard setter, and other market's participants focus on firm value, its complementation into the academia is necessary. Analyzing the financial statements is an essential component of accounting courses. The findings of the present study are relevant for the courses, such as financial statements analysis and accounting valuation theory and practice.

Corporate failure and collapses have led to include the corporate governance as an essential subject in courses that object to the financial statements valuation. This mentions to the possible lack of reliability of the accounting information and then the possible lack in their value relevance. Therefore, taking into consideration the influence of different institutional factors on the value relevance of accounting information will be of interest in financial statements analysis and valuation.

The models that were developed in the current study present a tool for indicating whether or not firm value can be predicted from its accounting information, what institutional factors could more influence this prediction, and which share price proxy is the more dependable in value relevance models. This could be useful as a primary tool to assess the financial statements completeness.

In financial statements analysis courses, valuation model mainly focused on earnings. The current study presents further evidence of the importance of book value. This accounting variable shows significant and positive relationships with the three share price

proxies, indicating a significant link between the accounting information integrity and the information usefulness to market participants.

6.3. Limitations of this study

This dissertation has faced many limitations. These limitations are in selecting and excluding firms according to their industries, registration date, and sample size.

The current study attempted to include only companies with available data for the selected six years (2004-2009). The small size and observations of the current study is due to that (1) some companies that are registered before 2004 were dropped from the analysis due to missing data (outliers), (2) many new companies with complete data which are supposed to be the target of this study have been excluded due to their recent registration date (registered after 2004) and (3) companies that are listed in banking, insurance, and financial industries have been excluded.

Sample size is an important concern related to the validity of the statistical results which might represent the actual relationships between the dependent and independent variables. The problem of the small sample size and observations has been addressed in this study by pooling the data to evaluate the results.

However, as long as this research employed precision analyses to accomplish its objectives, the above limitations do not underestimate its value and the usefulness and importance of this study is not questionable.

6.4. Suggestions for future research

While this research examines the value relevance of the accounting information with and without the influence of the selected institutional factors to enable Jordanian investors and other market participants to better indicate the firm value, future research has to be extended to measure the impact of many and other different institutional factors on the value relevance of accounting information. This may provide new insights of the possible factors that could influence the value relevance of accounting information.

For the previously mentioned reasons, the period of the current study was limited by the data from six years. So, future research may use a longer period to see its impact on the value relevance of accounting information.

While sample size is a main concern in the results validity, future studies may use a larger sample size to investigate whether this factor may moderate the value relevance of accounting information.

Future studies are also invited to examine the value relevance of the accounting information in a comparison with that from across countries in Middle East or with other regions. This may provide the generalizability of the results of the value relevance.

Future studies may use data from other international stock exchanges to provide insight into market reactions to earnings, book value, and cash flows with and without the influence of the institutional factors on firm valuation. Also, future research is called to examine the value relevance of the accounting information influenced by the institutional factors in pre and post to the adoption of IFRSs in Jordan.

In addition to price models, return models might be used in future research to compare the value relevance of accounting information conducted from the two models especially in Jordan.

Future research is encouraged to develop a new valuation method to detect the firm value, such as developing a new financial statement including new items such as ratios extracted from statements of financial position, income statement, and statement of cash flows that enable FS user groups to directly evaluate the firm value based on these items.

6.5. Summary

The chapter discussed the major conclusions, contributions, limitations of this study, and the suggestion for future research. The study links the earnings, book value, and cash flows with many institutional factors by demonstrating the impact of these factors on the value relevance of the accounting variables. This chapter discussed the findings of these links according to the results from testing the study's hypotheses.

The research contributions are presented in terms of practical, regulatory bodies, and academia. A further contribution of this study is the development of a model to determine the impact of the selected institutional factors on the value relevance of the accounting information to conclude the differential impacts of these factors. The results demonstrate a greater impact on the value relevance of earnings and book value but not cash flows.

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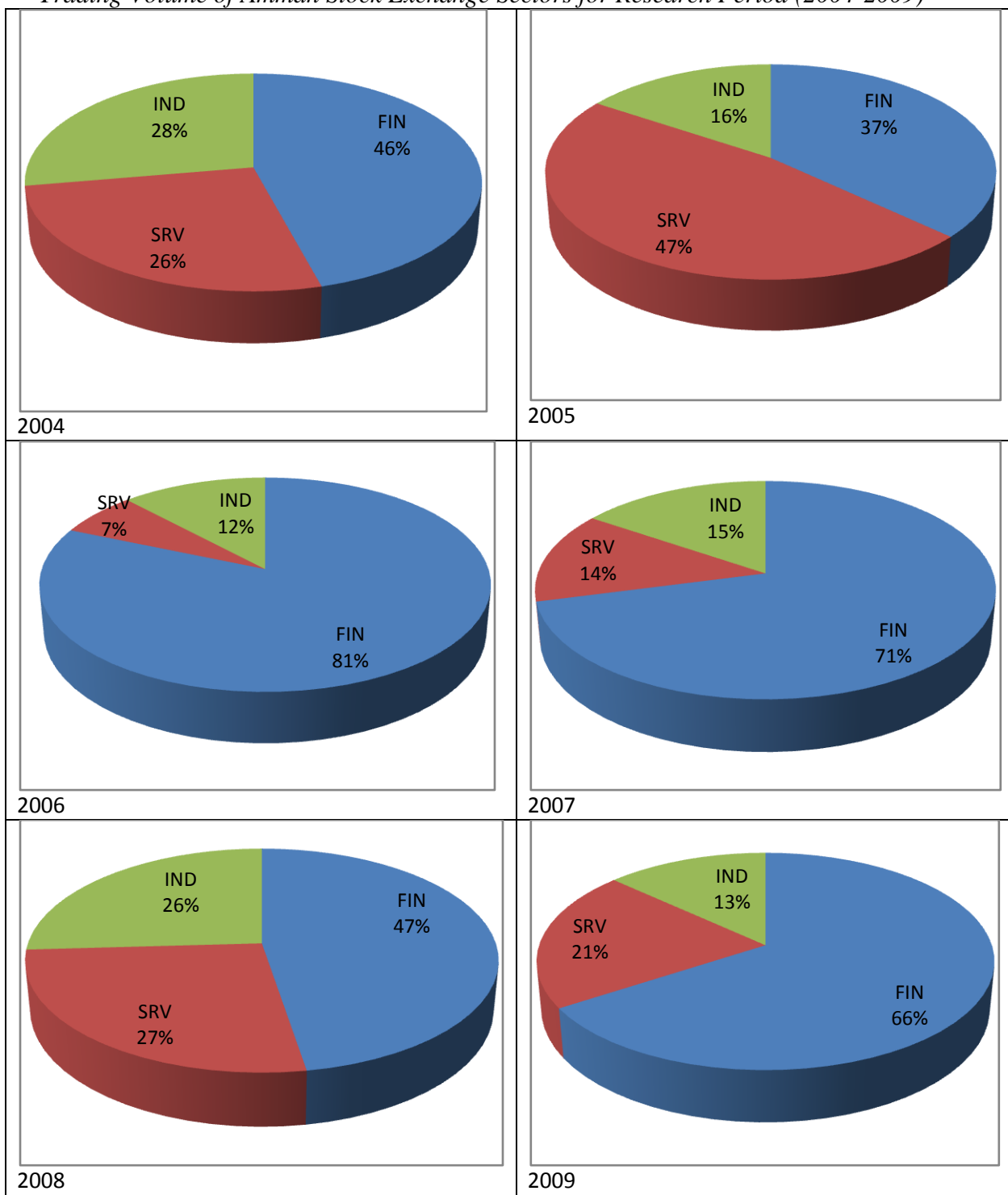
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Appendix (1)

Trading Volume of Amman Stock Exchange Sectors for Research Period (2004-2009)



Resource: Annual Reports of Amman Stock Exchange for 2004-2009.

Appendix (2)
Requirements for Companies to be Listed on Amman Stock Exchange
Main and Second Board

Main Market	Second Market
<ul style="list-style-type: none"> • To be listed for a full year at least on the Second Market. • The Company's net shareholders' equity must not be less than 100% of the paid-in capital. • The Company must make net pre-tax profits for at least two fiscal years out of the last three years preceding the transfer of listing. • The Company's (free float) to the subscribed shares ratio by the end of its fiscal year must not be less than: <ul style="list-style-type: none"> ○ 5% if it's paid-in capital is JD 50 million or more. ○ 10% if it's paid-in capital is less than JD 50 million. • The number of Company shareholders must not be less than 100 by the end of its fiscal year. • The minimum days of trading in the Company shares must not be less than 20% of overall trading days over the last twelve months, & at least 10% of the free float shares must have been traded in during the same period. 	<ul style="list-style-type: none"> • If the net shareholders' equity decreased to less than 75% of the paid-in capital. • If the Company accounts show losses in the last three fiscal years. • If the Company's free float ratio shares drop to less than the minimum set by the end of its fiscal year. • If the number of Company shareholders drops to less than 75 by the end of its fiscal year. • If the days of trading on Company shares over the last twelve months drop to less than the minimum set. • If the percentage of traded free float drops during the last twelve months to less than the minimum set by the end of its fiscal year.

Resource: Annual Reports of Jordan Securities Commission for 2004 to 2009

Appendix (3)

Type of Industry According to Companies' Activities in Amman Stock Exchange

Service sector	Industrial sector
<ul style="list-style-type: none">• Health Care Services• Educational Services• Hotels and Tourism• Transportation• Technology and Communications• Media• Utilities and Energy• Commercial Services	<ul style="list-style-type: none">• Chemical Industries• Electrical Industries• Engineering & Construction• Food & Beverage• Glass & Ceramic Industries• Mining & Extraction Industries• Paper & Cartoon Industries• Pharmaceutical & Medical Industries• Printing & Packaging• Textile, Leather & Clothing• Tobacco & Cigarettes

Appendix (4)
Example of Yearly Bulletin Information

Amman Stock Exchange			Yearly Bulletins			
Company	Symbol	Market	High price	Low price	Closing price	Avg. price
JORDAN TELECOM	JTEL	1	5.62	4.65	5.17	5.08
TAAMEER JOR HLDGS	TAMR	2	0.95	0.44	0.47	0.73
UNI ARAB INVEST	UAIC	2	1.72	0.4	0.43	0.92
FIRST JORDAN	FRST	2	0.74	0.29	0.33	0.49
ZARA INVESTMENTS	ZARA	2	1.7	1.2	1.4	1.52
AFAQ ENERGY	MANE	2	1.75	0.88	0.92	1.36
REAL ESTATE DV	REDV	2	0.96	0.41	0.43	0.69
ROYAL JORDANIAN	RJAL	1	2.44	1.36	2.03	1.93
AFAQ HOLDING	MANR	2	1.75	1.75	1.75	1.75
JOR ELECTREIC PWR	JOEP	1	4.31	2.89	4.17	3.45
TAJ TOURIST PROJ	TAJM	1	0.92	0.59	0.73	0.75
J D PROPERTIES	JDPC	1	1.05	0.67	0.74	0.85
INWAN	AMLK	2	0.9	0.77	0.85	0.84
PROFESSIONAL	PROF	2	0.85	0.57	0.62	0.69
UNITED HOLDINGS	UGHI	2	1.01	0.47	0.53	0.71
UNION INV	UINV	1	3.17	0.66	1.62	1.56
SOUTH ELECTRONICS	SECO	2	0.76	0.33	0.36	0.54
ARAB EAST INVST.	AEIV	1	2.3	0.9	0.93	1.68
AMWAL INVEST	AMWL	1	1.77	0.96	1	1.32
MEDITER. TOURISM	MDTR	2	2.11	1.6	1.85	1.75
UNION LAND DEV	ULDC	1	2.89	0.74	1.56	1.47
AL-DAWLIYAH H&M	MALL	1	1.49	1.08	1.08	1.18
OFFTEC HOLDING	OFTC	1	0.78	0.44	0.51	0.63
ARAB INT INV EDU	AIEI	2	4.16	2.3	2.72	2.94
ARAB CORP	ARED	1	2.64	0.39	0.42	0.85
AHLIA ENTERPRISES	ABLA	2	3.13	0.94	3.13	2.22
FUTURE ARAB	FUTR	2	0.82	0.53	0.6	0.66
FIRST FINANCE	FFCO	2	0.98	0.5	0.55	0.68
JO REALESTATE	JRCD	1	1.11	0.55	0.57	0.92
AL-FARIS NATIONAL	CEBC	2	1.02	0.56	0.6	0.8
ARAB INTL HOTEL	AIHO	2	2.85	1.82	1.85	2.04
AMWAJ	AMWJ	2	1.2	0.94	1.09	1.08
COMP TRANSPORTS	ABUS	2	0.93	0.44	0.55	0.65
INVEST ESTATE INDUST	IEAI	1	3.82	1	1.04	2.4
JOR INV TRUST	JOIT	1	1.72	1.13	1.39	1.41
INT' BROKERAGE	IBFM	2	1.94	0.45	0.46	1.13
SPCZ.INVST.COMD	SPIC	1	6.52	1.96	4.13	5.15
MODEL RESTAURANTS	FOOD	2	0.86	0.49	0.5	0.73
CONSULTING GROUP	CICO	2	1.21	0.76	0.85	0.89
JOR PROJ TOUR DEV	JPTD	2	6.65	4.5	6.65	5.08
BINDAR	BIND	2	3.68	1.39	1.95	2.62

Source: Amman Stock Exchange Database
<http://www.ase.com.jo/en/bulletins/yearly/2009-01-04>

Appendix (5)
Variables Measurement

N0.	Variables	Measurements
1.	<u>Dependent variables</u>	
1.1	Average annual share price (AP)	Annual rates of share price of a company for the financial year.
1.2	Annual closing share price (CP)	Share price of a company at end of the financial year.
1.3	ATM-share price (ATMP)	Share price of a company after a three-month period following the financial year-end.
2.	<u>Independent variables</u>	
2.1	Earnings (E)	Earnings per share of a company at end of the financial year.
2.2	Book value (BV)	Book value of equity per share of a company at end of the financial year.
2.3	Cash flows (CF)	Cash flows from operating activities per share of a company at end of the financial year.
	<u>Economic factors</u>	
2.4	Foreign ownership (FORN)	Foreign ownership of a company at end of the financial year, 1, if a company has foreign ownership; 0, if otherwise.
2.5	Trading volume (TRDV)	Total number of shares traded of a company at end of the financial year. 1 for companies with trading volume greater than median shares traded, 0 otherwise
	<u>Corporate governance</u>	
2.6	Financial disclosure time (DTIM)	Announcement time limited by JSC for a company to submit its preliminary, semiannual and annual financial reports. 1, if submitted within the allowed period, 0 if otherwise.
2.7	Financial disclosure level (DLVL)	Financial reports of a company complying with the disclosure requirements: (a) IASs requirements; (b) disclose material information; and (c) provide the JSC with all the disclosure items that should be included in the reports. 1, if a company complying with disclosure instructions requirements, 0 if otherwise.
	<u>Companies' characteristics</u>	
2.8	Shareholders number (SHRHNO)	Total number of shareholders of a company at end of the financial year. 1 for companies with shareholders number greater than median shareholders number, 0 otherwise.
2.9	Listing status LSTUS)	1, if main board companies and 0, if otherwise.
2.10	Companies' age (AGE)	Number of company's life years. 1, for companies with age greater than median age in the sample, 0 otherwise.
	<u>Type of industry</u>	
2.11	Type of industry (TYIND)	1, if services companies and 0, if otherwise.
3.	<u>Controlled variables</u>	
3.1	Companies' size (SIZE)	Log of total assets of a company at end of the financial year.
3.2	Leverage (LEVRG)	Ratio of debt to total assets of a company at end of the financial year.

Appendix (6)

Variables Measurements in Prior Research

N0.	Variables	Measurements in prior studies
1.	<u>Dependent variables</u>	
1.1	Average annual share price (AP)	Grabowski and Mueller, 1975; Oyerinde, 2009
1.2	Annual closing share price (CP)	Powell et al., 2001; Bao & Bao, 2001; Bao & Bao, 2004; Bao, 2004; Anandarajan et al., 2006.
1.3	ATM-share price (ATMP)	Bae and Jeang, 2007; Habib and Weil, 2008; Kanagaretnam et al., 2009, Anandarajan & Hasan, 2010.
2.	<u>Independent variables</u>	
2.1	Earnings (E)	Powell et al., 2001; Bao, 2004; Kanagaretnam et al., 2009; Gee-Jung, 2009.
2.2	Book value (BV)	Bao & Bao, 2001; Bao, 2004; Anandarajan et al., 2006; Kanagaretnam et al., 2009; Gee-Jung, 2009.
2.3	Cash flow (CF)	Gee – Jung, 2009; Vishnani & Shah, 2008.
	<u>Economic factors</u>	
2.4	Foreign ownership (FORN)	Anandarajan & Hasan, 2010.
2.5	Trading volume (TRDV)	Epps and Epps, 1976, Cready 1988; Cready and Mynatt 1991; Bhattacharya, 2001.
	<u>Corporate governance</u>	
2.6	Financial disclosure time (DTIM)	Givoly and Palmon 1982; Kross and Schroeder, 1984.
2.7	Financial disclosure level (DLVL)	Nasser et al., 2002; Dahawy, 2009.
	<u>Companies' characteristics</u>	
2.8	Shareholders number (SHRHNO)	Nasser et al., 2002; Alarussi, 2008.
2.9	Listing status (LSTUS)	Alarussi, 2008.
2.10	Company's age (AGE)	Alsaed, 2005; Cazavan and Jeanjean, 2007; Firth et al., 2008.
	<u>Type of industry</u>	
2.11	Type of industry (TYIND)	Naser et al., 2002; Ahmed et al., 2003; Abayadeera, 2010a, 2010b.
3.	<u>Controlled variables</u>	
3.1	Company's size (SIZE)	Hassan, 2004; Lin et al., 2007; Anandarajan and Hasan, 2010.
3.2	Leverage (LEVRG)	Anandarajan & Hasan, 2010; Choi et al., 2011.

Appendix (7)
List of Jordanian Companies (Research Sample)

Symbol	Services companies
131002	AL-BILAD MEDICAL SERVICES
131003	JORDAN HOTEL & TOURISM
131004	JORDANIAN ELECTRIC POWER
131005	ARAB INTERNATIONAL HOTELS
131011	VEHICLES OWNERS FEDERATION
131012	JORDAN NATIONAL SHIPPING LINES
131013	JORDAN PRESS FOUNDATION / ALRA'I
131017	REAL ESTATE INVESTMENT
131018	NATIONAL PORTFOLIO SECURITIES
131019	MACHINERY EQUIP. RENTING & MAINTENANCE
131022	JORDANIAN DUTY FREE SHOPS
131023	JORDAN INTERNATIONAL TRADING CENTER
131025	JORDANIAN EXPATRIATE INVESTMENT HOLDING
131027	RESOURCES COMPANY FOR DEVELOPMENT & INVESTMENT PLC
131030	JORDAN PRESS & PUBLISHING /AD-DUSTOUR
131034	SALAM INTERNATIONAL TRANSPORT & TRADING
131035	MEDITERRANEAN TOURISM INVESTMENT
131039	JORDAN INVESTMENT TRUST
131051	AL-ZARQA FOR EDUCATION & INVESTMENT
131052	ARAB INTER. FOR INVESTMENT & EDUCATION
131062	JORDAN TRADING FACILITIES
131064	NATIONAL COMERCIAL CENTERS
131066	THE UNIFIED FOR ORGANIZING LAND TRANSPORT
131067	ZARA INVESTMENT (HOLDING)
131069	UNION INVESTMENT CORPORATION
131073	UNION LAND DEVELOPMENT CORP.
131077	SPECIALIZED INVESTMENT COMPOUNDS
131078	AL-SHARQ INVESTMENTS PROJECTS
131079	UNITED ARAB INVESTORS
131080	JORDAN EXPRESS TOURISEM TRANSPORT
131082	ARAB EAST INVESTMENT
131083	JORDAN INVESTMENT AND TOURISM TRANSPORT (ALFA)
131086	JORDAN SPECIALIZED INVESTMENT
131087	REAL ESTATE DEVELOPMENT
131088	ALSAQER FOR INVESTMENT
131090	UNITED FOR FINANCIAL INVESTMENT
131096	JORDAN CENTRAL
131097	CENTURY INVESTMENT GROUP
131101	PETRA TOURIST TRANSPORT
	Industrial companies
141002	POULTRY PROCESSING
141003	ARAB PAPER CONVERTING & TRADING
141004	JORDAN DAIRY
141005	THE PUBLIC MINING
141006	ARAB ALUMINIUM INDUSTRY

141009 THE INDUSTRIAL COMMERCIAL & AGRICULTURAL
 141010 ARAB CHEMICAL DETERGENTS INDUSTRIES
 141011 NATIONAL STEEL INDUSTRY
 141012 DAR AL DAWA DEVELOPMENT & INVESTMENT
 141014 THE JORDAN WORSTED MILLS
 141015 JORDAN CERAMIC INDUSTRIES
 141017 JORDAN PAPER & CARDBOARD FACTORIES
 141018 JORDAN PHOSPHATE MINES
 141019 THE JORDAN PIPES MANUFACTURING
 141020 JORDAN TANNING
 141023 ARAB CENTER FOR PHARM. & CHEMICALS
 141026 JORDAN CHEMICAL INDUSTRIES
 141027 UNIVERSAL CHEMICAL INDUSTRIES
 141031 WOOLEN INDUSTRIES
 141032 INDUSTRIAL MATCH \ JIMCO
 141036 ATTANQEEP CONST. MATERIAL MANUFACTURING
 141038 JORDAN WOOD INDUSTRIES / JWICO
 141039 NATIONAL CABLE & WIRE MANUFACTURING
 141040 JORDAN SULPHO-CHEMICALS
 141042 THE JORDAN CEMENT FACTORIES
 141043 ARAB POTASH
 141044 UNION CHEMICAL & VEGETABLE OIL IND.
 141045 JORDAN ROCKWOOL INDUSTRIES
 141048 INTERNATIONAL TOBACCO AND CIGARETTES
 141052 UNIVERSAL MODERN INDUSTRIES
 141054 NATIONAL CHLORINE
 141055 INDUSTRIAL RESOURCES
 141059 JORDAN NEW CABLE
 141061 EL-ZAY READY WEAR MANUF.
 141065 READY MIX CONCRETE AND CONSTRUCTION SUPPLIES
 141070 JORDAN STEEL
 141072 ARAB ELECTRICAL INDUSTRIES
 141073 MIDDLE EAST PHARM. AND CHEMICAL IND. & MEDICAL APPLIANCES
 141074 UNION TOBACCO
 141078 INTERNATIONAL CERAMIC INDUSTRIES
 141081 PEARL SANITARY PAPER
 141084 NATIONAL POULTRY
 141086 INTERNATIONAL CO. FOR OPTICAL AND HEARING
 141091 NATIONAL ALUMINIUM INDUSTRIAL
 141092 THE ARAB INTERNATIONAL FOOD FACTORIES
 141094 NUTRI DAR
 141098 ARABIAN STEEL PIPES MANUFACTURING
 141100 AL-EKBAL PRINTING AND PACKAGING
 141110 UNION ADVANCED INDUSTRIES
 141141 JORDAN VEGETABLE OIL INDUSTRIES
 141170 INTERNATIONAL SILICA INDUSTRIES
 142041 JORDAN PETROLEUM REFINARY

Appendix (8)

Yearly and Pooled Regressions: The Value Relevance of Earnings, Book Value, and Cash Flows (H1)

Appendix (8) - Panel A: Relative to Average Annual Share Price without Control Variables

$AP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
β_1	0.28	0.45	0.29	0.50	0.19	0.22	0.33
<i>t-test</i>	2.45**	3.34***	1.95*	4.52***	1.28	1.46	6.07***
β_2	0.53	0.43	0.43	0.32	0.57	0.50	0.47
<i>t-test</i>	4.71***	3.45***	2.70***	2.88***	4.75***	3.46***	8.92***
β_3	0.14	-0.09	0.14	0.18	0.23	0.15	0.08
<i>t-test</i>	1.40	-0.89	0.96	1.98*	2.05**	1.07	1.72*
<i>Adj.R</i> ²	0.66	0.57	0.56	0.76	0.71	0.60	0.61
<i>F</i>	31.96***	24.11***	17.63***	47.92***	35.75***	22.79***	145.06***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

AP: Average annual share price.

E : Earnings per share.

BV: Book value of equity per share.

CF: Cash flows from operating per share.

Appendix (8) - Panel B: Relative to Average Annual Share Price with Control Variables

$AP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + \beta_4 SIZE + \beta_5 LEVRG + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
β_1	0.29	0.43	0.23	0.47	0.19	0.20	0.32
<i>t-test</i>	2.42**	3.57***	1.50	4.14***	1.28	1.27	5.82***
β_2	0.51	0.37	0.43	0.30	0.58	0.41	0.45
<i>t-test</i>	4.09***	3.12***	2.47**	2.61**	4.21***	2.56**	8.21***
β_3	0.14	-0.06	0.13	0.17	0.24	0.24	0.06
<i>t-test</i>	1.17	-.63	0.84	1.83*	2.07**	1.57	1.21
β_4	0.07	0.27	0.13	0.16	-0.04	0.10	0.11
<i>t-test</i>	0.72	2.81***	0.96	2.00*	-0.41	0.81	2.60***
β_5	-0.05	0.08	0.09	-0.05	-0.02	-0.18	0.02
<i>t-test</i>	-0.43	0.83	0.78	-0.61	-0.20	-1.42	0.36
<i>Adj.R</i> ²	0.65	0.64	0.56	0.77	0.70	0.60	0.62
<i>F</i>	18.69***	20.21***	11.33***	31.00***	20.63***	14.09***	91.07***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

SIZE: Company size (log of total assets).

