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DECISION-USEFULNESS OF ACCOUNTING INFORMATION TO EQUITY INVESTORS OF FIRMS LISTED ON THE AMMAN STOCK EXCHANGE:
AN EMPIRICAL INVESTIGATION

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ABSTRACT

This study examines the decision-usefulness of financial information produced in the external financial reports from the implementation of the International Accounting Standards (IAS) and the International Financial Reporting Standards (IFRS) to equity investors of the Amman Stock Exchange (ASE) in their investment decision-making process. The study employs mixed method research that uses quantitative and qualitative methods. The quantitative research methodology employs archival financial data from the ASE using inferential statistics to investigate the association between share market prices and a well known model, the residual earnings model, derived from (Preinreich 1938, Ohlson (1995) Feltham and Olson (1995). Data is collected from companies listed on the ASE for the period before implementation of the IAS/IFRS, 1980-1989, and for the period after implementation, 1991-2009. In general, the results indicate a statistical association between share market prices and book value per share (BVPS) and residual earnings per share (REPS) with the BVPS robust to share market prices. The second quantitative method employs questionnaires administered to individual and institutional equity investors of the ASE. Key findings indicate that equity investors believe the implementation of the IAS/IFRS produces decision-useful financial information, that the accounting information has the useful qualitative characteristics proposed by the International Accounting Standards Board and that the price-to-book ratio, the dividend discount model and the price-earnings multiple are very useful models as inputs into their investment decision-making process. Semi-structured interviews were conducted to accounting, auditing and ASE experts in Jordan. Prevalent findings indicate that developments within the ASE and accounting profession have influenced the decision-usefulness of financial information. Few believed that Jordan should develop its own accounting standards. This research contributes to knowledge, being the first comprehensive study that employs a mixed method research using archival financial data for a 29-year study period from the ASE and primary data to evaluate the decision-usefulness of financial information produced from implementing the IAS/IFRS. Furthermore, this research fills a gap in the literature by examining the period before IAS/IFRS implementation and the period after implementation in Jordan to determine if IAS/IFRS implementation resulted in decision-useful financial information. The main implication of this research is that reported financial information has greater decision-usefulness after the implementation of the IAS/IFRS than before, implying positive effects of accounting standard-setting in an emerging economy.

Table of contents

DEDICATION

To my family and my dear friend Margarita Peralta, r.i.p. b.e.a.

ACKNOWLEDGEMENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

AFM: Amman Financial Market
AMEX: American Stock Exchange
API: abnormal performance index
APT: Arbitrage Pricing Theory
ASE: Amman Stock Exchange
ATS: Alternative Trading System
B/M: book-to-market value
BOD: board of directors
CAPM: capital asset pricing model
CAR: cumulative abnormal return