LEVRG: Leverage (debt to total asset).

Other variables are defined before.

Appendix (8) - Panel C: Relative to Annual Closing Share Price without Control Variables

$CP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
β_1	0.33	0.44	0.35	0.48	0.14	0.27	0.36
$t\text{-test}$	3.07***	3.80***	2.38**	3.78***	0.93	1.67*	6.88***
β_2	0.52	0.47	0.34	0.29	0.61	0.45	0.46
$t\text{-test}$	4.89***	4.31***	2.11**	2.33**	4.84***	2.95***	9.03***
β_3	0.13	-0.01	0.16	0.19	0.22	0.13	0.08
$t\text{-test}$	1.40	-0.11	1.07	1.84*	1.91*	0.91	1.90*
$Adj.R^2$	0.70	0.67	0.54	0.69	0.69	0.57	0.64
F	38.60***	37.60***	16.82***	33.78***	32.06***	19.62***	164.21***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

CP: Annual closing share price.

All Variables are defined before.

Appendix (8) - Panel D: Relative to Annual Closing Share Price with Control Variables

$CP = \beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + \beta_4 SIZE + \beta_5 LEVRG + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
β_1	0.33	0.43	0.36	0.45	0.15	0.25	0.35
$t\text{-test}$	3.10***	3.83***	2.23**	3.41***	0.96	1.49	6.68***
β_2	0.49	0.46	0.38	0.28	0.60	0.37	0.45
$t\text{-test}$	4.37***	4.09***	2.08**	2.08**	4.20***	2.17**	8.35***
β_3	0.08	0.01	0.14	0.18	0.24	0.21	0.07
$t\text{-test}$	0.73	0.05	0.86	1.68*	1.98*	1.30	1.55
β_4	0.18	0.11	-0.03	0.13	-0.03	0.10	0.07
$t\text{-test}$	1.96*	1.20	-0.17	1.35	-0.28	0.73	1.61
β_5	-0.02	0.09	0.08	-0.04	-0.05	-0.16	0.01
$t\text{-test}$	-0.21	1.09	0.63	-0.40	-0.44	-1.17	0.25
$Adj.R^2$	0.71	0.69	0.52	0.69	0.68	0.56	0.64
F	24.94***	24.62***	9.74***	20.56***	18.58***	11.87***	99.78***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (8) - Panel E: Relative to ATM-Share Price without Control Variables

ATMP = $\beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
β_1	0.20	0.33	0.17	0.58	0.04	0.15	0.23
<i>t-test</i>	1.55	2.42**	1.15	4.45***	0.34	0.91	4.08***
β_2	0.55	0.51	0.47	0.17	0.77	0.53	0.52
<i>t-test</i>	4.33***	4.01***	2.91***	1.30	7.19***	3.47***	9.56***
β_3	0.12	-0.03	0.20	0.18	0.17	0.17	0.11
<i>t-test</i>	1.10	-0.27	1.32	1.69*	1.70*	1.18	2.37**
<i>Adj.R</i> ²	0.56	0.56	0.54	0.67	0.77	0.56	0.58
<i>F</i>	21.70***	23.03***	16.73***	30.56***	48.64***	19.42***	129.44***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

ATMP: Share price after a three-month period following the financial year-end.

All variables are defined before.

Appendix (8) - Panel F: Relative to ATM-Share Price with Control Variables

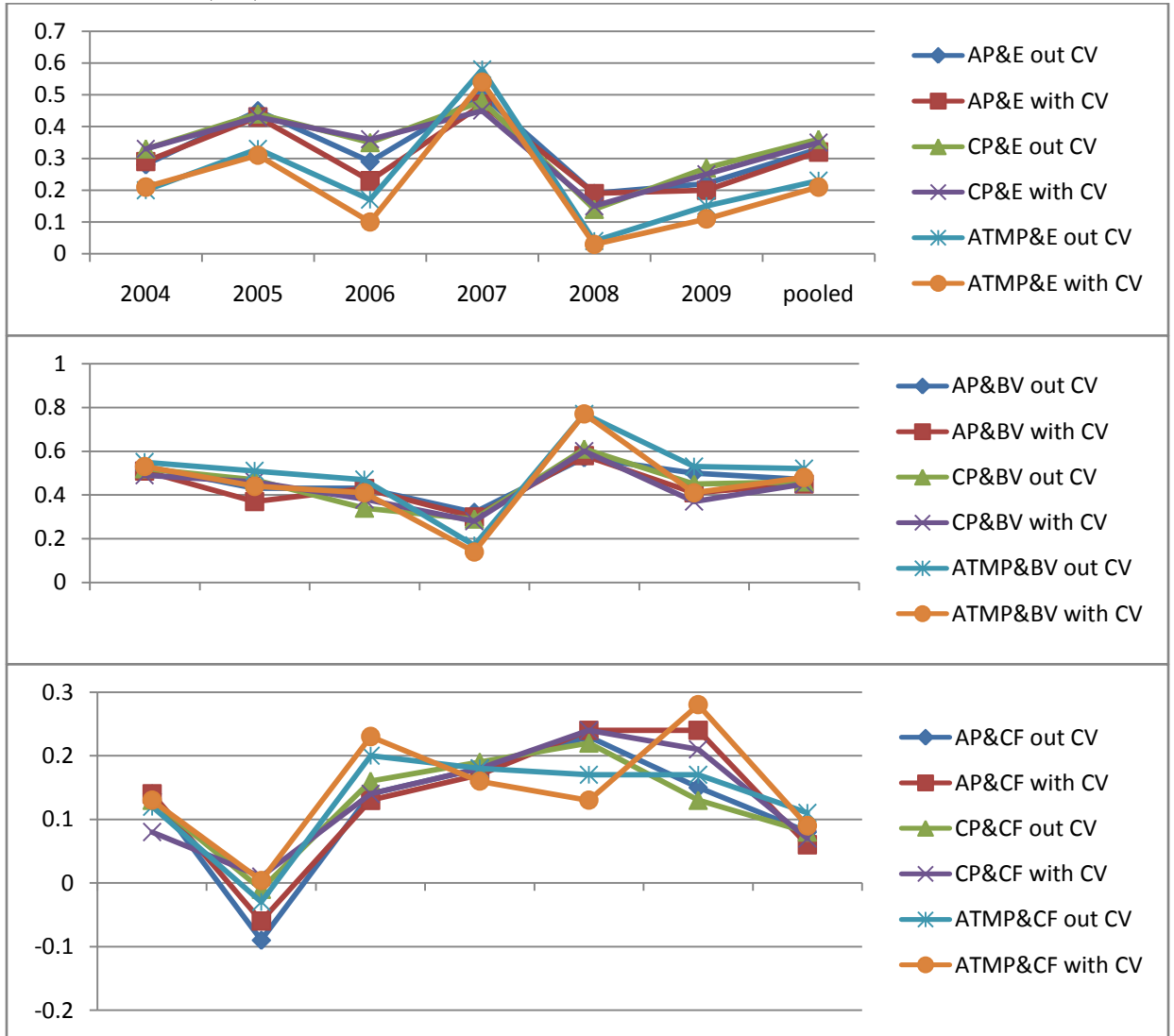
ATMP = $\beta_0 + \beta_1 E + \beta_2 BV + \beta_3 CF + \beta_4 SIZE + \beta_5 LEVRG + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
β_1	0.21	0.31	0.10	0.54	0.03	0.11	0.21
<i>t-test</i>	1.52	2.49**	0.61	4.09***	0.25	0.69	3.80***
β_2	0.53	0.44	0.41	0.14	0.77	0.41	0.48
<i>t-test</i>	3.80***	3.49***	2.34**	1.04	6.60***	2.48**	8.49***
β_3	0.13	0.004	0.23	0.16	0.13	0.28	0.09
<i>t-test</i>	0.94	0.04	1.43	1.55	1.26	1.73*	1.96*
β_4	0.05	0.27	0.21	0.21	0.11	0.15	0.19
<i>t-test</i>	0.42	2.75	1.44	2.24**	1.20	1.15	4.31***
β_5	-0.04	-0.01	-0.01	-0.07	0.06	-0.22	-0.03
<i>t-test</i>	-0.30	-0.05	-0.07	-0.73	0.67	-1.63	-0.70
<i>Adj.R</i> ²	0.55	0.61	0.55	0.69	0.78	0.57	0.61
<i>F</i>	12.55***	17.60***	10.67***	20.74***	30.84***	12.45***	86.67***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (9)

Yearly and Pooled Coefficients Trend: The Value Relevance of Earnings, Book Value, and Cash Flows (H1)



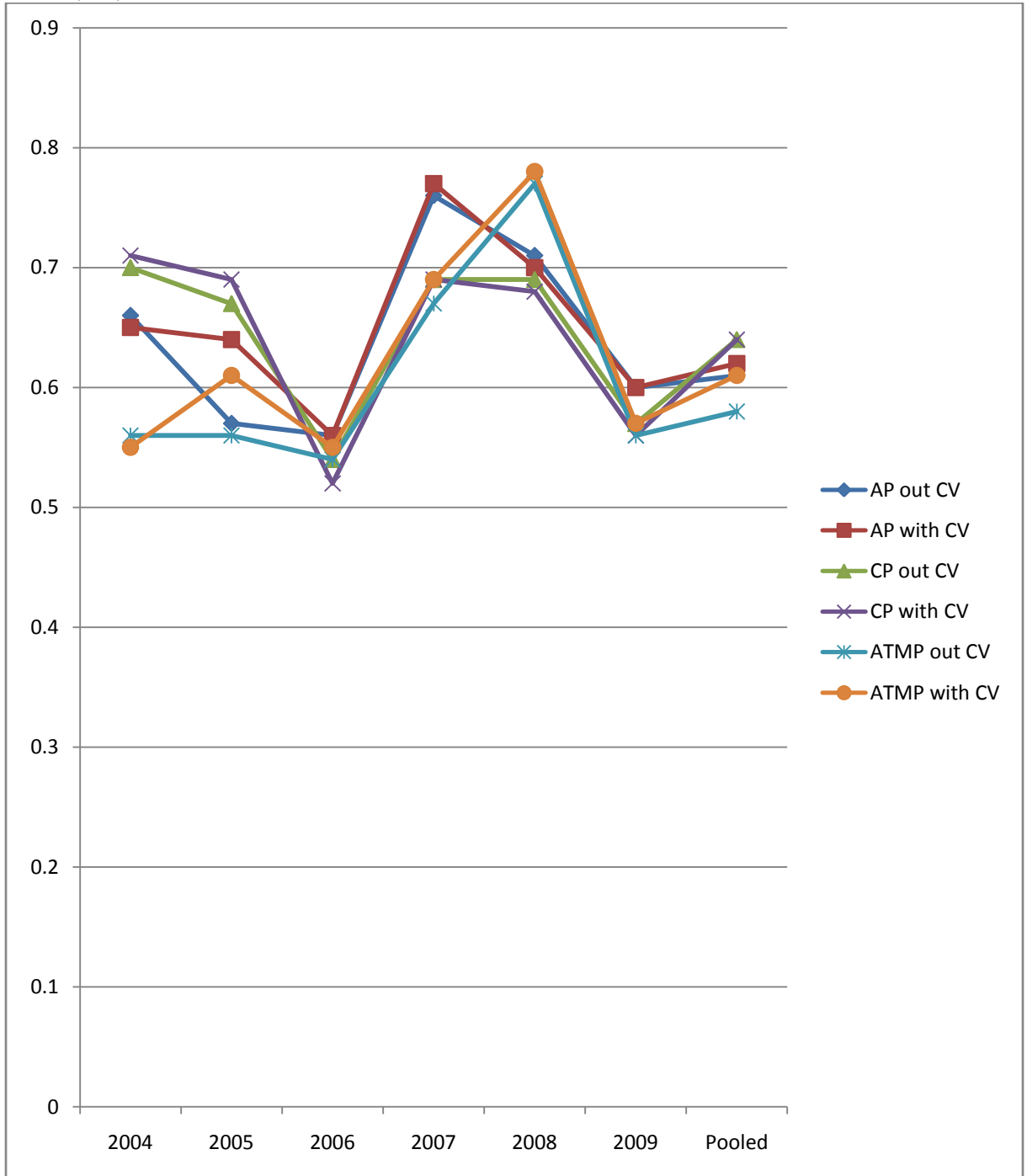
Out CV: Coefficients without control variables

With CV: Coefficients with control variables

Other terms are defined before.

Appendix (10)

Yearly and Pooled R^2 Trend: The Value Relevance of Earnings, Book Value, and Cash Flows (H1)



All terms are defined before.

Appendix (11)

Yearly and Pooled Regressions: The Influence of Foreign Ownership on the Value Relevance of Earnings, Book Value, and Cash Flows (H2-1)

Appendix (11) - Panel A: Relative to Average Annual Share Price without Control Variables

AP = $\omega_0 + \omega_1 \text{ FORN} + \omega_2 \text{ E} + \omega_3 \text{ E*FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV*FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF*FORN} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ω_1	0.50	0.24	0.16	0.52	-0.07	0.11	0.25
<i>t-test</i>	2.43**	1.23	0.56	2.25**	-0.34	0.48	2.83***
ω_2	0.30	0.61	0.40	0.48	0.42	0.35	0.46
<i>t-test</i>	3.01***	7.28***	3.12***	4.43***	2.99***	2.20**	10.22***
ω_3	0.22	0.34	0.11	0.50	0.13	0.23	0.31
<i>t-test</i>	1.28	2.07**	0.57	3.00***	0.62	1.10	4.22***
ω_4	0.73	0.64	0.55	0.56	0.46	0.44	0.57
<i>t-test</i>	8.69***	7.21***	5.53***	6.75***	4.72***	4.26***	15.47***
ω_5	0.43	0.29	0.36	0.33	0.58	0.53	0.40
<i>t-test</i>	2.87***	1.99**	2.07**	2.69***	3.69***	3.42***	6.30***
ω_6	0.13	0.33	0.05	0.33	0.28	0.33	0.23
<i>t-test</i>	0.93	3.13***	0.45	2.58**	2.62**	3.05***	4.93***
ω_7	0.30	-0.12	-0.10	0.05	0.14	0.11	0.03
<i>t-test</i>	2.00**	-0.99	-0.50	0.37	1.05	0.70	0.47
Adj.R ²	0.78	0.59	0.55	0.78	0.72	0.62	0.64
F	13.72***	10.51***	1174***	28.07***	17.59***	13.61***	71.22***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

FORN: Foreign ownership.

Other variables are defined before.

Appendix (11) - Panel B: Relative to Average Annual Share Price with Control Variables

AP = $\omega_0 + \omega_1 \text{ FORN} + \omega_2 \text{ E} + \omega_3 \text{ E*FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV*FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF*FORN} + \omega_8 \text{ SIZE} + \omega_9 \text{ LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ω_1	0.46	0.15	-0.05	0.37	-0.06	0.12	0.14
<i>t-test</i>	2.00*	0.80	-0.16	1.47	-0.26	0.49	1.49
ω_2	0.27	0.55	0.30	0.40	0.41	0.31	0.41
<i>t-test</i>	2.73***	7.23***	2.31**	3.50***	2.76***	1.93*	9.28***
ω_3	0.22	0.31	-0.09	0.42	0.13	0.21	0.28
<i>t-test</i>	1.28	2.06**	-0.45	2.45**	0.61	0.95	3.83***
ω_4	0.68	0.56	0.51	0.57	0.56	0.51	0.58
<i>t-test</i>	7.11***	6.40***	5.06***	6.78***	5.48***	4.65***	14.85***
ω_5	0.42	0.28	-0.40	0.36	0.61	0.47	0.40
<i>t-test</i>	2.69***	2.00**	-2.19**	2.76***	3.59***	2.79***	6.28***
ω_6	0.23	0.35	0.24	0.27	0.28	0.41	0.24
<i>t-test</i>	1.68*	3.62***	1.88*	1.85*	2.59*	3.54***	5.01***
ω_7	0.27	-0.10	-0.17	0.04	0.14	0.18	-0.01
<i>t-test</i>	1.61	-0.86	-0.83	0.29	0.95	0.96	-0.16
ω_8	-0.05	0.26	0.10	0.18	-0.12	-0.02	0.08
<i>t-test</i>	-0.49	2.66***	0.65	2.00*	-1.03	-0.11	1.82*
ω_9	0.16	0.11	0.15	-0.05	0.06	-0.13	0.05
<i>t-test</i>	1.66*	1.20	1.10	-0.51	0.56	-0.81	1.12
Adj.R ²	0.78	0.68	0.57	0.75	0.71	0.61	0.65
F	10.02***	10.89***	9.53***	21.65***	12.70***	9.95***	56.94***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (11) - Panel C: Relative to Annual Closing Share Price without Control Variables

CP = $\omega_0 + \omega_1 \text{ FORN} + \omega_2 \text{ E} + \omega_3 \text{ E*FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV*FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF*FORN} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ω_1	0.55	0.24	0.14	0.60	-0.14	0.25	0.29
<i>t-test</i>	2.73***	1.23	0.50	2.45**	-0.67	1.04	3.29***
ω_2	0.40	0.68	0.43	0.46	0.43	0.34	0.51
<i>t-test</i>	4.32***	8.52***	3.43***	4.33***	2.96***	2.17**	11.93***
ω_3	0.25	0.32	0.24	0.43	0.08	0.26	0.34
<i>t-test</i>	1.54	1.93*	1.30	2.44**	0.36	1.14	4.66***
ω_4	0.78	0.67	0.50	0.54	0.47	0.41	0.58
<i>t-test</i>	9.65***	7.75***	5.15***	6.50***	4.80***	3.81***	15.65***
ω_5	0.46	0.36	0.28	0.26	0.63	0.43	0.39
<i>t-test</i>	3.08***	2.45**	1.68*	2.03**	3.82***	2.59**	6.34***
ω_6	0.12	0.44	0.05	0.29	0.36	0.36	0.28
<i>t-test</i>	0.87	4.35***	0.45	2.27**	3.28***	3.06***	6.04***
ω_7	0.34	-0.05	-0.16	0.17	0.14	0.08	0.05
<i>t-test</i>	2.33**	-0.42	-0.79	1.22	1.01	0.49	0.93
Adj. R^2	0.78	0.67	0.60	0.74	0.69	0.57	0.65
F	14.66***	10.20***	12.97***	24.12***	15.36***	10.84***	73.40***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (11) - Panel D: Relative to Annual Closing Share Price with Control Variables

CP = $\omega_0 + \omega_1 \text{ FORN} + \omega_2 \text{ E} + \omega_3 \text{ E*FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV*FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF*FORN} + \omega_8 \text{ SIZE} + \omega_9 \text{ LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ω_1	0.42	0.20	0.02	0.47	-0.12	0.23	0.19
<i>t-test</i>	1.91*	1.02	0.06	1.77*	-0.53	0.86	2.08**
ω_2	0.36	0.65	0.36	0.39	0.43	0.30	0.48
<i>t-test</i>	4.01***	8.26***	2.79***	3.45***	2.83***	1.92*	11.07***
ω_3	0.26	0.30	0.26	0.36	0.08	0.22	0.31
<i>t-test</i>	1.59	1.86*	1.40	1.97*	0.37	0.92	4.31***
ω_4	0.72	0.63	0.49	0.54	0.58	0.46	0.59
<i>t-test</i>	8.01***	7.19***	4.90***	6.38***	5.57***	3.96***	15.24***
ω_5	0.44	0.37	0.36	0.26	0.64	0.36	0.39
<i>t-test</i>	2.93***	2.52**	2.06**	1.87*	3.56***	1.98*	6.22***
ω_6	0.21	0.45	-0.002	0.23	0.37	0.43	0.29
<i>t-test</i>	1.62	4.67***	-0.02	1.54	3.29***	3.58***	6.27***
ω_7	0.25	-0.04	-0.25	0.19	0.15	0.15	0.02
<i>t-test</i>	1.53	-0.30	-1.20	1.32	0.99	0.79	0.41
ω_8	0.06	0.09	-0.04	0.13	-0.09	-0.04	0.03
<i>t-test</i>	0.63	0.93	-0.28	1.28	-0.70	-0.27	0.65
ω_9	0.15	0.12	0.14	-0.02	0.01	-0.10	0.04
<i>t-test</i>	1.66*	1.40	1.06	-0.15	0.07	-0.54	1.08
Adj. R^2	0.80	0.70	0.59	0.74	0.65	0.55	0.67
F	11.39***	8.76***	10.26***	18.65***	10.98***	8.08***	57.57***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (11) - Panel E: Relative to ATM-Share Price without Control Variables

ATMP = $\omega_0 + \omega_1 \text{ FORN} + \omega_2 \text{ E} + \omega_3 \text{ E*FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV*FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF*FORN} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ω_1	0.36	0.26	0.20	0.58	-0.20	-0.02	0.19
<i>t-test</i>	1.61	1.42	0.62	2.16	-1.18	-0.08	2.15**
ω_2	0.20	0.49	0.34	0.43	0.26	0.30	0.35
<i>t-test</i>	1.89*	5.55***	2.46**	3.80***	1.78*	1.87*	7.29***
ω_3	0.08	0.21	0.03	0.54	-0.06	0.10	0.16
<i>t-test</i>	0.44	1.35	0.13	2.82***	-0.36	0.45	2.21**
ω_4	0.67	0.60	0.58	0.52	0.50	0.42	0.54
<i>t-test</i>	7.46***	6.52***	5.73***	5.96***	5.26***	4.05***	14.19***
ω_5	0.45	0.36	0.38	0.15	0.72	0.54	0.42
<i>t-test</i>	2.74***	2.55**	2.05**	1.02	5.35***	3.37***	6.62***
ω_6	0.15	0.31	0.13	0.31	0.19	0.32	0.23
<i>t-test</i>	1.06	3.05***	1.13	2.36**	1.69*	2.95***	4.87***
ω_7	0.31	-0.01	0.04	0.01	0.08	0.10	0.09
<i>t-test</i>	1.92*	-0.07	0.18	0.04	0.70	0.61	1.50
<i>Adj.R</i> ²	0.72	0.64	0.55	0.69	0.80	0.65	0.63
<i>F</i>	10.57***	12.62***	9.39***	18.88***	26.06***	12.03***	68.03***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (11) - Panel F: Relative to ATM-Share Price with Control Variables

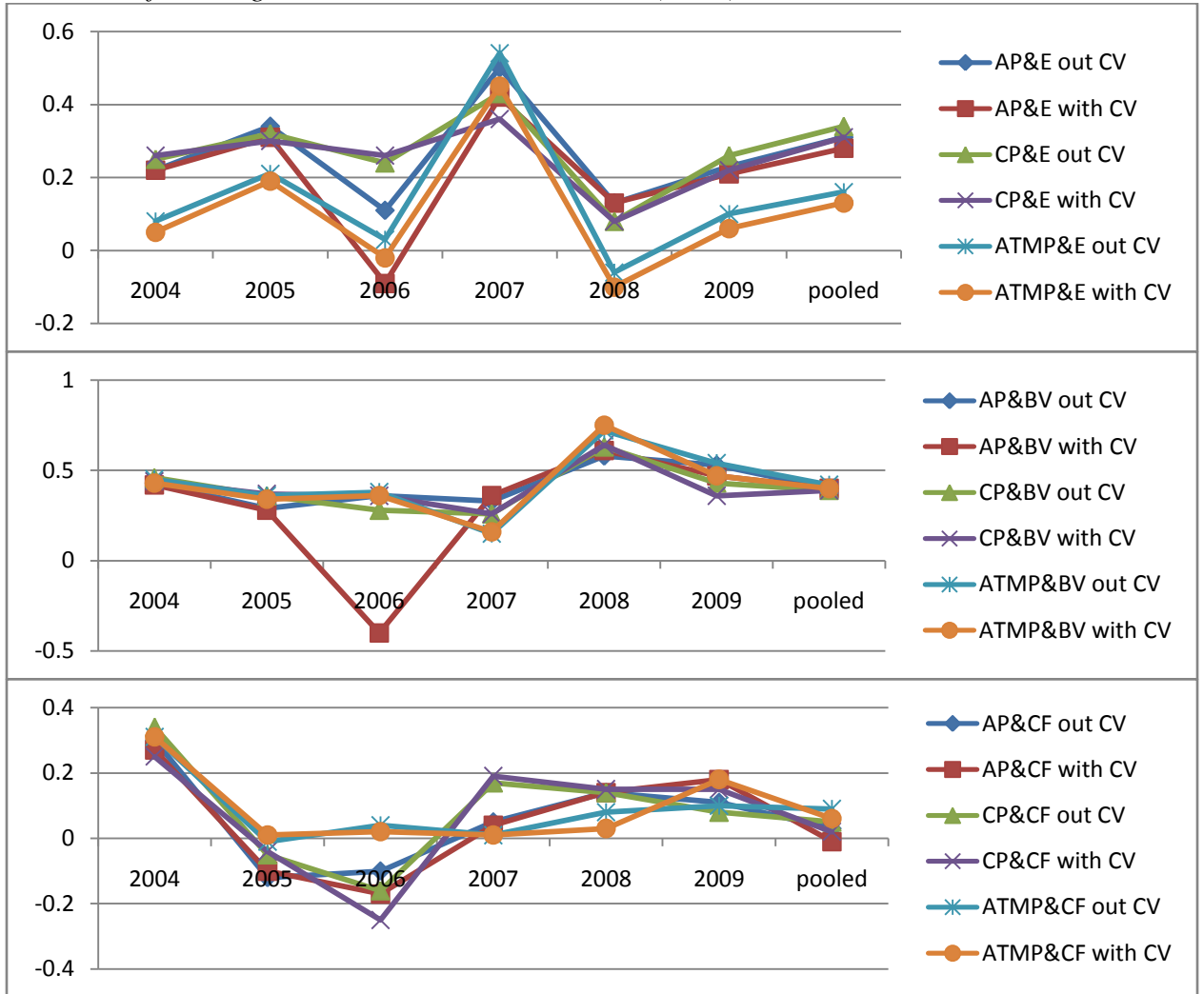
ATMP = $\omega_0 + \omega_1 \text{ FORN} + \omega_2 \text{ E} + \omega_3 \text{ E*FORN} + \omega_4 \text{ BV} + \omega_5 \text{ BV*FORN} + \omega_6 \text{ CF} + \omega_7 \text{ CF*FORN} + \omega_8 \text{ SIZE} + \omega_9 \text{ LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ω_1	0.34	0.19	0.03	0.39	-0.33	-0.01	0.06
<i>t-test</i>	1.39	1.04	0.09	1.36	-1.88*	-0.04	0.68
ω_2	0.18	0.43	0.26	0.35	0.17	0.26	0.29
<i>t-test</i>	1.65	5.12***	1.81*	2.90***	1.17	1.68*	6.22***
ω_3	0.05	0.19	-0.02	0.45	-0.10	0.06	0.13
<i>t-test</i>	0.46	1.26	-0.09	2.25**	-0.60	0.28	1.76*
ω_4	0.63	0.51	0.54	0.53	0.56	0.50	0.53
<i>t-test</i>	6.15***	5.45***	5.24***	5.90***	5.85***	4.52***	13.30***
ω_5	0.43	0.34	0.36	0.16	0.75	0.47	0.40
<i>t-test</i>	2.55**	2.47**	1.84*	1.07	5.42***	2.69***	6.28***
ω_6	0.25	0.34	0.15	0.23	0.17	0.41	0.23
<i>t-test</i>	1.72*	3.58***	1.30	1.56	1.49	3.62***	5.05***
ω_7	0.31	0.01	0.02	0.01	0.03	0.18	0.06
<i>t-test</i>	1.68*	0.08	0.09	0.05	0.25	0.95	0.97
ω_8	-0.06	0.26	0.14	0.20	0.01	-0.03	0.17
<i>t-test</i>	-0.55	2.72***	0.87	1.90*	0.15	-0.22	3.73***
ω_9	0.18	0.04	0.03	-0.02	0.15	-0.03	0.000
<i>t-test</i>	1.70*	0.41	0.21	-0.19	1.65*	-0.22	0.01
<i>Adj.R</i> ²	0.73	0.70	0.53	0.71	0.81	0.63	0.65
<i>F</i>	7.71***	11.05***	7.20***	14.90***	21.44***	8.90***	55.65***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (12)

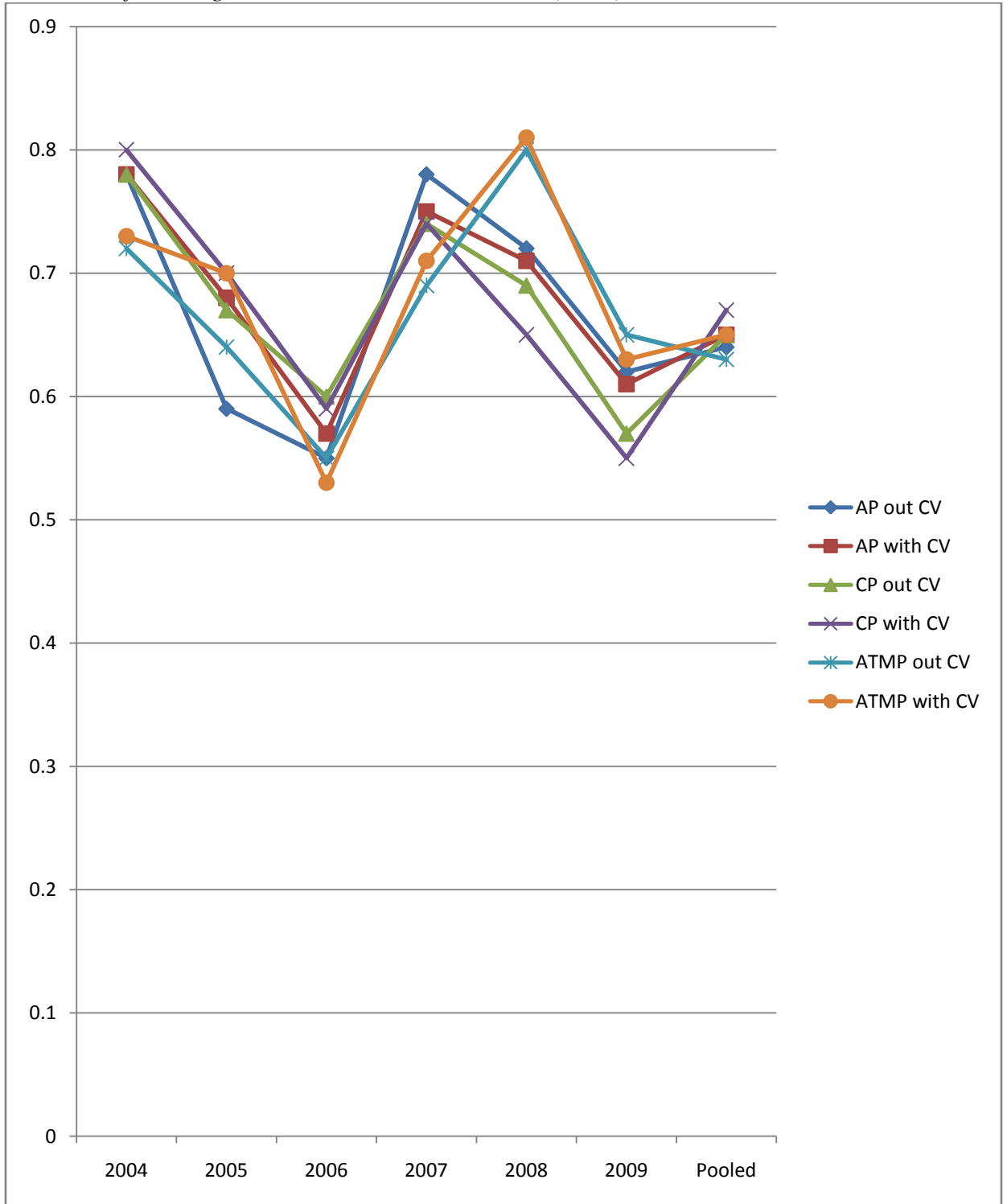
Yearly and Pooled Coefficients Trend: The Influence of Foreign Ownership on the Value Relevance of Earnings, Book Value, and Cash Flows (H2-1)



All terms are defined before.

Appendix (13)

Yearly and Pooled R^2 Trend: The Influence of Foreign Ownership on the Value Relevance of Earnings, Book Value, and Cash Flows (H2-1)



All terms are defined before.

Appendix (14)

Yearly and Pooled Regressions: The Influence of Trading Volume on the Value Relevance of Earnings, Book Value, and Cash Flows (H2-2)

Appendix (14) - Panel A: Relative to Average Annual Share Price without Control Variables

AP = $\theta_0 + \theta_1 \text{TRDV} + \theta_2 \text{E} + \theta_3 \text{E} \cdot \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV} \cdot \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF} \cdot \text{TRDV} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
θ_1	0.13	0.21	0.52	0.05	0.29	-0.30	0.19
<i>t-test</i>	0.26	0.74	1.10	0.11	0.79	-0.29	1.25
θ_2	0.35	0.60	0.41	0.47	0.34	0.40	0.46
<i>t-test</i>	3.38***	7.13***	3.09***	4.36***	2.39**	2.57**	10.23***
θ_3	0.06	0.33	0.57	0.50	0.37	-0.33	0.28
<i>t-test</i>	0.21	1.47	1.88*	1.97*	0.98	-0.42	2.63***
θ_4	0.70	0.53	0.54	0.56	0.45	0.41	0.58
<i>t-test</i>	8.46***	7.16***	5.40***	6.80***	4.71***	3.99***	15.71***
θ_5	0.29	0.32	0.02	0.43	0.15	0.46	0.32
<i>t-test</i>	1.00	1.81*	0.08	2.38**	0.55	1.05	3.71***
θ_6	0.13	0.34	0.04	0.35	0.28	0.33	0.24
<i>t-test</i>	0.94	3.21***	0.32	2.73***	2.99***	2.90***	5.01***
θ_7	0.26	-0.11	-0.10	-0.31	0.23	0.27	0.02
<i>t-test</i>	1.17	-0.73	-0.33	-1.07	1.24	1.26	0.24
Adj. R^2	0.72	0.59	0.57	0.78	0.70	0.63	0.64
<i>F</i>	5.83***	10.36***	8.95***	14.09***	17.67***	9.26***	49.35***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

TRDV: Trading volume

Other variables are defined before.

Appendix (14) - Panel B: Relative to Average Annual Share Price with Control Variables

AP = $\theta_0 + \theta_1 \text{TRDV} + \theta_2 \text{E} + \theta_3 \text{E} \cdot \text{TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV} \cdot \text{TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF} \cdot \text{TRDV} + \theta_8 \text{SIZE} + \theta_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
θ_1	0.17	0.09	0.25	-0.22	0.29	-0.37	0.13
<i>t-test</i>	0.36	0.37	0.52	-0.49	0.74	-0.34	0.85
θ_2	0.32	0.54	0.28	0.37	0.32	0.35	0.41
<i>t-test</i>	3.14***	7.08***	2.16**	3.29***	2.05**	2.22**	9.28***
θ_3	0.16	0.39	0.43	0.42	0.30	-0.44	0.27
<i>t-test</i>	0.57	2.01**	1.45	1.68*	0.77	-0.53	2.55**
θ_4	0.69	0.55	0.49	0.57	0.56	0.48	0.58
<i>t-test</i>	7.15***	6.43***	4.93***	6.80***	5.54***	4.42***	15.09***
θ_5	0.23	0.18	-0.04	0.44	0.18	0.43	0.27
<i>t-test</i>	0.84	1.14	-0.15	2.51**	0.59	0.97	3.10***
θ_6	0.23	0.34	0.02	0.29	0.28	0.40	0.24
<i>t-test</i>	1.68*	3.59***	0.18	2.06**	2.92***	3.24***	5.08***
θ_7	0.22	-0.10	-0.16	-0.47	0.29	0.32	-0.003
<i>t-test</i>	0.98	-0.79	-0.56	-1.56	1.42	1.46	-0.05
θ_8	-0.03	0.27	0.12	0.21	-0.05	-0.13	0.08
<i>t-test</i>	-0.24	2.49**	0.84	2.57**	-0.43	-0.86	1.79*
θ_9	0.03	0.10	0.20	-0.04	-0.02	-0.06	0.05
<i>t-test</i>	0.25	1.11	1.61	-0.42	-0.15	-0.38	1.15
Adj. R^2	0.71	0.68	0.62	0.80	0.69	0.63	0.65
<i>F</i>	5.88***	13.02***	7.79***	11.51***	13.01***	7.11***	40.87***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (14) - Panel C: Relative to Annual Closing Share Price without Control Variables

CP = $\theta_0 + \theta_1 \text{TRDV} + \theta_2 \text{E} + \theta_3 \text{E*TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV*TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF*TRDV} + e$							
Statistics \ Yrs	2004	2005	2006	2007	2008	2009	Pooled
θ_1	-0.02	0.21	0.71	0.50	0.15	-0.84	0.21
<i>t-test</i>	-0.05	0.75	1.57	1.15	0.38	-0.76	1.40
θ_2	0.44	0.67	0.43	0.46	0.33	0.39	0.51
<i>t-test</i>	4.60***	8.33***	3.41***	4.27***	2.28**	2.53**	11.92***
θ_3	-0.01	0.37	0.62	0.30	0.26	-0.70	0.26
<i>t-test</i>	-0.03	1.72*	2.16**	1.18	0.66	-0.83	2.42**
θ_4	0.75	0.67	0.49	0.54	0.47	0.40	0.58
<i>t-test</i>	9.44***	7.73***	5.03***	6.48***	4.84***	3.62***	15.86***
θ_5	0.45	0.37	-0.14	0.28	0.23	0.59	0.32
<i>t-test</i>	1.57	2.12**	-0.61	1.54	0.80	1.29	3.68***
θ_6	0.13	0.44	0.03	0.31	0.37	0.36	0.29
<i>t-test</i>	0.93	4.33***	0.31	2.45**	3.73***	2.97***	6.09***
θ_7	0.17	-0.04	-0.04	0.23	0.27	0.22	0.06
<i>t-test</i>	0.75	-0.25	-0.13	0.79	1.39	0.99	0.88
Adj.R ²	0.76	0.67	0.55	0.76	0.66	0.58	0.67
F	5.76***	11.47***	11.21***	13.55***	14.73***	7.24***	48.34***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (14) - Panel D: Relative to Annual Closing Share Price with Control Variables

CP = $\theta_0 + \theta_1 \text{TRDV} + \theta_2 \text{E} + \theta_3 \text{E*TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV*TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF*TRDV} + \theta_8 \text{SIZE} + \theta_9 \text{LEVRG} + e$							
Statistics \ Yrs	2004	2005	2006	2007	2008	2009	Pooled
θ_1	-0.01	0.21	0.51	0.25	0.15	-0.80	0.15
<i>t-test</i>	-0.03	0.46	1.09	0.55	0.37	-0.71	0.97
θ_2	0.41	0.63	0.35	0.37	0.31	0.34	0.48
<i>t-test</i>	4.36***	8.05***	2.70***	3.26***	1.98*	2.19**	11.05***
θ_3	0.09	0.44	0.53	0.19	0.28	-0.72	0.25
<i>t-test</i>	0.34	2.28**	1.83*	0.71	0.68	-0.82	2.33**
θ_4	0.71	0.63	0.47	0.54	0.59	0.44	0.60
<i>t-test</i>	8.10***	7.22***	4.47***	6.39***	5.65***	3.77***	15.44***
θ_5	0.39	0.24	-0.17	0.29	0.23	0.52	0.27
<i>t-test</i>	1.44	1.53	-0.71	1.59	0.68	1.11	3.08***
θ_6	0.21	0.44	-0.02	0.25	0.37	0.43	0.30
<i>t-test</i>	1.61	4.61***	-0.20	1.76*	3.69***	3.38***	6.32***
θ_7	0.09	-0.03	-0.10	0.15	0.25	0.27	0.04
<i>t-test</i>	0.42	-0.20	-0.35	0.49	1.18	1.17	0.57
θ_8	0.08	0.12	-0.03	0.12	-0.02	-0.13	0.04
<i>t-test</i>	0.76	1.13	-0.21	1.34	-0.18	-0.78	0.79
θ_9	0.06	0.11	0.20	-0.04	-0.06	-0.02	0.04
<i>t-test</i>	0.56	1.18	1.48	-0.37	-0.46	-0.11	0.96
Adj.R ²	0.75	0.70	0.55	0.76	0.64	0.57	0.67
F	6.24***	13.22***	8.86***	10.78***	10.68***	5.72***	40.21***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (14) - Panel E: Relative to ATM-Share Price without Control Variables

ATMP = $\theta_0 + \theta_1 \text{TRDV} + \theta_2 \text{E} + \theta_3 \text{E*TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV*TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF*TRDV} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
θ_1	0.15	0.10	0.23	-0.03	-0.30	0.12	0.11
<i>t-test</i>	0.31	0.35	0.46	-0.07	-0.76	0.11	0.69
θ_2	0.26	0.48	0.35	0.42	0.18	0.36	0.35
<i>t-test</i>	2.32**	5.37***	2.52**	3.73***	1.17	2.28**	7.34***
θ_3	0.03	0.16	0.45	0.63	-0.19	-0.17	0.19
<i>t-test</i>	0.11	0.74	1.43	2.39**	-0.49	-0.20	1.72*
θ_4	0.65	0.59	0.57	0.53	0.49	0.41	0.55
<i>t-test</i>	7.23***	6.54***	5.63***	6.05***	5.29***	3.92***	14.37***
θ_5	0.20	0.39	0.16	0.30	0.58	0.35	0.34
<i>t-test</i>	0.68	2.20**	0.64	1.59	1.97*	0.77	3.84**
θ_6	0.15	0.31	0.11	0.33	0.19	0.33	0.24
<i>t-test</i>	1.05	3.02***	0.95	2.52**	1.87*	2.83***	4.90***
θ_7	0.34	0.04	-0.09	-0.55	0.27	0.36	0.10
<i>t-test</i>	1.48	0.24	-0.31	-1.82*	1.40	1.63	1.36
Adj. R^2	0.62	0.65	0.61	0.73	0.79	0.66	0.63
<i>F</i>	5.57***	10.26***	7.45***	12.17***	14.85***	8.35***	45.78***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (14) - Panel F: Relative to ATM-Share Price with Control Variables

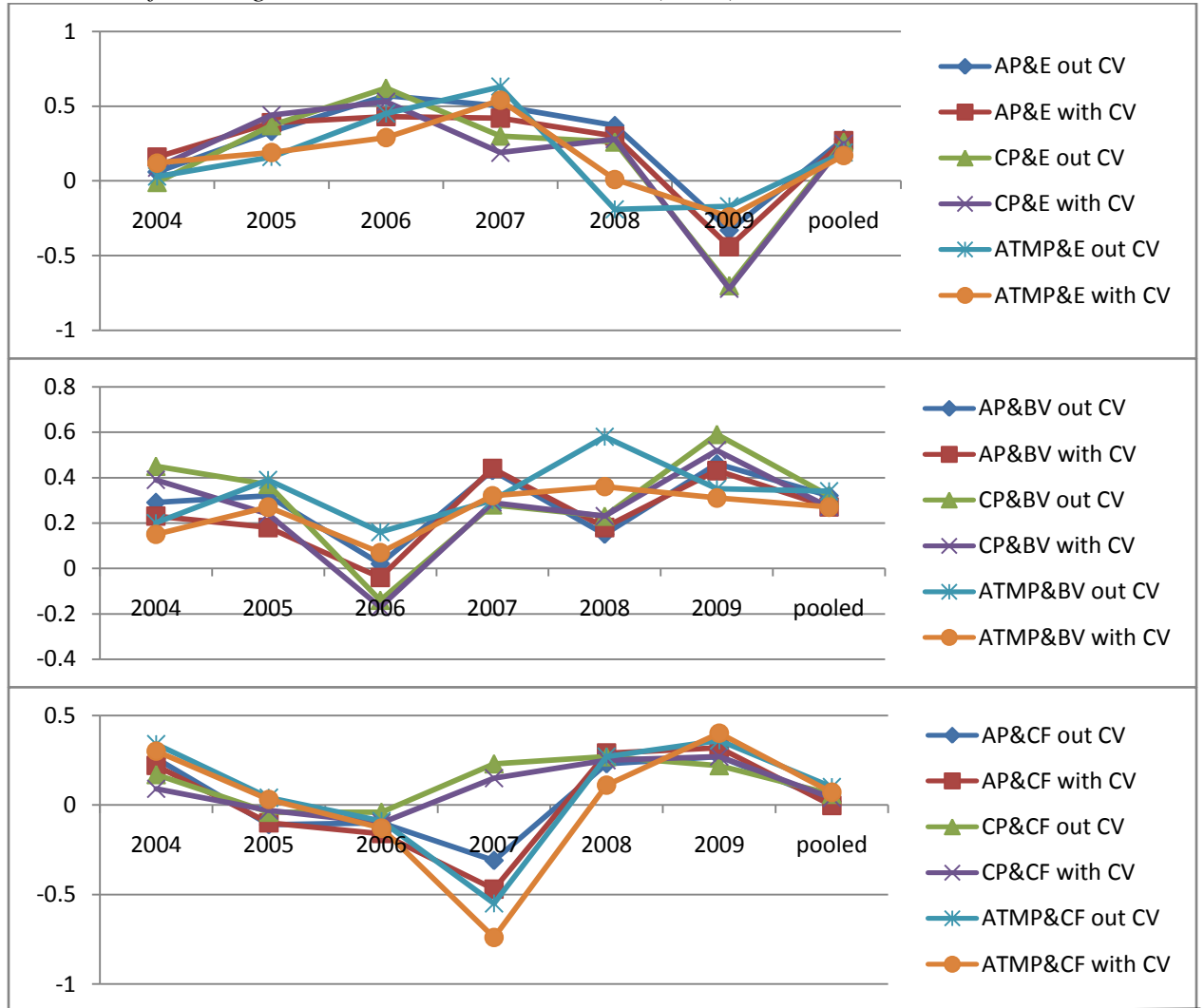
ATMP = $\theta_0 + \theta_1 \text{TRDV} + \theta_2 \text{E} + \theta_3 \text{E*TRDV} + \theta_4 \text{BV} + \theta_5 \text{BV*TRDV} + \theta_6 \text{CF} + \theta_7 \text{CF*TRDV} + \theta_8 \text{SIZE} + \theta_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
θ_1	0.19	-0.03	-0.04	-0.33	-0.26	0.08	0.02
<i>t-test</i>	0.40	-0.12	-0.09	-0.74	-0.67	0.07	0.13
θ_2	0.23	0.42	0.22	0.30	0.06	0.31	0.29
<i>t-test</i>	2.09**	4.92***	1.68*	2.64***	0.41	1.91*	6.24***
θ_3	0.12	0.19	0.29	0.54	0.01	-0.24	0.17
<i>t-test</i>	0.43	0.94	0.94	2.05**	0.03	-0.28	1.60
θ_4	0.62	0.50	0.53	0.53	0.57	0.48	0.53
<i>t-test</i>	6.10***	5.48***	5.16***	5.93***	5.91***	4.38***	13.41***
θ_5	0.15	0.27	0.07	0.32	0.36	0.31	0.27
<i>t-test</i>	0.52	1.64	0.29	1.74*	1.47	0.68	3.08***
θ_6	0.25	-0.26	0.13	0.26	0.17	0.40	0.24
<i>t-test</i>	1.73*	-2.37**	1.11	1.77*	1.68*	3.30***	5.07***
θ_7	0.30	0.03	-0.13	-0.74	0.11	0.40	0.07
<i>t-test</i>	1.29	0.23	-0.46	-2.36**	0.53	1.80*	0.99
θ_8	0.000	0.30	0.18	0.27	0.07	-0.13	0.18
<i>t-test</i>	-0.004	2.90**	1.29	3.15***	0.09	-0.87	3.97***
θ_9	0.01	0.02	0.09	-0.02	0.69	0.004	-0.001
<i>t-test</i>	0.08	0.26	0.69	-0.20	0.86	0.03	-0.03
Adj. R^2	0.60	0.72	0.63	0.78	0.79	0.65	0.65
<i>F</i>	5.33***	11.64***	7.01***	10.36***	12.60***	6.42***	41.78***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (15)

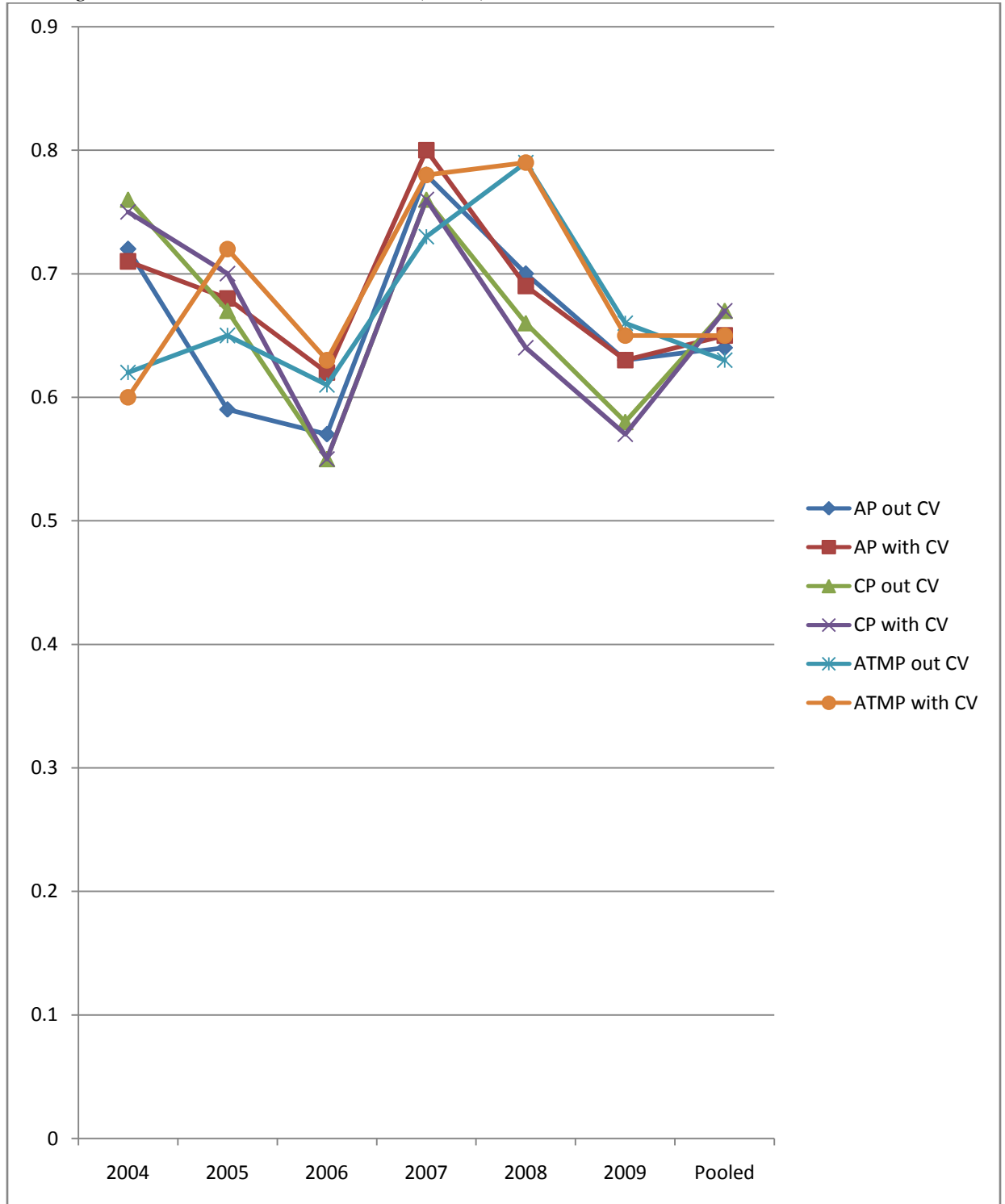
Yearly and Pooled Coefficients Trend: The Influence of Trading Volume on the Value Relevance of Earnings, Book Value, and Cash Flows (H2-2)



All terms are defined before.

Appendix (16)

Yearly and Pooled R^2 Trend: The Influence of Trading Volume on the Value Relevance of Earnings, Book Value, and Cash Flows (H2-2)



All terms are defined before.

Appendix (17)

Yearly and Pooled Regressions: The Influence of Financial Disclosure Time on the Value Relevance of Earnings, Book Value, and Cash Flows (H3-1)

Appendix (17) - Panel A: Relative to Average Annual Share Price without Control Variables

AP = $\varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
φ_1	-0.16	0.32	0.26	0.41	0.16	0.42	0.22
<i>t-test</i>	-0.53	1.51	0.73	1.67*	0.77	1.38	1.90*
φ_2	0.35	0.59	0.45	0.49	0.40	0.42	0.45
<i>t-test</i>	3.44***	6.98***	3.49***	4.46***	2.86***	2.68***	9.93***
φ_3	0.05	0.36	0.23	0.36	0.01	0.33	0.23
<i>t-test</i>	0.22	1.92*	1.06	1.97*	0.06	1.18	2.51**
φ_4	0.68	0.63	0.55	0.54	0.46	0.43	0.55
<i>t-test</i>	7.74***	6.96***	5.42***	6.59***	4.77***	4.69***	14.35***
φ_5	0.25	0.35	0.30	0.34	0.56	0.33	0.35
<i>t-test</i>	1.45	2.33**	1.52	2.51**	3.70***	2.09**	5.06***
φ_6	0.17	0.33	0.04	0.33	0.27	0.35	0.23
<i>t-test</i>	1.22	3.24***	0.39	2.61**	2.58**	3.13***	4.94***
φ_7	0.001	-0.09	0.002	0.12	0.17	-0.02	0.01
<i>t-test</i>	0.01	-0.70	0.01	0.86	1.25	-0.09	0.07
Adj.R ²	0.71	0.62	0.57	0.79	0.70	0.61	0.64
F	6.82***	12.72***	8.29***	21.36***	19.79***	12.38***	53.13***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

DTIM: Financial disclosure time.

Other variables are defined before.

Appendix (17) - Panel B: Relative to Average Annual Share Price with Control Variables

AP = $\varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_{12} \text{CF} + \varphi_7 \text{CF*DTIM} + \varphi_8 \text{SIZE} + \varphi_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
φ_1	-0.08	0.40	0.12	0.40	0.16	0.43	0.22
<i>t-test</i>	-0.26	2.05**	0.37	1.71*	0.76	1.40	1.96**
φ_2	0.31	0.54	0.34	0.41	0.39	0.38	0.41
<i>t-test</i>	3.10***	7.13***	2.59**	3.56***	2.60**	2.41**	9.01***
φ_3	-0.03	0.42	0.09	0.33	0.01	0.33	0.21
<i>t-test</i>	-0.14	2.35**	0.42	1.87*	0.05	1.18	2.33***
φ_4	0.62	0.56	0.51	0.56	0.57	0.54	0.58
<i>t-test</i>	6.41***	6.53***	5.03***	6.70***	5.54***	4.99***	14.92***
φ_5	0.11	0.29	0.31	0.30	0.59	0.32	0.30
<i>t-test</i>	0.66	2.01**	1.64	2.19**	3.70***	1.93*	4.35***
φ_6	0.24	0.35	0.03	0.27	0.28	0.42	0.24
<i>t-test</i>	1.68*	3.70***	0.29	1.91	2.53	3.50***	5.05***
φ_7	0.11	-0.06	-0.06	0.12	0.16	0.02	0.01
<i>t-test</i>	0.72	-0.50	-0.28	0.86	1.17	0.09	0.18
φ_8	0.04	0.19	0.15	0.18	-0.05	-0.04	0.09
<i>t-test</i>	0.36	1.89*	1.06	2.23**	-0.45	-0.25	2.11**
φ_9	0.05	0.17	0.14	-0.03	-0.10	-0.12	0.05
<i>t-test</i>	0.41	1.91*	1.04	-0.33	-0.70	-0.73	1.14
Adj.R ²	0.69	0.71	0.60	0.81	0.70	0.60	0.65
F	7.39***	12.49***	8.72***	18.49***	14.41***	9.13***	46.20***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (17) - Panel C: Relative to Annual Closing Share Price without Control Variables

CP = $\varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
φ_1	-0.02	0.49	0.33	0.28	0.23	0.51	0.30
<i>t-test</i>	-0.06	2.45**	0.97	1.04	1.06	1.62	2.60***
φ_2	0.46	0.67	0.48	0.47	0.41	0.40	0.50
<i>t-test</i>	4.69***	8.28***	3.70***	4.31***	2.81***	2.59**	11.66***
φ_3	0.23	0.43	0.27	0.29	0.04	0.42	0.31
<i>t-test</i>	1.01	2.36**	1.26	1.45	0.22	1.43	3.41***
φ_4	0.74	0.66	0.50	0.52	0.48	0.44	0.58
<i>t-test</i>	8.60***	7.51***	5.06***	6.33***	4.90***	4.20***	15.82***
φ_5	0.24	0.34	0.17	0.29	0.58	0.25	0.33
<i>t-test</i>	1.35	2.45**	0.87	1.92*	3.77***	1.51	4.63***
φ_6	0.19	0.43	0.04	0.29	0.36	0.37	0.28
<i>t-test</i>	1.32	4.34***	0.42	2.27**	3.23	3.14***	6.09***
φ_7	-0.07	-0.06	-0.03	0.03	0.15	-0.06	-0.02
<i>t-test</i>	-0.48	-0.50	-0.16	0.22	1.13	-0.30	-0.26
Adj.R ²	0.76	0.69	0.61	0.78	0.65	0.56	0.67
F	6.29***	15.13***	9.43***	15.70***	13.65***	10.60***	52.85***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (17) - Panel D: Relative to Annual Closing Share Price with Control Variables

CP = $\varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + \varphi_8 \text{SIZE} + \varphi_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
φ_1	0.04	0.53	0.23	0.27	0.23	0.52	0.30
<i>t-test</i>	0.13	2.74***	0.68	1.00	1.07	1.63	2.65***
φ_2	0.40	0.64	0.42	0.39	0.40	0.37	0.47
<i>t-test</i>	4.34***	8.15***	3.29***	3.42***	2.60**	2.32**	10.82***
φ_3	0.15	0.43	0.19	0.26	0.05	0.43	0.29
<i>t-test</i>	0.73	2.45**	0.88	1.29	0.25	1.44	3.26***
φ_4	0.67	0.65	0.48	0.53	0.59	0.49	0.59
<i>t-test</i>	7.25***	7.27***	4.84***	6.35***	5.65***	4.25***	15.31***
φ_5	0.10	0.34	0.20	0.26	0.60	0.25	0.28
<i>t-test</i>	0.58	2.41**	1.05	1.68*	3.67***	1.43	4.01***
φ_6	0.23	0.45	-0.003	0.23	0.37	0.44	0.29
<i>t-test</i>	1.70	4.69***	0.03	1.56	3.23***	3.57***	6.35***
φ_7	0.002	-0.03	-0.10	0.03	0.16	-0.03	-0.01
<i>t-test</i>	0.01	-0.27	-0.49	0.17	1.13	-0.16	-0.19
φ_8	0.10	0.05	-0.04	0.11	-0.03	-0.04	0.04
<i>t-test</i>	1.18	0.53	-0.25	1.26	-0.20	-0.27	0.89
φ_9	0.10	0.16	0.12	0.01	-0.11	-0.09	0.04
<i>t-test</i>	1.18	1.70*	0.93	0.06	-0.75	-0.48	0.97
Adj.R ²	0.77	0.71	0.60	0.78	0.64	0.54	0.57
F	7.67***	12.80***	8.23***	12.78***	18.88***	7.77***	43.63***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (17) - Panel E: Relative to ATM-Share Price without Control Variables

ATMP = $\varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
φ_1	-0.15	0.07	0.17	0.53	-0.25	0.37	0.09
<i>t-test</i>	-0.47	0.30	0.47	1.97*	-1.26	1.23	0.76
φ_2	0.26	0.47	0.36	0.44	0.23	0.38	0.33
<i>t-test</i>	2.32*	5.15***	2.56**	3.97***	1.56	2.33**	6.95***
φ_3	0.02	0.12	0.11	0.40	-0.11	0.20	0.09
<i>t-test</i>	0.09	0.63	0.47	2.02**	-0.61	0.72	0.91
φ_4	0.63	0.58	0.58	0.52	0.50	0.46	0.55
<i>t-test</i>	6.69***	6.29***	5.57***	5.93***	5.35***	4.51***	14.35***
φ_5	0.19	0.39	0.38	0.18	0.78	0.32	0.37
<i>t-test</i>	1.05	2.54**	1.86*	1.21	5.41***	2.01**	5.21***
φ_6	0.21	0.32	0.12	0.31	0.19	0.33	0.23
<i>t-test</i>	1.43	3.15***	1.03	2.43**	1.62	3.05***	4.90***
φ_7	-0.04	0.002	0.11	0.15	0.07	0.03	0.03
<i>t-test</i>	-0.26	0.01	0.48	0.99	0.54	0.15	0.47
Adj.R ²	0.62	0.68	0.51	0.70	0.82	0.63	0.64
F	6.06***	11.21***	6.89***	16.37***	22.55***	12.64***	48.76***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (17) - Panel F: Relative to ATM-Share Price with Control Variables

ATMP = $\varphi_0 + \varphi_1 \text{DTIM} + \varphi_2 \text{E} + \varphi_3 \text{E*DTIM} + \varphi_4 \text{BV} + \varphi_5 \text{BV*DTIM} + \varphi_6 \text{CF} + \varphi_7 \text{CF*DTIM} + \varphi_8 \text{SIZE} + \varphi_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
φ_1	-0.07	0.14	0.06	0.54	-0.28	0.38	0.09
<i>t-test</i>	-0.22	0.64	0.16	2.12**	-1.42	1.25	0.83
φ_2	0.22	0.42	0.27	0.35	0.14	0.34	0.28
<i>t-test</i>	2.00**	4.87***	1.80*	2.93***	0.94	2.04**	5.91***
φ_3	-0.05	0.19	-0.03	0.39	-0.16	0.20	0.06
<i>t-test</i>	-0.24	1.00	-0.14	2.02**	-0.86	0.72	0.65
φ_4	0.58	0.52	0.54	0.53	0.57	0.53	0.53
<i>t-test</i>	5.56***	5.55***	5.17***	5.82***	5.92***	4.90***	13.36***
φ_5	0.05	0.31	0.38	0.11	0.78	0.30	0.30
<i>t-test</i>	0.31	2.02**	1.87*	0.78	5.31***	1.84*	4.34***
φ_6	0.27	0.34	0.15	0.24	0.16	0.41	0.23
<i>t-test</i>	1.82*	3.64***	1.23	1.66*	1.42	3.60***	5.10***
φ_7	0.06	0.02	0.07	0.16	0.03	0.06	0.04
<i>t-test</i>	0.39	0.12	0.30	1.09	0.24	0.33	0.68
φ_8	0.01	0.17	0.21	0.22	0.08	-0.04	0.17
<i>t-test</i>	0.10	1.84*	1.36	2.21**	0.81	-0.25	4.05***
φ_9	0.06	0.11	0.03	-0.02	0.03	-0.09	0.003
<i>t-test</i>	0.46	1.20	0.17	-0.18	0.28	-0.54	0.06
Adj.R ²	0.61	0.73	0.52	0.72	0.81	0.62	0.66
F	6.33***	9.75***	6.65***	15.12***	17.96***	9.34***	46.37***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (18)

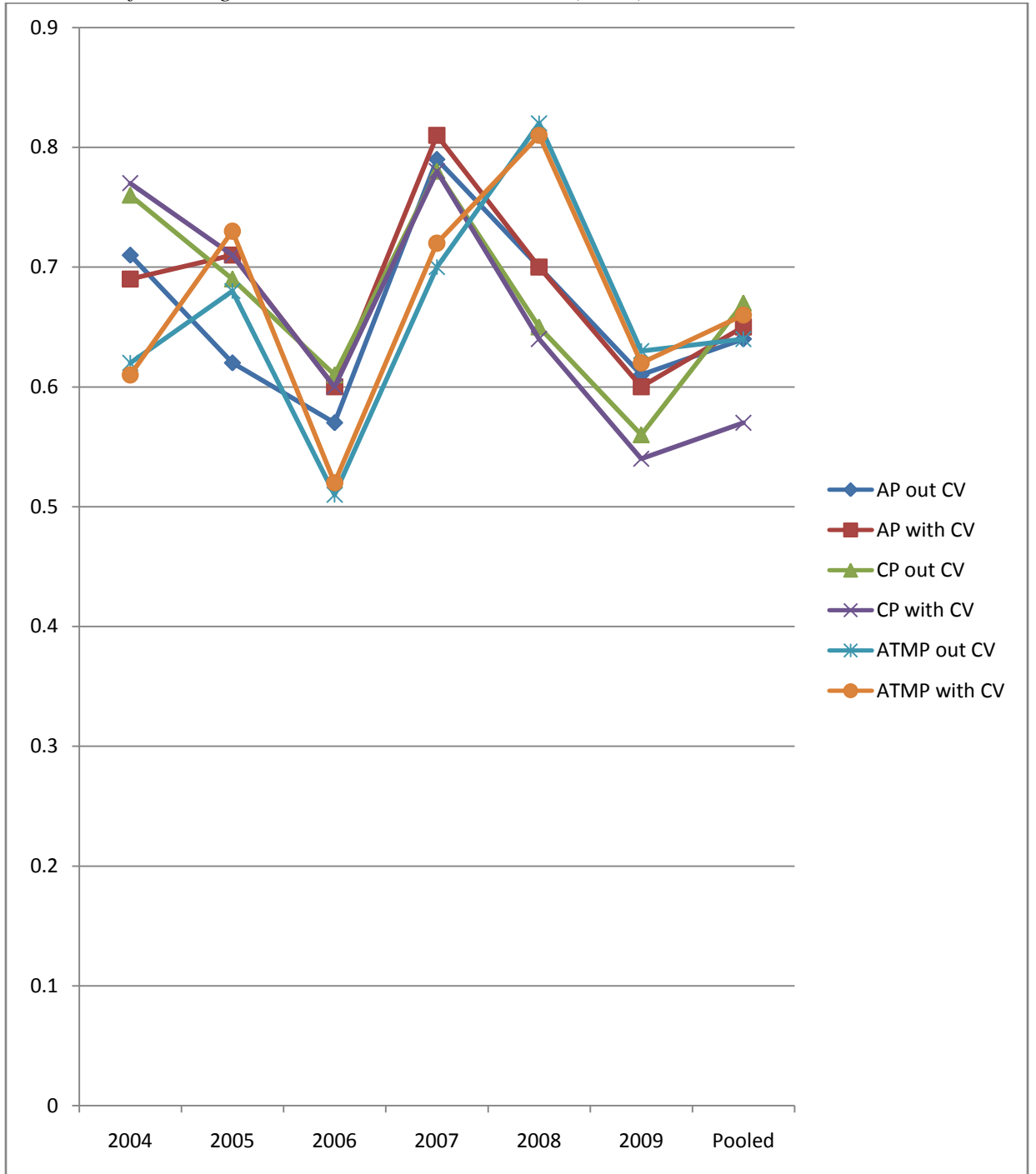
Yearly and Pooled Coefficients Trend: The Influence of Financial Disclosure Time on the Value Relevance of Earnings, Book Value, and Cash Flows (H3-1)



All terms are defined before.

Appendix (19)

Yearly and Pooled R^2 Trend: The Influence of Financial Disclosure Time on the Value Relevance of Earnings, Book Value, and Cash Flows (H3-1)



Other terms are defined before.

Appendix (20)

Yearly and Pooled Regressions: The Influence of Financial Disclosure Level on the Value Relevance of Earnings, Book Value, and Cash Flows (H3-2)

Appendix (20) - Panel A: Relative to Average Annual Share Price without Control Variables

AP = $\gamma_0 + \gamma_1 \text{DLVL} + \gamma_2 \text{E} + \gamma_3 \text{E*DLVL} + \gamma_4 \text{BV} + \gamma_5 \text{BV*DLVL} + \gamma_6 \text{CF} + \gamma_7 \text{CF*DLVL} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
γ_1	0.33	0.04	-0.35	0.48	0.06	0.10	0.05
<i>t-test</i>	1.00	0.15	-0.54	1.26	0.26	0.34	0.37
γ_2	0.34	0.60	0.41	0.47	0.42	0.34	0.46
<i>t-test</i>	3.32***	7.08***	3.00***	4.28***	2.94***	2.23**	10.22***
γ_3	0.34	0.23	-0.17	0.38	0.07	0.18	0.13
<i>t-test</i>	1.41	0.57	-0.58	1.62	0.36	0.78	1.27
γ_4	0.73	0.64	0.53	0.55	0.46	0.46	0.58
<i>t-test</i>	7.85***	7.17***	5.30***	6.70***	4.77***	4.21***	15.61***
γ_5	0.35	-0.06	0.39	0.19	0.55	0.54	0.37
<i>t-test</i>	2.02**	-0.39	1.92*	1.06	3.42***	2.97***	5.17***
γ_6	0.12	0.32	0.05	0.33	0.27	0.35	0.23
<i>t-test</i>	0.88	3.07***	0.40	2.62**	2.55**	3.12***	4.95***
γ_7	-0.01	-0.28	-0.10	0.08	0.12	0.04	0.07
<i>t-test</i>	-0.06	-0.76	-0.27	0.40	0.82	0.22	0.97
<i>Adj.R</i> ²	0.72	0.59	0.57	0.78	0.69	0.61	0.65
<i>F</i>	8.19***	7.81***	11.13***	12.63***	16.50***	9.94***	51.15***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

DLVL: Financial disclosure level.

Other variables are defined before.

Appendix (20) - Panel B: Relative to Average Annual Share Price with Control Variables

AP = $\gamma_0 + \gamma_1 \text{DLVL} + \gamma_2 \text{E} + \gamma_3 \text{E*DLVL} + \gamma_4 \text{BV} + \gamma_5 \text{BV*DLVL} + \gamma_6 \text{CF} + \gamma_7 \text{CF*DLVL} + \gamma_8 \text{SIZE} + \gamma_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
γ_1	0.44	0.18	-0.04	0.32	0.07	0.10	0.05
<i>t-test</i>	1.43	0.73	-0.07	0.85	0.29	0.32	0.37
γ_2	0.31	0.54	0.31	0.38	0.41	0.33	0.41
<i>t-test</i>	3.01***	7.15***	2.31**	3.31***	2.66**	2.15**	9.26***
γ_3	0.34	0.49	-0.06	0.32	0.07	0.18	0.13
<i>t-test</i>	1.51	1.33	-0.24	1.38	0.32	0.75	1.37
γ_4	0.66	0.57	0.49	0.57	0.56	0.52	0.58
<i>t-test</i>	6.23***	6.61***	4.97***	6.76***	5.55***	4.68***	14.88***
γ_5	0.23	-0.06	0.25	0.22	0.57	0.55	0.31
<i>t-test</i>	1.46	-0.48	1.31	1.26	3.25***	2.69**	4.43***
γ_6	0.23	0.35	0.03	0.25	0.27	0.41	0.24
<i>t-test</i>	1.69*	3.68***	0.28	1.77*	2.51**	3.46***	5.10***
γ_7	0.06	-0.35	0.02	0.03	0.13	0.02	0.06
<i>t-test</i>	0.47	-1.00	0.04	0.14	0.80	0.13	0.84
γ_8	-0.01	0.25	0.11	0.22	-0.04	-0.06	0.08
<i>t-test</i>	-0.09	2.67**	0.73	2.51**	-0.31	-0.42	1.80*
γ_9	0.03	0.12	0.16	-0.07	-0.06	-0.11	0.04
<i>t-test</i>	0.29	1.29	1.26	-0.63	-0.42	-0.68	1.01
<i>Adj.R</i> ²	0.70	0.69	0.59	0.80	0.68	0.60	0.65
<i>F</i>	8.96***	10.11***	10.86***	10.96***	11.93***	7.12***	46.14***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (20) - Panel C: Relative to Annual Closing Share Price without Control Variables

CP = $\gamma_0 + \gamma_1 \text{DLVL} + \gamma_2 \text{E} + \gamma_3 \text{E*DLVL} + \gamma_4 \text{BV} + \gamma_5 \text{BV*DLVL} + \gamma_6 \text{CF} + \gamma_7 \text{CF*DLVL} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
γ_1	0.34	0.06	0.39	0.21	0.08	0.16	0.12
<i>t-test</i>	1.01	0.23	0.62	0.55	0.35	0.54	0.85
γ_2	0.44	0.67	0.45	0.46	0.42	0.33	0.51
<i>t-test</i>	4.57***	8.32***	3.49***	4.23***	2.88***	2.20**	11.91***
γ_3	0.35	0.16	0.13	0.20	0.04	0.22	0.17
<i>t-test</i>	1.41	0.39	0.48	0.86	0.21	0.92	1.66*
γ_4	0.81	0.67	0.49	0.53	0.48	0.43	0.58
<i>t-test</i>	8.89***	7.76***	4.98***	6.51***	4.90***	3.92***	15.79***
γ_5	0.34	0.05	0.17	0.25	0.61	0.46	0.37
<i>t-test</i>	1.92*	0.36	0.96	1.39	3.69***	2.45**	5.23***
γ_6	0.12	0.43	0.04	0.29	0.35	0.37	0.28
<i>t-test</i>	0.83	4.33***	0.41	2.28**	3.21***	3.13***	6.05***
γ_7	0.02	-0.13	0.16	0.05	0.16	0.02	0.08
<i>t-test</i>	0.16	-0.35	0.45	0.27	1.00	0.14	1.11
<i>Adj.R²</i>	0.76	0.67	0.55	0.75	0.64	0.56	0.67
<i>F</i>	7.33***	7.34***	12.53***	12.17***	15.61***	8.70***	52.87***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (20) - Panel D: Relative to Annual Closing Share Price with Control Variables

CP = $\gamma_0 + \gamma_1 \text{DLVL} + \gamma_2 \text{E} + \gamma_3 \text{E*DLVL} + \gamma_4 \text{BV} + \gamma_5 \text{BV*DLVL} + \gamma_6 \text{CF} + \gamma_7 \text{CF*DLVL} + \gamma_8 \text{SIZE} + \gamma_8 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
γ_1	0.47	0.19	0.61	0.08	0.08	0.15	0.11
<i>t-test</i>	1.54	0.74	1.00	0.20	0.36	0.49	0.48
γ_2	0.39	0.64	0.38	0.38	0.42	0.33	0.48
<i>t-test</i>	4.33***	8.12***	2.92***	3.29***	2.64**	2.12**	11.04***
γ_3	0.34	0.33	0.22	0.15	0.04	0.22	0.17
<i>t-test</i>	1.56	0.85	0.82	0.64	0.19	0.90	1.75*
γ_4	0.73	0.64	0.47	0.54	0.59	0.47	0.59
<i>t-test</i>	7.23***	7.40***	4.80***	6.46***	5.66***	3.69***	15.27***
γ_5	0.21	0.07	0.09	0.27	0.61	0.49	0.32
<i>t-test</i>	1.31	0.48	0.47	1.53	3.53***	2.32**	4.56***
γ_6	0.21	0.45	-0.01	0.22	0.36	0.44	0.30
<i>t-test</i>	1.61	7.74***	-0.06	1.48	3.22***	3.54***	6.33***
γ_7	0.09	-0.12	0.23	0.01	0.16	-0.002	0.07
<i>t-test</i>	0.66	-0.32	0.67	0.05	0.97	-0.01	0.96
γ_8	0.09	0.09	-0.07	0.10	-0.02	-0.09	0.03
<i>t-test</i>	1.00	0.98	-0.43	1.03	-0.15	-0.42	0.63
γ_9	0.07	0.13	0.17	-0.003	-0.10	-0.07	0.04
<i>t-test</i>	0.69	1.43	1.26	-0.03	-0.64	-0.41	0.69
<i>Adj.R²</i>	0.76	0.70	0.55	0.75	0.63	0.54	0.67
<i>F</i>	9.71***	8.02***	11.16***	10.00***	11.22***	6.26***	46.13***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (20) - Panel E: Relative to ATM-Share Price without Control Variables

ATMP = $\gamma_0 + \gamma_1 \text{DLVL} + \gamma_2 \text{E} + \gamma_3 \text{E*DLVL} + \gamma_4 \text{BV} + \gamma_5 \text{BV*DLVL} + \gamma_6 \text{CF} + \gamma_7 \text{CF*DLVL} + e$							
Statistics \ Yrs	2004	2005	2006	2007	2008	2009	Pooled
γ_1	0.26	-0.17	-0.69	0.65	-0.41	-0.03	-0.05
<i>t-test</i>	0.77	-0.65	-1.05	1.68*	-1.75*	-0.09	-0.35
γ_2	0.24	0.48	0.33	0.42	0.26	0.30	0.35
<i>t-test</i>	2.21**	5.25***	2.26**	3.68***	1.72*	1.93*	7.29***
γ_3	0.32	-0.06	-0.21	0.48	-0.12	0.02	0.03
<i>t-test</i>	1.28	-0.15	-0.73	2.00**	-0.56	0.10	0.32
γ_4	0.68	0.60	0.56	0.52	0.50	0.44	0.55
<i>t-test</i>	6.82***	6.51***	5.56***	5.90***	5.34***	4.17***	14.27***
γ_5	0.35	0.01	0.54	0.02	0.75	0.58	0.41
<i>t-test</i>	1.96*	0.09	2.66***	0.12	4.51***	3.21***	5.65***
γ_6	0.14	0.31	0.12	0.32	0.18	0.33	0.23
<i>t-test</i>	1.01	2.99***	1.05	2.40**	1.58	3.02***	4.88***
γ_7	-0.03	-0.09	-0.30	0.09	0.08	0.07	0.06
<i>t-test</i>	-0.18	-0.23	-0.80	0.43	0.51	0.38	0.80
<i>Adj.R</i> ²	0.63	0.65	0.52	0.66	0.80	0.63	0.63
<i>F</i>	8.93***	7.941***	10.22***	11.23***	14.83***	10.18***	47.53***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (20) - Panel F: Relative to ATM-Share Price with Control Variables

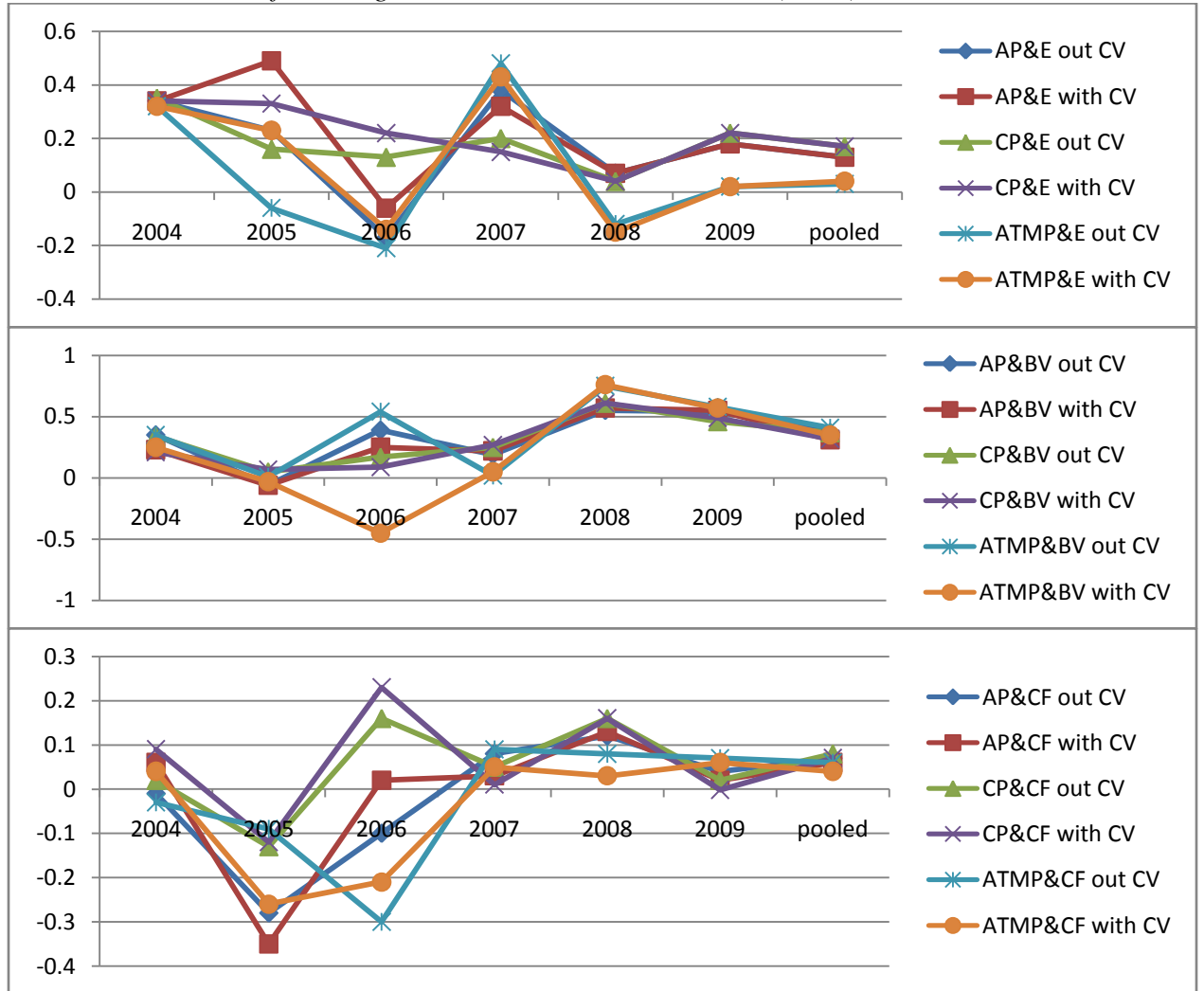
ATMP = $\gamma_0 + \gamma_1 \text{DLVL} + \gamma_2 \text{E} + \gamma_3 \text{E*DLVL} + \gamma_4 \text{BV} + \gamma_5 \text{BV*DLVL} + \gamma_6 \text{CF} + \gamma_7 \text{CF*DLVL} + \gamma_8 \text{SIZE} + \gamma_9 \text{LEVRG} + e$							
Statistics \ Yrs	2004	2005	2006	2007	2008	2009	Pooled
γ_1	0.36	-0.08	-0.46	0.50	-0.41	-0.02	-0.06
<i>t-test</i>	1.09	-0.33	-0.70	1.29	-1.80*	-0.06	-0.42
γ_2	0.21	0.42	0.25	0.34	0.16	0.29	0.29
<i>t-test</i>	1.93*	4.89***	1.68*	2.76**	1.02	1.85*	6.21***
γ_3	0.32	0.23	-0.14	0.43	-0.15	0.02	0.04
<i>t-test</i>	1.33	0.61	-0.84	1.80*	-0.76	0.08	0.39
γ_4	0.62	0.52	0.53	0.53	0.57	0.51	0.53
<i>t-test</i>	5.44***	5.64***	5.22***	5.85***	5.91***	4.51***	13.27***
γ_5	0.25	-0.03	-0.45	0.05	0.76	0.57	0.35
<i>t-test</i>	1.45	-0.22	-2.16**	0.25	4.56***	2.82***	4.92***
γ_6	0.25	0.34	0.15	0.22	0.16	0.41	0.24
<i>t-test</i>	1.74*	3.62***	1.22	1.48	1.39	3.51***	5.10***
γ_7	0.04	-0.26	-0.21	0.05	0.03	0.06	0.04
<i>t-test</i>	0.30	-0.72	-0.57	0.22	0.22	0.34	0.61
γ_8	-0.02	0.25	0.18	0.28	0.08	-0.06	0.17
<i>t-test</i>	-0.17	2.70***	1.12	2.61**	0.83	-0.43	3.75***
γ_9	0.04	0.05	0.04	-0.07	0.06	-0.07	-0.002
<i>t-test</i>	0.31	0.55	0.31	-0.69	0.50	-0.43	-0.05
<i>Adj.R</i> ²	0.61	0.71	0.52	0.70	0.80	0.62	0.65
<i>F</i>	7.30***	9.03***	8.73***	10.00***	12.69***	7.32***	45.45***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (21)

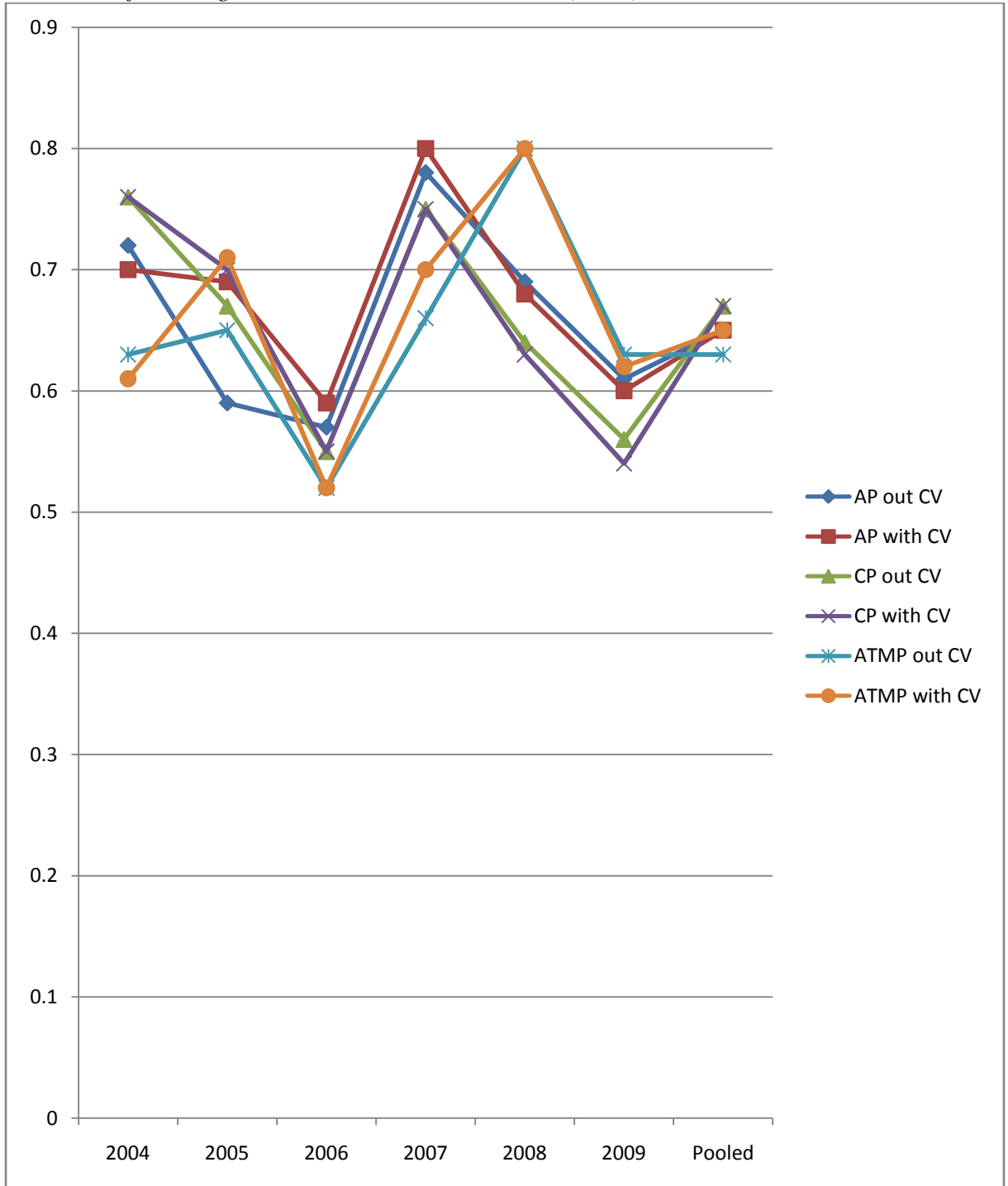
Yearly and Pooled Coefficients Trend: The Influence of Financial Disclosure Level on the Value Relevance of Earnings, Book Value, and Cash Flows (H3-2)



All terms are defined before.

Appendix (22)

Yearly and Pooled R^2 Trend: The Influence of Financial Disclosure Level on the Value Relevance of Earnings, Book Value, and Cash Flows (H3-2)



Other terms are defined before.

Appendix (23)

Yearly and Pooled Regressions: The Influence of Shareholders Number on the Value Relevance of Earnings, Book Value, and Cash Flows (H4-1)

Appendix (23) - Panel A: Relative to Average Annual Share Price without Control Variables

$$AP = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7$$

$$CF * \text{SHRHNO} + e$$

Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
δ_1	0.62	0.18	0.51	0.60	0.17	0.44	0.36
<i>t-test</i>	2.33**	0.70	1.07	1.78*	0.54	1.36	3.02***
δ_2	0.30	0.61	0.42	0.50	0.39	0.40	0.46
<i>t-test</i>	3.05***	2.25***	3.25***	4.62***	2.71***	2.75***	10.26***
δ_3	0.53	0.30	0.22	0.59	0.54	0.40	0.44
<i>t-test</i>	2.34**	1.49	0.93	2.72***	1.89*	1.43	4.85***
δ_4	0.74	0.65	0.53	0.56	0.47	0.45	0.58
<i>t-test</i>	8.40***	7.22***	5.32***	6.75***	4.85***	4.34***	15.63***
δ_5	0.30	0.45	0.13	0.23	0.42	0.34	0.34
<i>t-test</i>	1.57	2.54**	0.61	1.37	1.94*	2.00*	4.51***
δ_6	0.13	0.43	0.07	0.33	0.28	0.34	0.24
<i>t-test</i>	0.91	3.13***	0.59	2.59**	2.63**	3.16***	4.95***
δ_7	0.08	-0.07	0.12	0.06	0.04	0.35	0.05
<i>t-test</i>	0.52	-0.50	0.43	0.36	0.23	1.90*	0.71
<i>Adj.R</i> ²	0.74	0.61	0.56	0.78	0.71	0.62	0.64
<i>F</i>	8.19***	10.54***	8.53***	16.10***	13.95***	13.95***	58.72***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

SHRHNO: Shareholders number.

Other variables are defined before.

Appendix (23) - Panel B: Relative to Average Annual Share Price with Control Variables

$$AP = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7$$

$$CF * \text{SHRHNO} + \delta_8 \text{SIZE} + \delta_9 \text{LEVRG} + e$$

Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
δ_1	0.68	0.10	0.21	0.43	0.21	0.44	0.27
<i>t-test</i>	2.41**	0.42	0.40	1.18	0.61	1.34	2.21**
δ_2	0.28	0.55	0.32	0.42	0.37	0.35	0.41
<i>t-test</i>	2.80***	7.22***	2.41**	3.63***	2.41**	2.40**	9.27***
δ_3	0.48	0.25	0.15	0.49	0.55	0.38	0.40
<i>t-test</i>	2.11**	1.28	0.61	2.09**	1.88*	1.32	4.37***
δ_4	0.66	0.56	0.49	0.57	0.57	0.52	0.58
<i>t-test</i>	6.51***	6.34***	4.97***	6.78***	5.61***	4.74***	14.94***
δ_5	0.21	0.43	0.19	0.24	0.43	0.30	0.34
<i>t-test</i>	1.05	2.52**	0.88	1.36	1.93*	1.69*	4.36***
δ_6	0.23	0.35	0.05	0.27	0.28	0.41	0.24
<i>t-test</i>	1.67	3.67***	0.45	1.81*	2.57**	3.56***	5.04***
δ_7	0.18	-0.04	-0.01	0.05	0.06	0.39	0.02
<i>t-test</i>	1.00	-0.33	-0.03	0.30	0.29	1.96*	0.31
δ_8	0.04	0.21	0.07	0.18	-0.10	-0.01	0.09
<i>t-test</i>	0.38	2.05**	0.43	2.00*	-0.79	-0.06	1.94*
δ_9	0.02	0.15	0.15	-0.04	0.07	-0.13	0.05
<i>t-test</i>	0.19	1.65	1.06	-0.43	0.55	-0.81	1.11
<i>Adj.R</i> ²	0.72	0.70	0.56	0.79	0.69	0.60	0.65
<i>F</i>	6.43***	9.71***	6.89***	12.12***	12.10***	10.28***	45.71***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (23) - Panel C: Relative to Annual Closing Share Price without Control Variables

$$CP = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7 CF * \text{SHRHNO} + e$$

Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
δ_1	0.62	0.17	0.56	0.68	0.13	0.47	0.41
<i>t-test</i>	2.39**	0.65	1.21	1.96*	0.36	1.34	3.43***
δ_2	0.41	0.69	0.44	0.49	0.40	0.39	0.51
<i>t-test</i>	4.33***	8.22***	3.63***	4.62***	2.69***	2.64**	11.98***
δ_3	0.61	0.32	0.32	0.54	0.47	0.46	0.48
<i>t-test</i>	2.75***	1.50	1.40	2.42**	1.51	1.49	5.24***
δ_4	0.80	0.68	0.49	0.54	0.48	0.42	0.58
<i>t-test</i>	9.46***	7.71***	5.00***	6.50***	4.95***	3.87***	15.82***
δ_5	0.36	0.43	0.11	0.16	0.47	0.27	0.32
<i>t-test</i>	1.87*	2.35**	0.53	0.91	2.03**	1.44	4.20***
δ_6	0.12	0.43	0.06	0.30	0.36	0.36	0.29
<i>t-test</i>	0.86	4.31***	0.58	2.28**	3.28***	3.14***	6.07***
δ_7	0.03	-0.04	0.09	0.19	0.06	0.23	0.05
<i>t-test</i>	0.19	-0.27	0.31	1.05	0.31	1.13	0.83
<i>Adj.R</i> ²	0.77	0.67	0.56	0.74	0.67	0.57	0.67
<i>F</i>	8.63***	9.07***	9.75***	14.78***	13.32***	10.30***	59.25***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (23) - Panel D: Relative to Annual Closing Share Price with Control Variables

$$CP = \delta_0 + \delta_1 \text{SHRHNO} + \delta_2 E + \delta_3 E * \text{SHRHNO} + \delta_4 BV + \delta_5 BV * \text{SHRHNO} + \delta_6 CF + \delta_7 CF * \text{SHRHNO} + \delta_8 \text{SIZE} + \delta_9 \text{LEVRG} + e$$

Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
δ_1	0.61	0.14	0.40	0.51	0.14	0.46	0.33
<i>t-test</i>	2.22**	0.52	0.80	1.36	0.37	1.29	2.72***
δ_2	0.37	0.66	0.39	0.41	0.40	0.34	0.48
<i>t-test</i>	4.05***	8.45***	3.04***	3.67***	2.46**	2.31**	11.09***
δ_3	0.55	0.30	0.31	0.44	0.47	0.43	0.44
<i>t-test</i>	2.46**	1.39	1.29	1.82*	1.48	1.38	4.78***
δ_4	0.72	0.63	0.47	0.59	0.60	0.46	0.60
<i>t-test</i>	7.47***	7.09***	4.80***	6.39***	5.71***	4.03***	15.35***
δ_5	0.27	0.43	0.18	0.15	0.47	0.20	0.30
<i>t-test</i>	1.34	2.32**	0.83	0.81	1.92*	1.02	3.90***
δ_6	0.21	0.45	0.01	0.22	0.37	0.44	0.30
<i>t-test</i>	1.59	4.69***	0.10	1.52	3.26***	3.58***	6.32***
δ_7	0.08	-0.02	-0.01	0.19	0.07	0.27	0.04
<i>t-test</i>	0.43	-0.15	-0.03	1.05	0.32	1.27	0.57
δ_8	0.13	0.09	-0.09	0.12	-0.07	-0.06	0.03
<i>t-test</i>	1.42	0.89	-0.58	1.17	-0.52	-0.33	0.65
δ_9	0.08	0.13	0.15	-0.01	0.02	-0.08	0.04
<i>t-test</i>	0.84	1.36	1.06	-0.13	0.15	-0.43	1.08
<i>Adj.R</i> ²	0.78	0.69	0.54	0.74	0.65	0.55	0.67
<i>F</i>	6.95***	7.03***	7.41***	11.36***	9.56***	8.03***	45.72***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (23) - Panel E: Relative to ATM-Share Price without Control Variables

ATMP = $\delta_0 + \delta_1 \text{SHRHNO} + \delta_2 \text{E} + \delta_3 \text{E*SHRHNO} + \delta_4 \text{BV} + \delta_5 \text{BV*SHRHNO} + \delta_6 \text{CF} + \delta_7 \text{CF*SHRHNO} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
δ_1	0.52	0.14	0.39	0.67	0.06	0.36	0.30
<i>t-test</i>	1.83*	0.55	0.76	1.92*	0.19	1.00	2.47**
δ_2	0.21	0.49	0.35	0.45	0.25	0.36	0.35
<i>t-test</i>	1.94*	5.45***	2.49***	4.01***	1.68*	2.49**	7.34***
δ_3	0.43	0.16	0.13	0.59	0.19	0.29	0.32
<i>t-test</i>	1.79*	0.78	0.52	2.64**	0.64	0.99	3.44***
δ_4	0.67	0.60	0.56	0.52	0.50	0.43	0.55
<i>t-test</i>	7.16***	6.45***	5.58***	5.96***	5.38***	4.13***	14.34***
δ_5	0.26	0.49	0.22	0.19	0.60	0.35	0.36
<i>t-test</i>	1.26	2.82***	0.95	1.07	2.71***	1.91*	4.57***
δ_6	0.15	0.31	0.41	0.32	0.19	0.33	0.23
<i>t-test</i>	1.06	3.06***	1.22	2.39**	1.67*	3.07***	4.90***
δ_7	0.06	0.05	0.19	-0.03	0.17	0.31	0.07
<i>t-test</i>	0.35	0.35	0.64	-0.19	0.92	1.57	1.15
<i>Adj.R</i> ²	0.68	0.65	0.52	0.70	0.78	0.65	0.63
<i>F</i>	6.15***	11.49***	6.54***	14.52***	15.60***	11.48***	52.82***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (23) - Panel F: Relative to ATM-Share Price with Control Variables

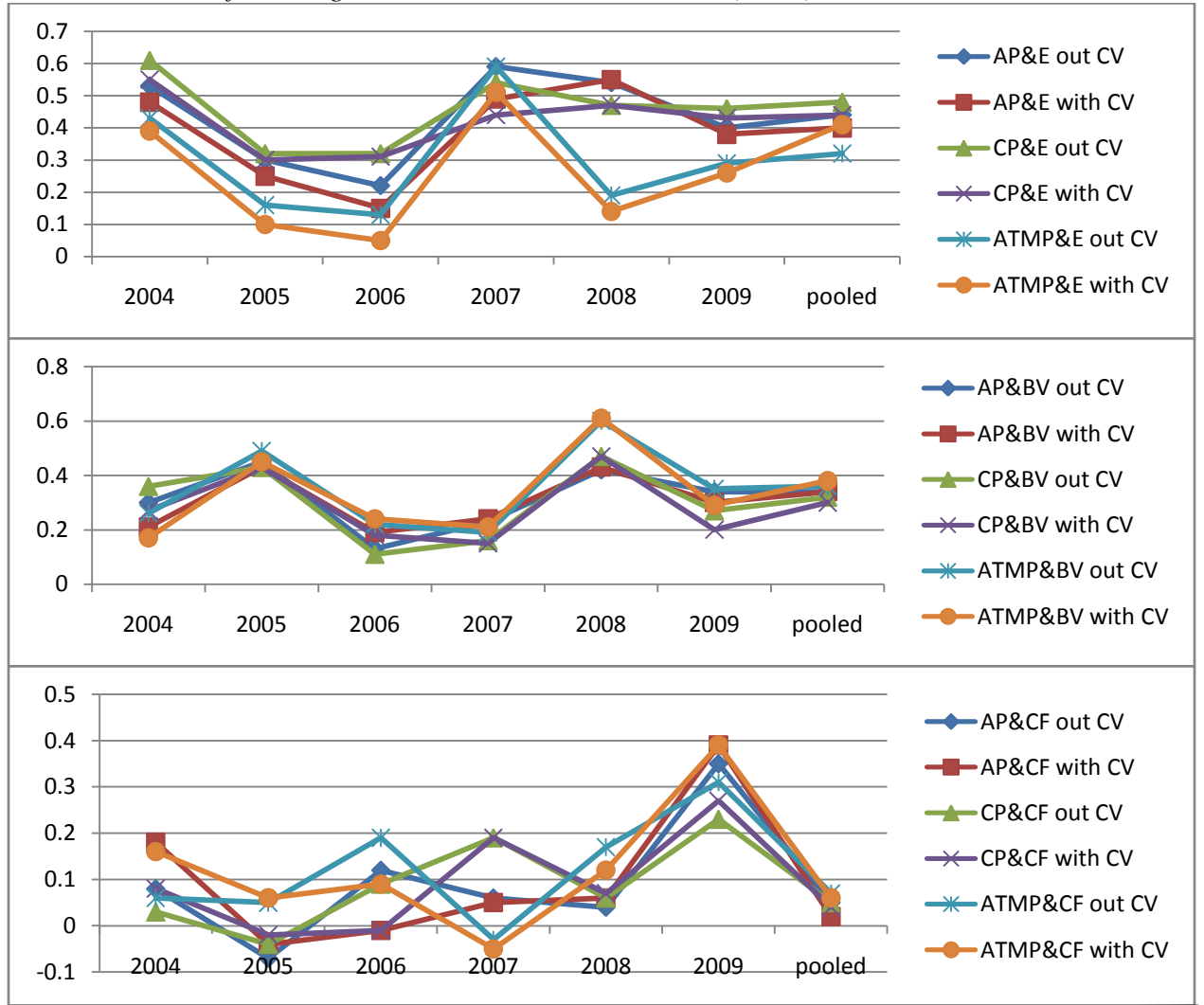
ATMP = $\delta_0 + \delta_1 \text{SHRHNO} + \delta_2 \text{E} + \delta_3 \text{E*SHRHNO} + \delta_4 \text{BV} + \delta_5 \text{BV*SHRHNO} + \delta_6 \text{CF} + \delta_7 \text{CF*SHRHNO} + \delta_8 \text{SIZE} + \delta_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
δ_1	0.58	0.09	0.10	0.53	-0.05	0.35	0.33
<i>t-test</i>	1.93*	0.28	0.19	1.38	-0.15	0.99	2.58***
δ_2	0.19	0.43	0.26	0.37	0.14	0.31	0.29
<i>t-test</i>	1.71*	5.02***	1.77*	3.08***	0.92	2.12**	6.22***
δ_3	0.39	0.10	0.05	0.51	0.14	0.26	0.41
<i>t-test</i>	1.58	0.53	0.17	2.08**	0.49	0.87	3.80***
δ_4	0.60	0.51	0.53	0.53	0.57	0.50	0.53
<i>t-test</i>	5.54***	5.32***	5.22***	5.89***	5.96***	4.61***	13.36***
δ_5	0.17	0.45	0.24	0.21	0.61	0.29	0.38
<i>t-test</i>	0.78	2.64**	1.02	1.13	2.69***	1.53	4.82***
δ_6	0.25	0.34	0.17	0.24	0.14	0.41	0.24
<i>t-test</i>	1.73*	3.63***	1.38	1.57	1.46	3.65***	5.09***
δ_7	0.16	0.06	0.09	-0.05	0.12	0.39	0.06
<i>t-test</i>	0.84	0.44	0.29	-0.27	0.62	1.73*	0.92
δ_8	0.03	0.22	0.15	0.20	0.04	-0.03	0.18
<i>t-test</i>	0.28	2.27**	0.88	1.89*	0.41	-0.18	3.88***
δ_9	0.03	0.07	0.02	-0.03	0.13	-0.07	-0.002
<i>t-test</i>	0.24	0.73	0.12	-0.28	1.33	-0.41	-0.06
<i>Adj.R</i> ²	0.67	0.71	0.50	0.72	0.79	0.63	0.65
<i>F</i>	4.84***	9.60***	5.18***	10.75***	12.08***	8.68***	41.55***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (24)

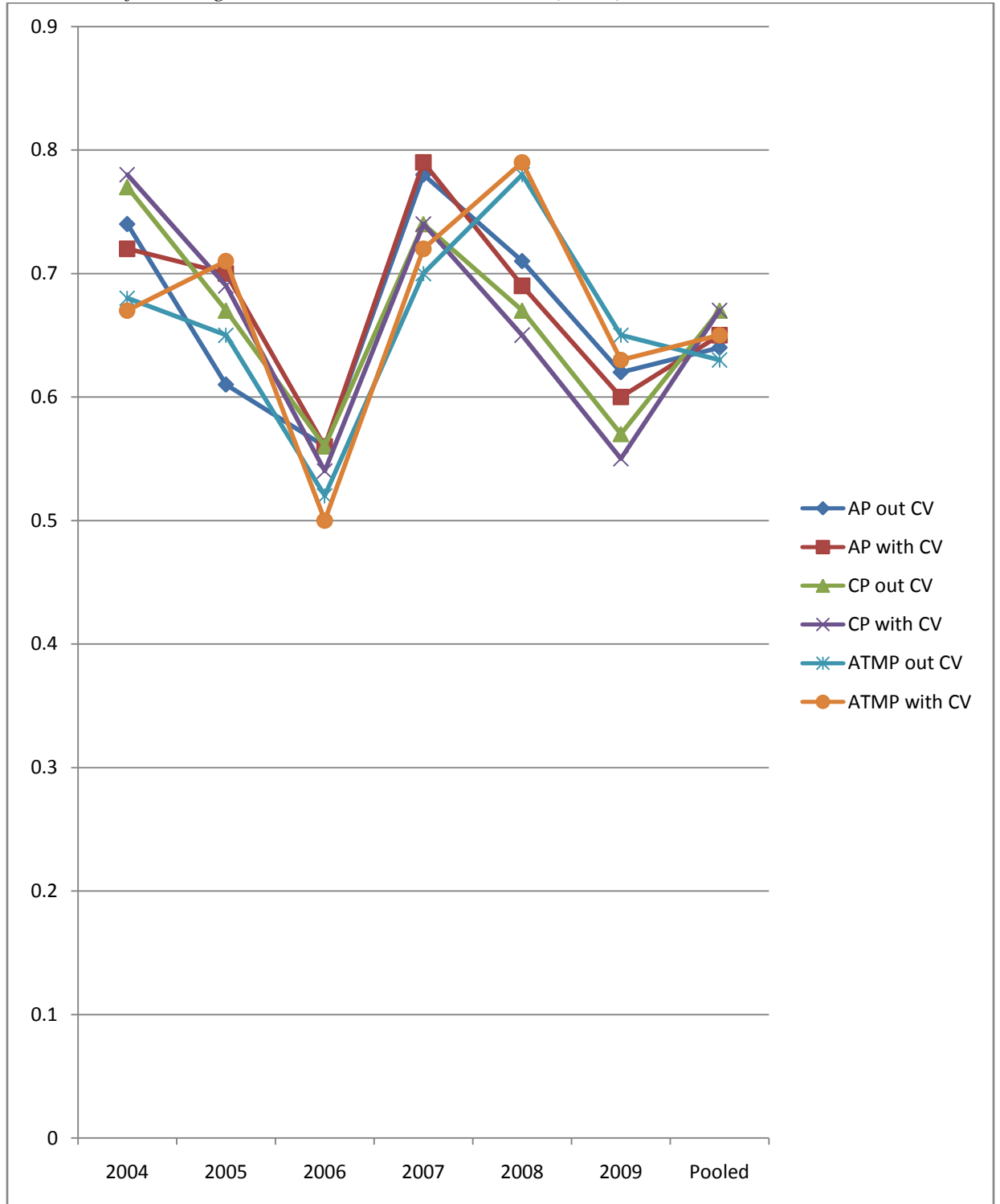
Yearly and Pooled Coefficients Trend: The Influence of Shareholders Number on the Value Relevance of Earnings, Book Value, and Cash Flows (H4-1)



All terms are defined before.

Appendix (25)

Yearly and Pooled R^2 Trend: The Influence of Shareholders Number on the Value Relevance of Earnings, Book Value, and Cash Flows (H4-1)



Other terms are defined before.

Appendix (26)

Yearly and Pooled Regressions: The Influence of Listing Status on the Value Relevance of Earnings, Book Value, and Cash Flows (H4-2)

Appendix (26) - Panel A: Relative to Average Annual Share Price without Control Variables

AP = $\phi_0 + \phi_1 \text{LSTUS} + \phi_2 \text{E} + \phi_3 \text{E} * \text{LSTUS} + \phi_4 \text{BV} + \phi_5 \text{BV} * \text{LSTUS} + \phi_6 \text{CF} + \phi_7 \text{CF} * \text{LSTUS} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ϕ_1	0.05	0.33	0.19	0.50	0.18	0.59	0.25
<i>t-test</i>	0.20	1.44	0.44	1.45	0.64	1.48	2.15**
ϕ_2	0.31	0.60	0.40	0.48	0.42	0.43	0.45
<i>t-test</i>	3.01***	7.11***	3.03***	4.44***	3.00***	2.80***	9.86***
ϕ_3	0.09	0.30	0.18	0.38	0.19	0.38	0.26
<i>t-test</i>	0.40	1.81*	0.75	1.83*	0.76	1.19	3.03***
ϕ_4	0.64	0.64	0.53	0.56	0.48	0.45	0.57
<i>t-test</i>	7.44***	7.17***	5.35***	6.78***	4.99***	4.31***	15.42***
ϕ_5	0.33	0.32	0.23	0.26	0.34	0.23	0.32
<i>t-test</i>	1.96*	2.40**	1.15	1.57	1.58	1.27	4.53***
ϕ_6	0.14	0.34	0.05	0.34	0.29	0.36	0.24
<i>t-test</i>	1.74*	3.23***	0.38	2.59**	2.70***	3.13***	5.20***
ϕ_7	-0.05	-0.11	-0.08	0.05	0.11	0.15	-0.05
<i>t-test</i>	-0.35	-0.91	-0.32	0.26	0.68	0.80	-0.77
Adj. R^2	0.75	0.60	0.52	0.78	0.68	0.62	0.64
F	9.41***	15.62***	8.66***	15.71***	9.87***	8.49***	54.89***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

LSTUS: Listing status.

Other variables are defined before.

Appendix (26) - Panel B: Relative to Average Annual Share Price with Control Variables

AP = $\phi_0 + \phi_1 \text{LSTUS} + \phi_2 \text{E} + \phi_3 \text{E} * \text{LSTUS} + \phi_4 \text{BV} + \phi_5 \text{BV} * \text{LSTUS} + \phi_6 \text{CF} + \phi_7 \text{CF} * \text{LSTUS} + \phi_8 \text{SIZE} + \phi_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ϕ_1	0.11	0.27	-0.04	0.34	0.24	0.62	0.22
<i>t-test</i>	0.40	1.21	-0.10	0.95	0.80	1.54	1.84*
ϕ_2	0.28	0.54	0.29	0.40	0.41	0.39	0.41
<i>t-test</i>	2.76***	7.23***	2.17**	3.42***	2.81***	2.48**	9.04***
ϕ_3	0.10	0.25	0.10	0.31	0.19	0.36	0.24
<i>t-test</i>	0.49	1.53	0.40	1.45	0.78	1.12	2.82***
ϕ_4	0.60	0.56	0.49	0.57	0.58	0.51	0.57
<i>t-test</i>	6.45***	6.54***	4.97***	6.92***	5.68***	4.64***	14.80***
ϕ_5	0.26	0.36	0.25	0.30	0.29	0.19	0.28
<i>t-test</i>	1.53	2.29**	1.24	1.73*	1.31	1.04	3.95***
ϕ_6	0.22	0.35	0.03	0.27	0.29	0.42	0.24
<i>t-test</i>	1.69*	3.68***	0.26	1.88*	2.67**	3.46***	5.21***
ϕ_7	-0.03	-0.07	-0.16	0.01	0.14	0.20	-0.05
<i>t-test</i>	-0.22	-0.53	-0.63	0.07	0.87	1.04	-0.77
ϕ_8	0.02	0.25	0.10	0.20	-0.11	-0.11	0.09
<i>t-test</i>	0.25	2.40	0.68	2.46**	-0.82	-0.67	2.02**
ϕ_9	0.08	0.11	0.19	-0.04	0.08	0.002	0.05
<i>t-test</i>	0.83	1.16	1.40	-0.41	0.56	0.01	1.16
Adj. R^2	0.74	0.68	0.55	0.80	0.67	0.60	0.65
F	8.42***	13.79***	7.30***	12.07***	7.54***	6.65***	44.53***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (26) - Panel C: Relative to Annual Closing Share Price without Control Variables

CP = $\phi_0 + \phi_1 \text{LSTUS} + \phi_2 \text{E} + \phi_3 \text{E}^* \text{LSTUS} + \phi_4 \text{BV} + \phi_5 \text{BV}^* \text{LSTUS} + \phi_6 \text{CF} + \phi_7 \text{CF}^* \text{LSTUS} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ϕ_1	0.12	0.38	0.19	0.57	0.22	0.62	0.34
<i>t-test</i>	0.43	1.67*	0.45	1.69*	0.74	1.52	2.87***
ϕ_2	0.43	0.67	0.42	0.46	0.43	0.42	0.51
<i>t-test</i>	4.36***	8.45***	3.37***	4.44***	2.97***	2.74***	11.62***
ϕ_3	0.13	0.31	0.25	0.29	0.19	0.40	0.29
<i>t-test</i>	0.58	1.85*	1.08	1.41	0.73	1.21	3.32***
ϕ_4	0.70	0.67	0.49	0.54	0.50	0.43	0.58
<i>t-test</i>	8.29***	7.77***	5.06***	6.62***	5.10***	3.91***	15.65***
ϕ_5	0.35	0.37	0.20	0.19	0.35	0.17	0.29
<i>t-test</i>	2.00**	2.32**	1.04	1.14	1.56	0.93	4.05***
ϕ_6	0.13	0.44	0.04	0.30	0.37	0.38	0.29
<i>t-test</i>	1.68*	4.40***	0.42	2.29**	3.35***	3.15***	6.27***
ϕ_7	-0.03	-0.03	-0.16	0.14	0.12	0.12	-0.01
<i>t-test</i>	-0.20	-0.25	-0.66	0.80	0.74	0.63	-0.12
<i>Adj.R</i> ²	0.76	0.68	0.55	0.76	0.64	0.58	0.66
<i>F</i>	8.29***	15.09***	9.94***	15.35***	8.38***	7.59***	53.40***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (26) - Panel D: Relative to Annual Closing Share Price with Control Variables

CP = $\phi_0 + \phi_1 \text{LSTUS} + \phi_2 \text{E} + \phi_3 \text{E}^* \text{LSTUS} + \phi_4 \text{BV} + \phi_5 \text{BV}^* \text{LSTUS} + \phi_6 \text{CF} + \phi_7 \text{CF}^* \text{LSTUS} + \phi_8 \text{SIZE} + \phi_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ϕ_1	0.18	0.33	0.03	0.42	0.26	0.61	0.31
<i>t-test</i>	0.67	1.44	0.08	1.16	0.83	0.48	2.60***
ϕ_2	0.39	0.64	0.35	0.39	0.43	0.38	0.47
<i>t-test</i>	4.10***	8.25***	2.70***	3.55***	2.84***	2.41**	10.87***
ϕ_3	0.15	0.27	0.21	0.21	0.19	0.38	0.27
<i>t-test</i>	0.71	1.59	0.90	1.01	0.73	1.16	3.12***
ϕ_4	0.65	0.63	0.47	0.54	0.61	0.47	0.59
<i>t-test</i>	7.29***	7.33***	4.83***	6.50***	5.79***	3.99***	15.21***
ϕ_5	0.26	0.36	0.24	0.20	0.30	0.13	0.25
<i>t-test</i>	1.54	2.24**	1.22	1.18	1.27	0.66	3.44***
ϕ_6	0.23	0.45	-0.01	0.23	0.38	0.45	0.30
<i>t-test</i>	1.89*	4.70***	-0.06	1.57	3.36***	3.56***	6.44***
ϕ_7	-0.02	0.002	-0.23	0.12	0.15	0.13	-0.01
<i>t-test</i>	-0.10	0.01	-0.91	0.67	0.85	0.68	-0.10
ϕ_8	0.12	0.09	-0.05	0.11	-0.07	-0.12	0.05
<i>t-test</i>	1.43	0.90	-0.30	1.23	-0.53	-0.70	1.07
ϕ_9	0.09	0.11	0.21	0.02	0.03	0.04	0.04
<i>t-test</i>	1.00	1.27	1.57	0.18	0.16	0.25	0.97
<i>Adj.R</i> ²	0.78	0.70	0.56	0.76	0.62	0.56	0.67
<i>F</i>	8.12***	12.12***	7.82***	11.84***	6.30***	6.03***	43.41***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (26) - Panel E: Relative to ATM-Share Price without Control Variables

ATMP = $\phi_0 + \phi_1 \text{ LSTUS} + \phi_2 \text{ E} + \phi_3 \text{ E}^* \text{LSTUS} + \phi_4 \text{ BV} + \phi_5 \text{ BV}^* \text{LSTUS} + \phi_6 \text{ CF} + \phi_7 \text{ CF}^* \text{LSTUS} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ϕ_1	0.03	0.28	0.30	0.53	-0.05	0.61	0.20
<i>t-test</i>	0.10	1.18	0.67	1.49	-0.18	1.50	1.68*
ϕ_2	0.22	0.48	0.34	0.43	0.25	0.40	0.33
<i>t-test</i>	1.93*	5.26***	2.41**	3.81***	1.69*	2.53**	6.84***
ϕ_3	0.07	0.18	0.14	0.44	-0.05	0.34	0.17
<i>t-test</i>	0.31	1.04	0.59	2.07**	-0.23	1.03	1.95*
ϕ_4	0.59	0.60	0.57	0.52	0.52	0.44	0.54
<i>t-test</i>	6.36***	6.58***	5.61***	5.95***	5.56***	4.21***	14.18***
ϕ_5	0.31	0.36	0.24	0.21	0.52	0.17	0.33
<i>t-test</i>	1.76*	2.19**	1.17	1.23	2.46**	0.92	4.46***
ϕ_6	0.16	0.32	0.21	0.31	0.21	0.35	0.24
<i>t-test</i>	1.77*	3.07***	1.01	2.35**	1.808	3.07***	5.14***
ϕ_7	-0.06	-0.02	0.08	-0.02	0.12	0.14	-0.01
<i>t-test</i>	-0.39	-0.14	0.29	-0.13	0.76	0.75	-0.15
<i>Adj.R</i> ²	0.69	0.65	0.50	0.67	0.78	0.64	0.63
<i>F</i>	8.22***	13.51***	7.48***	13.71***	11.06***	7.47***	50.32***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (26) - Panel F: Relative to ATM-Share Price with Control Variables

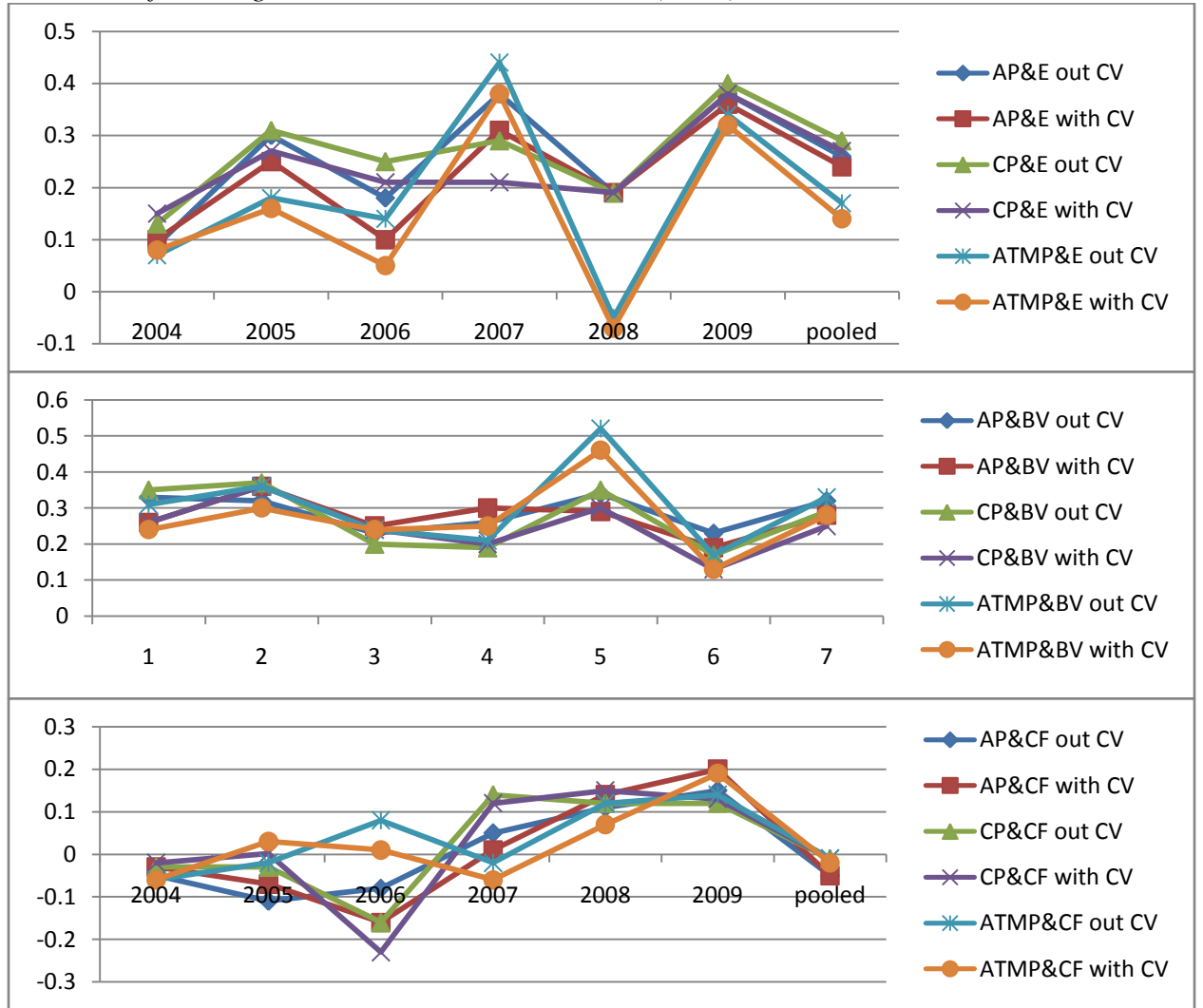
ATMP = $\phi_0 + \phi_1 \text{ LSTUS} + \phi_2 \text{ E} + \phi_3 \text{ E}^* \text{LSTUS} + \phi_4 \text{ BV} + \phi_5 \text{ BV}^* \text{LSTUS} + \phi_6 \text{ CF} + \phi_7 \text{ CF}^* \text{LSTUS} + \phi_8 \text{ SIZE} + \phi_9 \text{ LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
ϕ_1	0.06	0.28	0.08	0.38	-0.13	0.64	0.15
<i>t-test</i>	0.21	1.22	0.17	1.02	-0.47	1.54	1.23
ϕ_2	0.19	0.42	0.24	0.35	0.17	0.36	0.28
<i>t-test</i>	1.69*	4.93***	1.68*	2.93***	1.17	2.22**	5.90***
ϕ_3	0.08	0.16	0.05	0.38	-0.07	0.32	0.14
<i>t-test</i>	0.38	0.92	0.21	1.70*	-0.30	0.96	1.64*
ϕ_4	0.65	0.51	0.53	0.53	0.58	0.51	0.53
<i>t-test</i>	5.53***	5.62***	5.22***	5.86***	6.05***	4.56***	13.28***
ϕ_5	0.24	0.30	0.24	0.25	0.46	0.13	0.28
<i>t-test</i>	1.39	1.81*	1.16	1.39	2.16**	0.67	3.84***
ϕ_6	0.23	0.34	0.15	0.23	0.18	0.43	0.24
<i>t-test</i>	1.75*	5.58***	1.20	1.56	1.60	3.53***	5.25***
ϕ_7	-0.06	0.03	0.01	-0.06	0.07	0.19	-0.02
<i>t-test</i>	-0.39	0.25	0.04	-0.31	0.64	0.97	-0.25
ϕ_8	0.01	0.26	0.15	0.24	0.04	-0.11	0.17
<i>t-test</i>	0.13	2.63**	0.93	2.36**	0.38	-0.71	3.97***
ϕ_9	0.09	0.03	0.05	-0.02	0.14	0.06	0.000
<i>t-test</i>	0.75	0.28	0.32	-0.10	1.24	0.35	0.000
<i>Adj.R</i> ²	0.66	0.70	0.49	0.70	0.79	0.63	0.65
<i>F</i>	7.08***	11.76***	6.23***	10.51***	9.07***	5.92***	43.43***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (27)

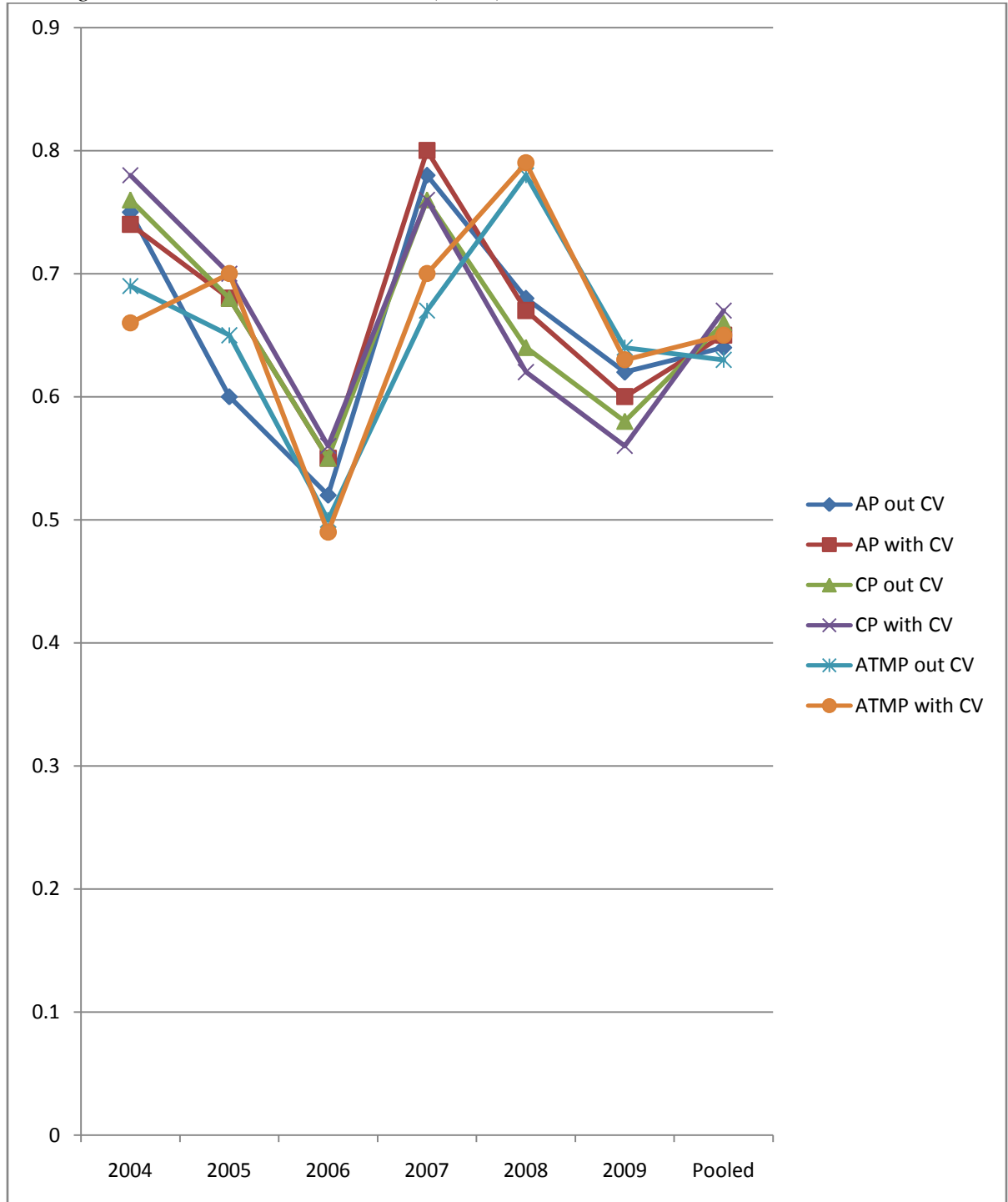
Yearly and Pooled Coefficients Trend: The Influence of Listing Status on the Value Relevance of Earnings, Book Value, and Cash Flows (H4-2)



All terms are defined before.

Appendix (28)

Yearly and Pooled R^2 Trend: The Influence of Listing Status on the Value Relevance of Earnings, Book Value, and Cash Flows (H4-2)



Other terms are defined before.

Appendix (29)

Yearly and Pooled Regressions: The Influence of Company's Age on the Value Relevance of Earnings, Book Value, and Cash Flows (H4-3)

Appendix (29) - Panel A: Relative to Average Annual Share Price without Control Variables

AP = $\lambda_0 + \lambda_1 \text{ AGE} + \lambda_2 \text{ E} + \lambda_3 \text{ E*AGE} + \lambda_4 \text{ BV} + \lambda_5 \text{ BV*AGE} + \lambda_6 \text{ CF} + \lambda_7 \text{ CF*AGE} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
λ_1	0.53	0.44	0.31	0.34	0.29	0.79	0.46
<i>t-test</i>	1.86*	1.58	0.66	0.94	0.78	2.35**	3.80***
λ_2	0.33	0.60	0.40	0.47	0.44	0.41	0.46
<i>t-test</i>	3.29***	7.05***	3.18***	4.42***	3.19***	2.60**	10.25***
λ_3	0.50	0.35	-0.02	0.02	0.16	0.36	0.29
<i>t-test</i>	2.2**	1.70*	-0.07	0.07	0.62	1.64	3.34***
λ_4	0.70	0.63	0.53	0.54	0.48	0.43	0.58
<i>t-test</i>	8.42***	7.16***	5.35***	6.33***	5.02***	4.15***	15.61***
λ_5	0.35	0.26	0.12	0.26	0.47	0.22	0.30
<i>t-test</i>	2.00**	1.38	0.49	1.39	1.48	1.16	3.87***
λ_6	0.14	0.33	0.05	0.33	0.28	0.33	0.24
<i>t-test</i>	1.05	3.15***	0.45	2.55**	2.65**	2.91***	4.92***
λ_7	-0.03	0.02	0.14	0.31	0.09	0.32	0.10
<i>t-test</i>	-0.24	0.13	0.52	1.72*	0.41	2.17**	1.74*
<i>Adj.R</i> ²	0.75	0.59	0.62	0.78	0.69	0.61	0.65
<i>F</i>	9.63***	12.51***	10.31***	16.92***	12.60***	14.29***	65.12***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

AGE: Company's age.

Other variables are defined before.

Appendix (29) - Panel B: Relative to Average Annual Share Price with Control Variables

AP = $\lambda_0 + \lambda_1 \text{ AGE} + \lambda_2 \text{ E} + \lambda_3 \text{ E*AGE} + \lambda_4 \text{ BV} + \lambda_5 \text{ BV*AGE} + \lambda_6 \text{ CF} + \lambda_7 \text{ CF*AGE} + \lambda_8 \text{ SIZE} + \lambda_9 \text{ LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
λ_1	0.55	0.43	0.04	0.30	0.31	0.83	0.45
<i>t-test</i>	2.02**	1.75*	0.09	0.86	0.79	2.40**	3.74***
λ_2	0.29	0.53	0.30	0.38	0.43	0.37	0.41
<i>t-test</i>	2.92***	7.10***	2.32**	3.42***	2.95***	2.35**	9.23***
λ_3	0.53	0.41	-0.39	0.03	0.17	0.36	0.28
<i>t-test</i>	2.44**	2.23**	-1.21	0.15	0.53	1.51	3.26***
λ_4	0.64	0.56	0.49	0.55	0.60	0.50	0.58
<i>t-test</i>	6.97***	6.59***	4.98***	6.51***	5.77***	4.54***	14.90***
λ_5	0.26	0.17	0.11	0.24	0.46	0.20	0.26
<i>t-test</i>	1.52	1.01	0.48	1.28	1.38	1.05	3.26***
λ_6	0.23	0.35	0.04	0.26	0.28	0.40	0.24
<i>t-test</i>	1.70*	3.59***	0.34	1.73*	2.60**	3.33***	5.00***
λ_7	-0.06	-0.14	0.28	0.22	0.09	0.36	0.07
<i>t-test</i>	-0.47	-1.07	1.05	1.24	0.49	2.27**	1.19
λ_8	0.05	0.28	0.09	0.19	-0.10	-0.11	0.09
<i>t-test</i>	0.57	2.71***	0.63	2.09**	-0.87	-0.65	1.91*
λ_9	0.08	0.10	0.17	-0.07	0.09	-0.05	0.04
<i>t-test</i>	0.78	1.13	1.32	-0.77	0.64	-0.34	0.99
<i>Adj.R</i> ²	0.75	0.68	0.64	0.80	0.68	0.61	0.65
<i>F</i>	9.03***	14.41***	10.18***	14.52***	9.17***	10.55***	53.00***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (29) - Panel C: Relative to Annual Closing Share Price without Control Variables

CP = $\lambda_0 + \lambda_1 \text{ AGE} + \lambda_2 \text{ E} + \lambda_3 \text{ E*AGE} + \lambda_4 \text{ BV} + \lambda_5 \text{ BV*AGE} + \lambda_6 \text{ CF} + \lambda_7 \text{ CF*AGE} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
λ_1	0.65	0.60	0.45	0.67	0.21	0.89	0.60
<i>t-test</i>	2.29**	2.15**	0.99	1.98*	0.55	2.60**	5.05***
λ_2	0.43	0.67	0.43	0.45	0.44	0.39	0.51
<i>t-test</i>	4.55***	8.37***	3.55***	4.27***	3.11***	2.54**	11.97***
λ_3	0.55	0.40	-0.03	0.13	0.11	0.45	0.37
<i>t-test</i>	2.45**	1.94*	-0.11	0.57	0.34	1.90*	4.28***
λ_4	0.76	0.67	0.49	0.51	0.51	0.40	0.58
<i>t-test</i>	9.25***	7.75***	5.02***	6.02***	5.16***	3.71***	15.80***
λ_5	0.33	0.21	0.06	0.16	0.56	0.15	0.26
<i>t-test</i>	1.90*	1.10	0.26	0.91	1.77*	0.78	3.32***
λ_6	0.14	0.43	0.05	0.29	0.37	0.35	0.29
<i>t-test</i>	0.99	4.28***	0.50	2.20**	3.30***	2.95***	6.03***
λ_7	-0.02	0.01	0.20	0.41	0.10	0.30	0.09
<i>t-test</i>	-0.12	0.10	0.76	2.43**	0.44	1.97*	1.61
<i>Adj.R</i> ²	0.76	0.68	0.62	0.75	0.66	0.57	0.67
<i>F</i>	9.97***	12.88***	11.90***	19.88***	12.40***	13.48***	70.61***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (29) - Panel D: Relative to Annual Closing Share Price with Control Variables

CP = $\lambda_0 + \lambda_1 \text{ AGE} + \lambda_2 \text{ E} + \lambda_3 \text{ E*AGE} + \lambda_4 \text{ BV} + \lambda_5 \text{ BV*AGE} + \lambda_6 \text{ CF} + \lambda_7 \text{ CF*AGE} + \lambda_8 \text{ SIZE} + \lambda_9 \text{ LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
λ_1	0.66	0.58	0.23	0.69	0.22	0.94	0.59
<i>t-test</i>	2.54**	2.19**	0.48	2.05**	0.56	2.67***	5.01***
λ_2	0.38	0.63	0.36	0.36	0.44	0.36	0.47
<i>t-test</i>	4.16***	8.12***	2.87***	3.28***	2.93***	2.30**	11.03***
λ_3	0.59	0.44	-0.27	0.15	0.12	0.45	0.36
<i>t-test</i>	2.88***	2.25**	-0.84	0.69	0.35	1.87*	4.21***
λ_4	0.69	0.63	0.47	0.52	0.63	0.45	0.59
<i>t-test</i>	7.77***	7.39***	4.81***	6.08***	5.91***	3.89***	15.29***
λ_5	0.22	0.16	0.08	0.10	0.56	0.13	0.22
<i>t-test</i>	1.35	0.86	0.35	0.56	1.67*	0.69	2.80***
λ_6	0.21	0.44	0.01	0.20	0.37	0.43	0.29
<i>t-test</i>	1.68*	4.59***	0.06	1.35	3.30***	3.44***	6.20***
λ_7	-0.08	-0.11	0.27	0.34	0.10	0.35	0.07
<i>t-test</i>	-0.60	-0.76	1.02	2.00**	0.47	2.19**	1.22
λ_8	0.15	0.12	-0.08	0.11	-0.09	-0.12	0.04
<i>t-test</i>	1.78*	1.26	-0.55	1.07	-0.67	-0.67	0.97
λ_9	0.09	0.11	0.14	-0.001	0.06	-0.02	0.04
<i>t-test</i>	0.94	1.22	1.05	-0.01	0.41	-0.13	0.90
<i>Adj.R</i> ²	0.78	0.70	0.61	0.75	0.64	0.56	0.70
<i>F</i>	10.70***	11.66***	9.88***	16.56***	9.03***	10.12***	55.38***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (29) - Panel E: Relative to ATM-Share Price without Control Variables

ATMP = $\lambda_0 + \lambda_1 \text{ AGE} + \lambda_2 \text{ E} + \lambda_3 \text{ E*AGE} + \lambda_4 \text{ BV} + \lambda_5 \text{ BV*AGE} + \lambda_6 \text{ CF} + \lambda_7 \text{ CF*AGE} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
λ_1	0.38	0.33	0.35	0.07	0.03	0.66	0.32
<i>t-test</i>	1.30	1.26	0.71	0.19	0.08	1.96*	2.57**
λ_2	0.24	0.47	0.34	0.43	0.28	0.36	0.35
<i>t-test</i>	2.19**	5.23***	2.49**	3.78***	1.95*	2.30**	7.31***
λ_3	0.42	0.34	0.09	-0.11	0.10	0.21	0.23
<i>t-test</i>	1.79*	1.74*	0.28	-0.43	0.31	0.90	2.63***
λ_4	0.64	0.60	0.56	0.50	0.53	0.41	0.55
<i>t-test</i>	7.22***	6.51***	5.62***	5.54***	5.61***	3.93***	14.30***
λ_5	0.34	0.30	0.19	0.29	0.63	0.24	0.34
<i>t-test</i>	1.86*	1.71*	0.77	1.44	1.98*	1.29	4.33***
λ_6	0.17	0.31	0.13	0.32	0.19	0.31	0.23
<i>t-test</i>	1.19	2.97***	1.08	2.36**	1.69*	2.76***	4.86***
λ_7	-0.10	-0.10	0.12	0.25	0.04	0.33	0.06
<i>t-test</i>	-0.72	-0.77	0.43	1.33	0.20	2.21**	1.08
<i>Adj.R</i> ²	0.70	0.64	0.60	0.69	0.78	0.65	0.63
<i>F</i>	7.92***	15.90***	8.98***	13.90***	12.14***	14.73***	61.67***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (29) - Panel F: Relative to ATM-Share Price with Control Variables

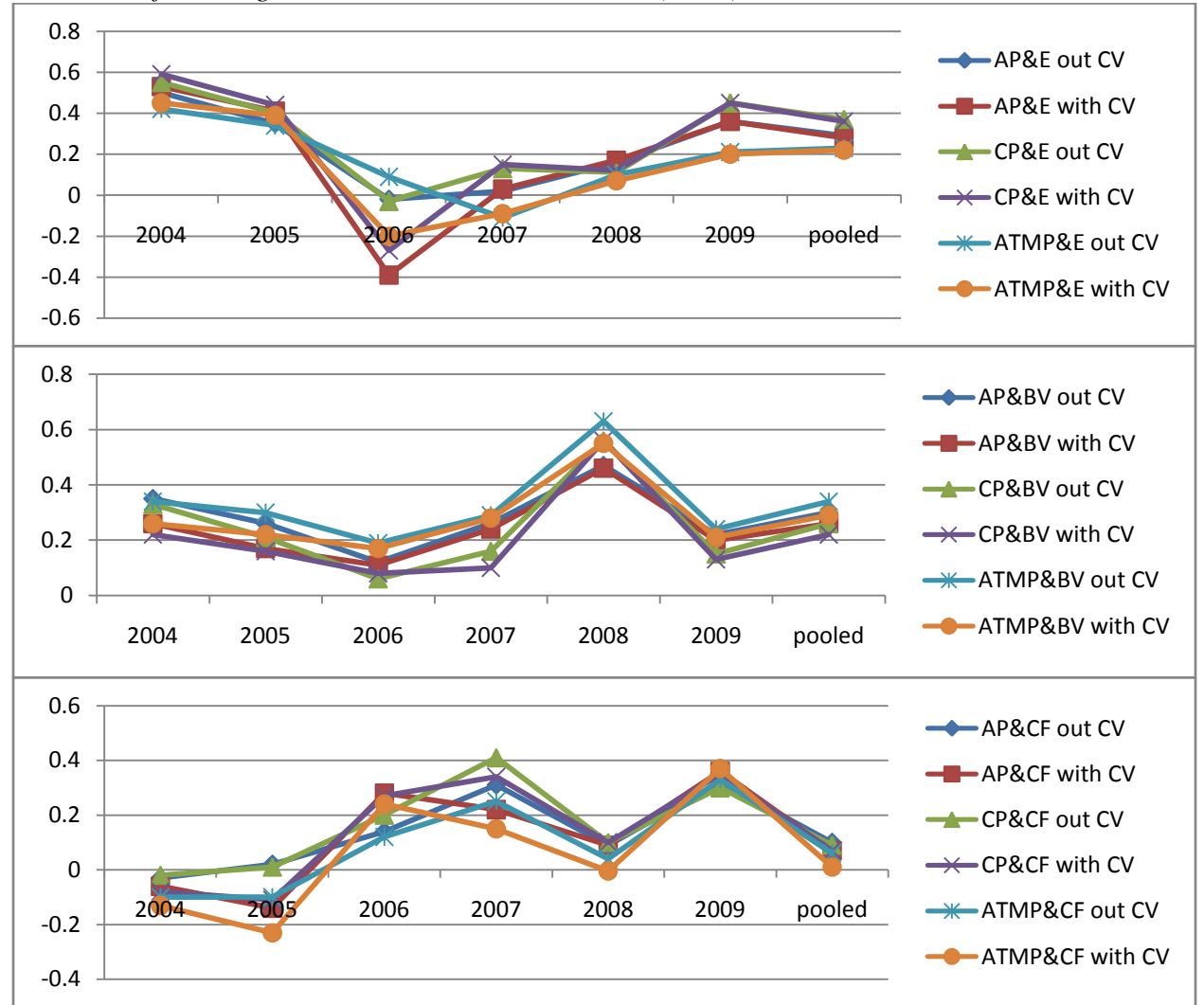
ATMP = $\lambda_0 + \lambda_1 \text{ AGE} + \lambda_2 \text{ E} + \lambda_3 \text{ E*AGE} + \lambda_4 \text{ BV} + \lambda_5 \text{ BV*AGE} + \lambda_6 \text{ CF} + \lambda_7 \text{ CF*AGE} + \lambda_8 \text{ SIZE} + \lambda_9 \text{ LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
λ_1	0.40	0.33	0.15	0.03	0.02	0.69	0.29
<i>t-test</i>	1.39	1.37	0.30	0.07	0.04	2.04**	2.41**
λ_2	0.20	0.41	0.25	0.33	0.19	0.33	0.29
<i>t-test</i>	1.85*	4.83***	1.77*	2.81***	1.868	2.04**	6.16***
λ_3	0.45	0.39	-0.20	-0.09	0.07	0.20	0.22
<i>t-test</i>	1.96*	2.18**	-0.60	-0.38	0.24	0.87	2.53**
λ_4	0.60	0.52	0.53	0.52	0.60	0.48	0.53
<i>t-test</i>	5.99***	5.63***	5.23***	5.61***	6.24***	4.40***	13.33***
λ_5	0.26	0.22	0.17	0.28	0.55	0.21	0.29
<i>t-test</i>	1.42	1.36	0.68	1.37	1.72*	1.09	3.68***
λ_6	0.25	0.33	0.15	0.27	0.17	0.40	0.24
<i>t-test</i>	1.76*	3.48***	1.26	1.49	1.50	3.33***	5.04***
λ_7	-0.13	-0.23	0.24	0.15	-0.004	0.37	0.01
<i>t-test</i>	-0.89	-1.84*	0.87	0.83	-0.02	2.35**	0.22
λ_8	0.04	0.30	0.15	0.20	0.04	-0.13	0.17
<i>t-test</i>	0.39	3.16***	1.00	1.90*	0.43	-0.84	3.82***
λ_9	0.10	0.02	0.06	-0.08	0.19	0.002	-0.003
<i>t-test</i>	0.93	0.23	0.42	-0.73	1.73*	0.01	-0.08
<i>Adj.R</i> ²	0.70	0.71	0.60	0.70	0.81	0.64	0.65
<i>F</i>	7.13***	16.45***	8.05***	12.12***	10.13***	11.02***	43.43***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (30)

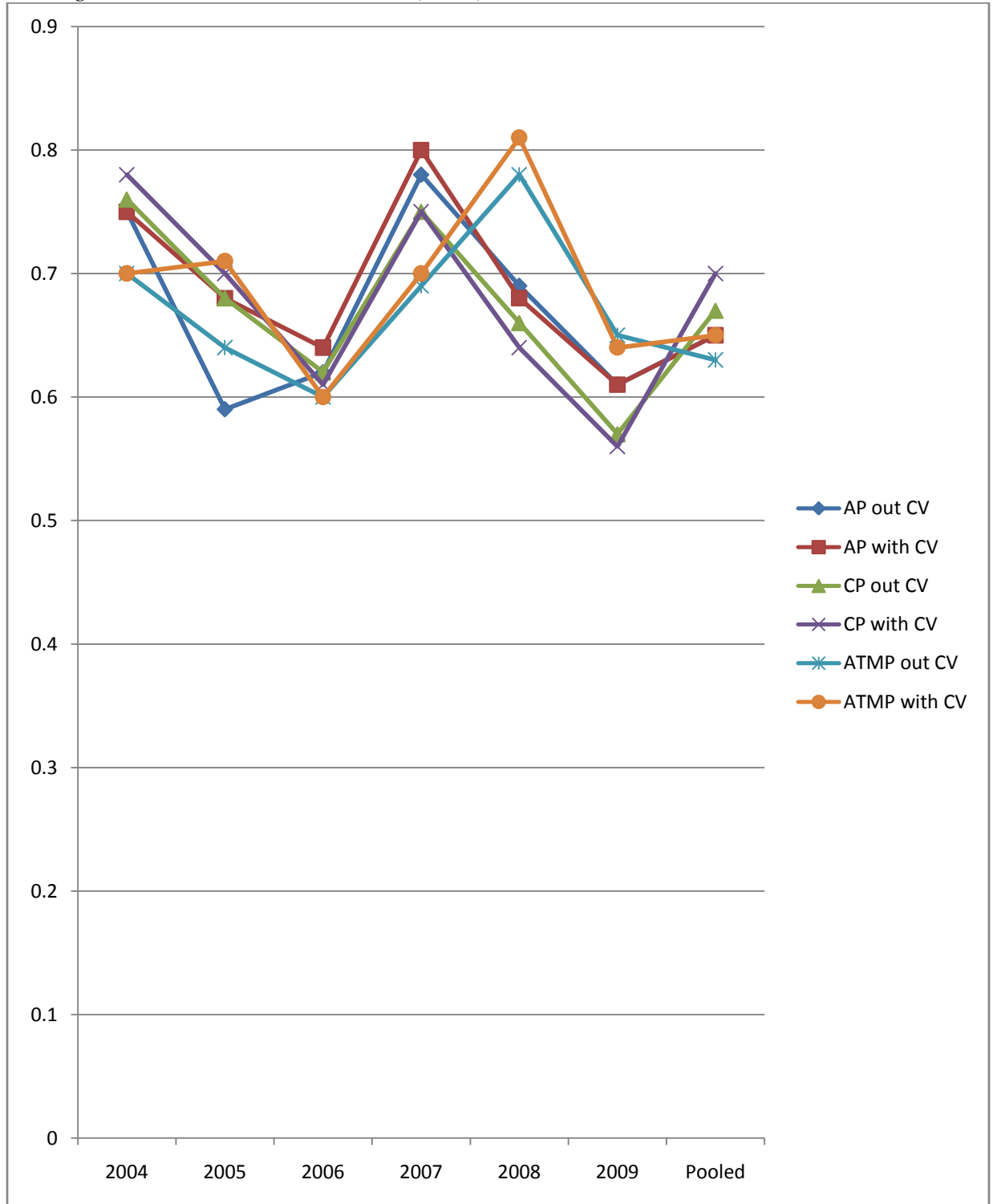
Yearly and Pooled Coefficients Trend: The Influence of Company's Age on the Value Relevance of Earnings, Book Value, and Cash Flows (H4-3)



All terms are defined before.

Appendix (31)

Yearly and Pooled R^2 Trend: The Influence of Company's Age on the Value Relevance of Earnings, Book Value, and Cash Flows (H4-3)



Other terms are defined before.

Appendix (32)

Yearly and Pooled Regressions: The Influence of Type of Industry on the Value Relevance of Earnings, Book Value, and Cash Flows (H5)

Appendix (32) - Panel A: Relative to Average Annual Share Price without Control Variables

AP = $\mu_0 + \mu_1$ TYIND + μ_2 E + μ_3 E*TYIND + μ_4 BV + μ_5 BV*TYIND + μ_6 CF + β_7 CF*TYIND + e							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
μ_1	-0.25	0.12	0.56	0.38	0.28	0.20	0.14
<i>t-test</i>	-0.80	0.41	1.23	0.88	0.95	0.47	1.05
μ_2	0.37	0.59	0.42	0.48	0.41	0.37	0.45
<i>t-test</i>	3.57***	6.96***	3.21***	4.31***	2.84***	2.41**	10.08***
μ_3	-0.01	0.11	0.25	0.21	-0.01	0.06	0.14
<i>t-test</i>	-0.04	0.55	0.77	0.70	-0.02	0.19	1.41
μ_4	0.69	0.63	0.54	0.55	0.43	0.46	0.58
<i>t-test</i>	8.41***	7.20***	5.36***	6.50***	4.35***	4.46***	15.67***
μ_5	0.33	0.30	0.25	0.13	0.11	0.26	0.25
<i>t-test</i>	1.68*	1.38	0.89	0.56	0.58	1.11	2.89***
μ_6	0.17	0.33	0.05	0.33	0.28	0.34	0.24
<i>t-test</i>	1.17	3.16***	0.42	2.61**	2.63**	3.03***	5.01***
μ_7	0.07	-0.09	0.14	0.05	0.25	0.13	0.03
<i>t-test</i>	0.44	-0.57	0.41	0.25	1.34	0.49	0.44
Adj.R ²	0.70	0.61	0.57	0.78	0.70	0.62	0.65
F	6.77***	9.52***	9.55***	11.77***	12.40***	7.89***	45.24***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

TYIND: Type of industry.

Other variables are defined before.

Appendix (32) - Panel B: Relative to Average Annual Share Price with Control Variables

AP = $\mu_0 + \mu_1$ TYIND + μ_2 E + μ_3 E*TYIND + μ_4 BV + μ_5 BV*TYIND + μ_6 CF + β_7 CF*TYIND + μ_8 SIZE + μ_9 LEVRG + e							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
μ_1	-0.04	0.06	0.33	0.25	0.30	0.16	0.10
<i>t-test</i>	-0.13	0.23	0.74	0.57	1.03	0.36	0.74
μ_2	0.33	0.52	0.31	0.40	0.40	0.34	0.41
<i>t-test</i>	3.23***	7.01***	2.35**	3.46***	2.62**	2.20**	9.19***
μ_3	0.01	0.13	0.14	0.15	-0.05	-0.01	0.15
<i>t-test</i>	0.04	0.73	0.45	0.50	-0.16	-0.04	1.55
μ_4	0.63	0.56	0.50	0.57	0.54	0.52	0.58
<i>t-test</i>	6.94***	6.66***	5.06***	6.66***	5.14***	4.76***	15.00***
μ_5	0.15	0.29	0.24	0.16	0.10	0.26	0.23
<i>t-test</i>	0.86	1.47	0.83	0.70	0.53	1.10	2.77***
μ_6	0.23	0.35	0.03	0.27	0.28	0.41	0.24
<i>t-test</i>	1.68*	3.68***	0.26	1.85*	2.61	3.43***	5.03***
μ_7	0.26	-0.03	0.09	0.05	0.31	0.23	0.06
<i>t-test</i>	1.68*	-0.18	0.28	0.24	1.58	0.82	0.88
μ_8	0.05	0.22	0.02	0.20	-0.09	-0.10	0.07
<i>t-test</i>	0.43	2.24**	0.14	2.13	-0.72	-0.65	1.55
μ_9	0.03	0.15	0.20	-0.05	0.05	-0.14	0.06
<i>t-test</i>	0.25	1.58	1.44	-0.54	0.40	-0.95	1.42
Adj.R ²	0.68	0.69	0.58	0.79	0.69	0.62	0.66
F	9.85***	10.19***	8.11***	8.98***	9.33***	6.25***	42.00***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (32) - Panel C: Relative to Annual Closing Share Price without Control Variables

CP = $\mu_0 + \mu_1 \text{TYIND} + \mu_2 \text{E} + \mu_3 \text{E*TYIND} + \mu_4 \text{BV} + \mu_5 \text{BV*TYIND} + \mu_6 \text{CF} + \mu_7 \text{CF*TYIND} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
μ_1	-0.16	0.16	0.38	0.30	0.13	0.29	0.20
<i>t-test</i>	-0.49	0.52	0.83	0.70	1.05	0.58	1.43
μ_2	0.47	0.66	0.42	0.45	0.41	0.36	0.51
<i>t-test</i>	4.81***	8.25***	3.31***	4.07***	2.71***	2.36**	11.82***
μ_3	0.12	0.12	0.37	0.11	0.06	0.09	0.18
<i>t-test</i>	0.50	0.62	1.13	0.38	0.21	0.27	1.77*
μ_4	0.75	0.67	0.49	0.52	0.46	0.43	0.59
<i>t-test</i>	9.27***	7.80***	4.92***	6.17***	4.51***	3.98***	15.84***
μ_5	0.35	0.34	0.15	0.15	0.18	0.23	0.26
<i>t-test</i>	1.73*	1.61	0.53	0.67	0.90	0.96	2.95***
μ_6	0.18	0.43	0.04	0.29	0.36	0.36	0.29
<i>t-test</i>	1.79*	4.32***	0.38	2.28**	3.27***	3.05***	6.10***
μ_7	0.001	-0.01	-0.10	0.09	0.21	0.09	0.03
<i>t-test</i>	0.01	-0.04	-0.31	0.44	1.11	0.32	0.47
Adj.R ²	0.74	0.66	0.53	0.76	0.67	0.60	0.67
F	6.07***	9.82***	9.15***	11.83***	10.86***	7.54***	45.15***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (32) - Panel D: Relative to Annual Closing Share Price with Control Variables

CP = $\mu_0 + \mu_1 \text{TYIND} + \mu_2 \text{E} + \mu_3 \text{E*TYIND} + \mu_4 \text{BV} + \mu_5 \text{BV*TYIND} + \mu_6 \text{CF} + \mu_7 \text{CF*TYIND} + \mu_8 \text{SIZE} + \mu_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
μ_1	0.05	0.11	0.20	0.17	0.34	0.19	0.16
<i>t-test</i>	0.18	0.38	0.42	0.39	1.11	0.43	1.17
μ_2	0.42	0.61	0.35	0.37	0.40	0.33	0.48
<i>t-test</i>	4.47***	7.99***	2.63**	3.22***	2.54**	2.17**	10.99***
μ_3	0.13	0.14	0.28	0.05	0.02	0.01	0.18
<i>t-test</i>	0.66	0.74	0.87	0.18	0.07	0.03	1.92*
μ_4	0.68	0.64	0.47	0.53	0.57	0.47	0.60
<i>t-test</i>	7.79***	7.46***	4.76***	6.22***	5.28***	4.05***	15.37***
μ_5	0.16	0.34	0.15	0.20	0.17	0.23	0.24
<i>t-test</i>	0.91	1.67*	0.53	0.84	0.84	0.97	2.81***
μ_6	0.23	0.45	-0.01	0.22	0.37	0.44	0.30
<i>t-test</i>	1.68*	4.70***	-0.06	1.53	3.27***	3.52***	6.29***
μ_7	0.18	0.04	-0.15	0.10	0.28	0.18	0.06
<i>t-test</i>	1.19	0.29	-0.46	0.49	1.35	0.63	0.92
μ_8	0.10	0.10	-0.05	0.14	-0.06	-0.12	0.03
<i>t-test</i>	0.99	1.02	-0.29	1.39	-0.51	-0.78	0.59
μ_9	0.09	0.12	0.18	-0.01	0.02	-0.14	0.05
<i>t-test</i>	0.87	1.30	1.26	-0.05	0.17	-0.93	1.16
Adj.R ²	0.75	0.69	0.53	0.76	0.66	0.61	0.67
F	10.55***	8.97***	7.35***	9.02***	8.17***	6.05***	41.03***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (32) - Panel E: Relative to ATM-Share Price without Control Variables

ATMP = $\mu_0 + \mu_1 \text{TYIND} + \mu_2 \text{E} + \mu_3 \text{E*TYIND} + \mu_4 \text{BV} + \mu_5 \text{BV*TYIND} + \mu_6 \text{CF} + \mu_7 \text{CF*TYIND} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
μ_1	-0.38	-0.04	0.60	0.52	-0.05	0.23	-0.01
<i>t-test</i>	-1.23	-0.14	1.27	1.17	-0.19	0.53	-0.06
μ_2	0.27	0.47	0.37	0.45	0.26	0.32	0.34
<i>t-test</i>	2.44**	5.14***	2.65**	3.82***	1.68*	2.08**	7.11***
μ_3	-0.15	-0.03	0.12	0.35	-0.15	-0.02	-0.02
<i>t-test</i>	-0.64	-0.15	0.36	1.15	-0.54	-0.07	-0.19
μ_4	0.64	0.60	0.57	0.51	0.47	0.44	0.55
<i>t-test</i>	7.19***	6.53***	5.61***	5.66***	4.85***	4.22***	14.28***
μ_5	0.38	0.29	0.22	-0.04	0.32	0.22	0.28
<i>t-test</i>	1.94*	1.29	0.72	-0.17	1.69*	0.92	3.20***
μ_6	0.19	0.31	0.13	0.31	0.19	0.32	0.24
<i>t-test</i>	1.33	3.08***	1.11	2.38**	1.69*	2.91***	4.97***
μ_7	0.08	0.003	0.31	-0.02	0.19	0.16	0.07
<i>t-test</i>	0.52	0.02	0.89	-0.10	0.99	0.57	1.04
<i>Adj.R</i> ²	0.60	0.66	0.61	0.68	0.78	0.65	0.64
<i>F</i>	6.93***	8.09***	7.82***	10.69***	12.55***	7.41***	40.85***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (32) - Panel F: Relative to ATM-Share Price with Control Variables

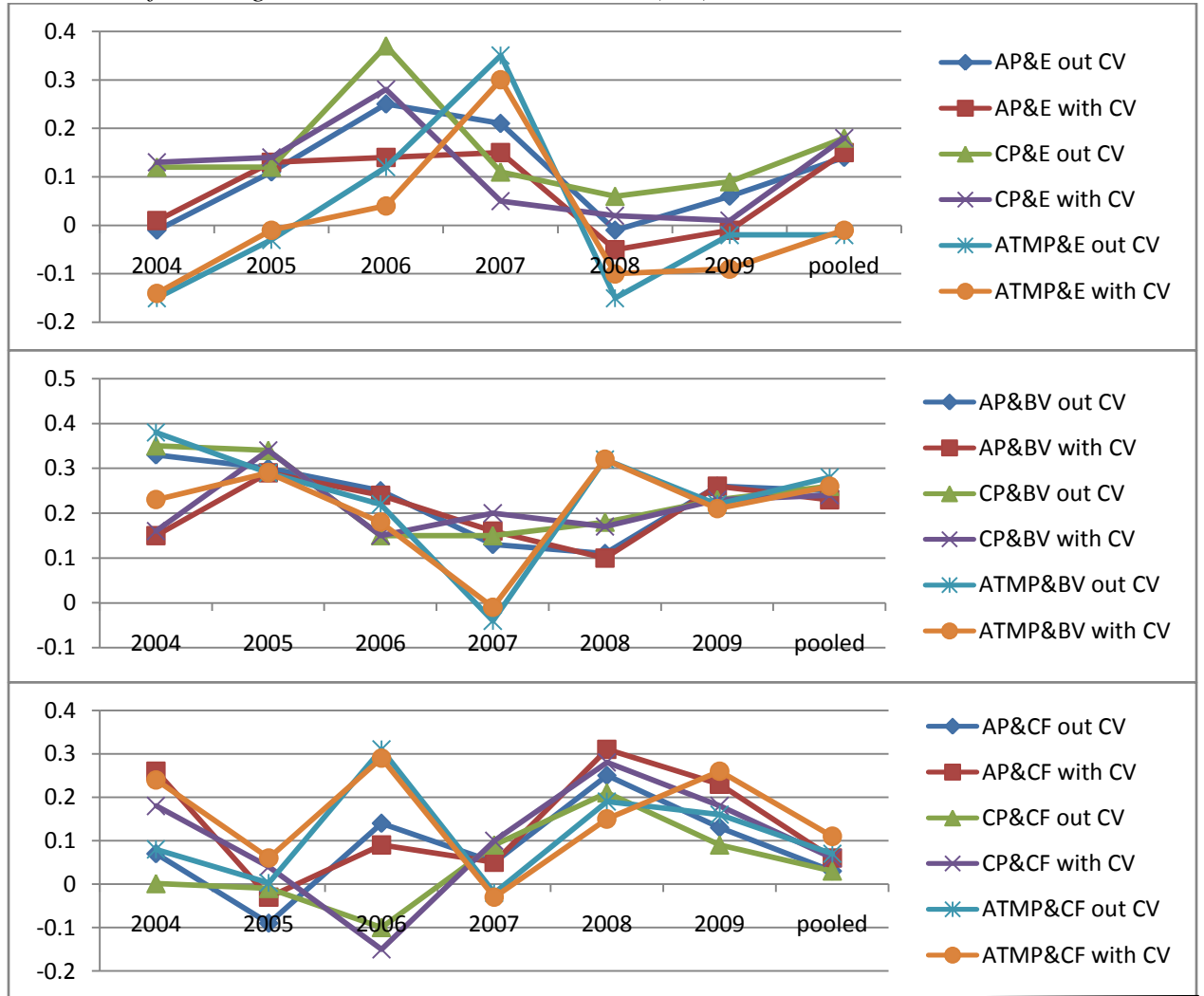
ATMP = $\mu_0 + \mu_1 \text{TYIND} + \mu_2 \text{E} + \mu_3 \text{E*TYIND} + \mu_4 \text{BV} + \mu_5 \text{BV*TYIND} + \mu_6 \text{CF} + \mu_7 \text{CF*TYIND} + \mu_8 \text{SIZE} + \mu_9 \text{LEVRG} + e$							
Yrs	2004	2005	2006	2007	2008	2009	Pooled
Statistics							
μ_1	-0.20	-0.10	0.41	0.42	-0.12	0.21	-0.07
<i>t-test</i>	-0.69	-0.34	0.86	0.92	-0.41	0.49	-0.51
μ_2	0.23	0.40	0.28	0.37	0.17	0.30	0.29
<i>t-test</i>	2.11**	4.70***	1.93*	3.00***	1.13	1.89*	6.09***
μ_3	-0.14	-0.01	0.04	0.30	-0.10	-0.09	-0.01
<i>t-test</i>	-0.64	-0.04	0.11	0.98	-0.34	-0.27	-0.11
μ_4	0.59	0.52	0.54	0.52	0.55	0.51	0.53
<i>t-test</i>	5.94***	5.64***	5.29***	5.72***	5.59***	4.61***	13.37***
μ_5	0.23	0.29	0.18	-0.01	0.32	0.21	0.26
<i>t-test</i>	1.26	1.38	0.59	-0.05	1.65	0.88	3.12***
μ_6	0.25	0.34	0.15	0.23	0.17	0.40	0.24
<i>t-test</i>	1.74*	3.63***	1.21	1.56	1.51	3.50***	5.08***
μ_7	0.24	0.06	0.29	-0.03	0.15	0.26	0.11
<i>t-test</i>	1.53	0.40	0.85	-0.11	0.78	0.91	1.53
μ_8	0.05	0.23	0.01	0.18	0.05	-0.12	0.15
<i>t-test</i>	0.36	2.36**	0.08	1.63	0.56	-0.81	3.24***
μ_9	0.03	0.06	0.08	-0.04	0.14	-0.09	0.02
<i>t-test</i>	0.22	0.70	0.61	-0.33	1.53	-0.59	0.44
<i>Adj.R</i> ²	0.58	0.71	0.59	0.69	0.80	0.65	0.66
<i>F</i>	8.62***	8.71***	6.59***	8.03***	10.07***	5.81***	41.85***

Notes: *, ** and *** Significant at 10%, 5% and 1% levels.

All variables are defined before.

Appendix (33)

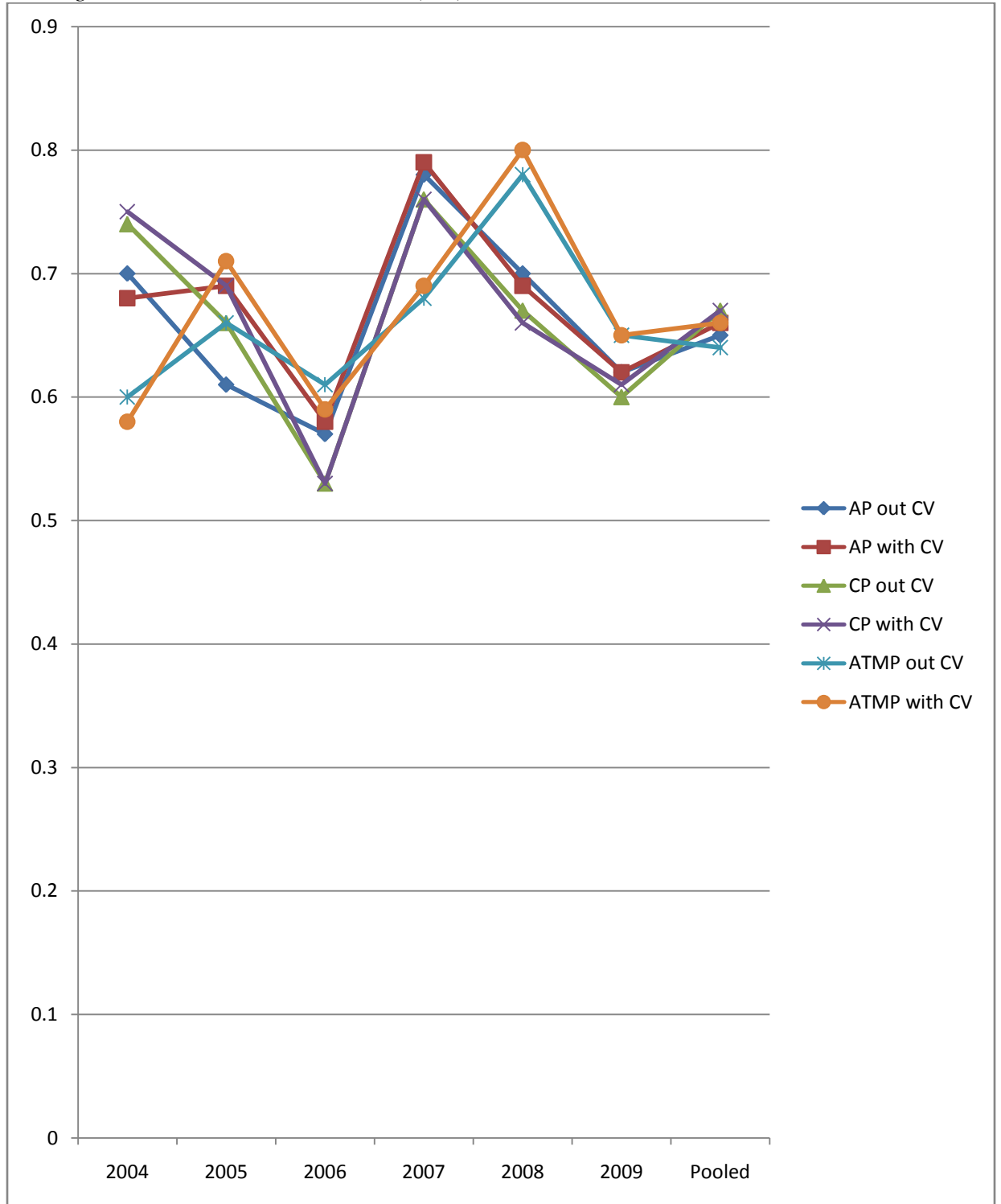
Yearly and Pooled Coefficients Trend: The Influence of Type of Industry on the Value Relevance of Earnings, Book Value, and Cash Flows (H5)



All terms are defined before.

Appendix (34)

Yearly and Pooled R^2 Trend: The Influence of Type of Industry on the Value Relevance of Earnings, Book Value, and Cash Flows (H5)



Other terms are defined before.

Appendix (35)
Joint F Test and Cramer Test

Appendix (35) - Panel A: The Influence of Foreign Ownership on the Value Relevance of Earning, Book Value, and Cash Flows Relative to Three Share Price Proxies (H2-1)

P = ω ₀ + ω ₁ FORN + ω ₂ E + ω ₃ E*FORN + ω ₄ BV + ω ₅ BV*FORN + ω ₆ CF + ω ₇ CF*FORN + ω ₈ SIZE + ω ₉ LEVRG + e									
Company with foreign ownership	Price proxy	ω2	ω3	ω4	ω5	ω6	ω7	Adj.R ²	Cramer test
	A P	0.290 (1.704)*	0.346 (5.841)***	0.439 (2.621)**	0.468 (8.095)***	0.197 (1.810)*	0.053 (1.070)	0.597	0.077**
		Joint F test <u>(ω₂ + ω₃ = 0)</u> 102.122***		Joint F test <u>(ω₄ + ω₅ = 0)</u> 114.333***		Joint F test <u>(ω₆ + ω₇ = 0)</u> 3.216*			
	versus	C P	ω2	ω3	ω4	ω5	ω6		
0.421 (2.506)**			0.364 (6.405)***	0.354 (2.134)**	0.460 (8.290)***	0.142 (1.322)	0.073 (1.535)		
Joint F test <u>(ω₂ + ω₃ = 0)</u> 130.732***		Joint F test <u>(ω₄ + ω₅ = 0)</u> 149.834***		Joint F test <u>(ω₆ + ω₇ = 0)</u> 1.67					
Company without foreign ownership	A T M P	ω2	ω3	ω4	ω5	ω6	ω7	0.574	0.075**
		0.254 (1.359)	0.238 (3.912)***	0.504 (2.744)***	0.514 (8.641)***	0.106 (0.884)	0.113 (2.213)**		
	Joint F test <u>(ω₂ + ω₃ = 0)</u> 68.206***		Joint F test <u>(ω₄ + ω₅ = 0)</u> 112.342***		Joint F test <u>(ω₆ + ω₇ = 0)</u> 2.998*				

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

P: Share price proxy (average annual share price (AP), annual closing share price (CP) or share price after a three-month period following the financial year-end (ATMP)) for a company in a year.

FORN: Foreign ownership

E: Earnings

BF: Cash flows

SIZE: Company size (log of total assets).

LEVRG: Leverage (debt to total asset).

Appendix (35) - Panel B: The Influence of Listing Status on the Value Relevance of Earning, Book Value, and Cash Flows Relative to Three Share Price Proxies (H4-2)

P = $\phi_0 + \phi_1$ LSTUS + ϕ_2 E + ϕ_3 E*LSTUS + ϕ_4 BV + ϕ_5 BV*LSTUS + ϕ_6 CF + ϕ_7 CF*LSTUS + ϕ_8 SIZE + ϕ_9 LEVRG + e									
Company listed in main board	Price proxy	ϕ_2	ϕ_3	ϕ_4	ϕ_5	ϕ_6	ϕ_7	Adj. R ²	Cramer test
	A P	0.342 (3.541)***	0.335 (4.991)***	0.359 (3.812)***	0.518 (8.060)***	0.197 (1.810)*	0.042 (0.456)	0.657	0.112*
		Joint F test $(\phi_2 + \phi_3 = 0)$ 35.844***		Joint F test $(\phi_4 + \phi_5 = 0)$ 109.107***		Joint F test $(\phi_6 + \phi_7 = 0)$ 1.018			
	C P	ϕ_2	ϕ_3	ϕ_4	ϕ_5	ϕ_6	ϕ_7	0.539	0.012** *
		0.351 (3.795)***	0.370 (5.715)***	0.397 (4.391)***	0.485 (7.826)***	0.113 (1.512)	0.067 (1.232)		
		Joint F test $(\phi_2 + \phi_3 = 0)$ 40.872***		Joint F test $(\phi_4 + \phi_5 = 0)$ 112.860***		Joint F test $(\phi_6 + \phi_7 = 0)$ 1.24			
	A T M P	ϕ_2	ϕ_3	ϕ_4	ϕ_5	ϕ_6	ϕ_7	0.574	0.05**
		0.308 (2.984)***	0.200 (2.935)***	0.355 (3.531)***	0.590 (9.058)***	0.114 (1.369)	0.108 (1.899)*		
		Joint F test $(\phi_2 + \phi_3 = 0)$ 27.170***		Joint F test $(\phi_4 + \phi_5 = 0)$ 104.852***		Joint F test $(\phi_6 + \phi_7 = 0)$ 3.101*			

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

LSTUS: Listing status.

Other variables are defined before

Appendix (35) - Panel C: The Influence of Type of Industry on the Value Relevance of Earning, Book Value, and Cash Flows Relative to Three Share Price Proxies (H5)

P = $\mu_0 + \mu_1$ TYIND + μ_2 E + μ_3 E*TYIND + μ_4 BV + μ_5 BV*TYIND + μ_6 CF + β_7 CF*TYIND + μ_8 SIZE + μ_9 LEVRG + e									
Services companies	Price prox y	μ_2	μ_3	μ_4	μ_5	μ_6	μ_7	AdjR ²	Cramer test
	A P	0.331 (3.972)***	0.350 (4.865)***	0.405 (5.248)***	0.525 (7.297)***	0.149 (2.280)***	0.130 (0.897)		
		Joint F test $\frac{(\mu_2 + \mu_3 = 0)}{74.934***}$		Joint F test $\frac{(\mu_2 + \mu_3 = 0)}{87.212***}$		Joint F test $\frac{(\mu_2 + \mu_3 = 0)}{4.769*}$			
versus	C P	μ_2	μ_3	μ_4	μ_5	μ_6	μ_7	0.601	0.055**
		0.327 (3.918)***	0.408 (6.232)***	0.402 (5.188)***	0.504 (7.758)***	0.156 (2.381)**	0.015 (0.268)		
		Joint F test $\frac{(\mu_2 + \mu_3 = 0)}{74.220***}$		Joint F test $\frac{(\mu_2 + \mu_3 = 0)}{98.828***}$		Joint F test $\frac{(\mu_2 + \mu_3 = 0)}{2.556}$			
Industrial companies	A T M P	μ_2	μ_3	μ_4	μ_5	μ_6	μ_7	0.594	0.064**
		0.281 (3.333)***	0.204 (2.6340)***	0.447 (5.731)***	0.586 (7.383)***	0.149 (2.257)**	0.974 (0.345)		
		Joint F test $\frac{(\mu_2 + \mu_3 = 0)}{59.224***}$		Joint F test $\frac{(\mu_2 + \mu_3 = 0)}{72.134}$		Joint F test $\frac{(\mu_2 + \mu_3 = 0)}{2.001}$			

Notes:

*, ** and *** Significant at 10%, 5% and 1% levels.

TYIND: Type of industry.

Other variables are defined before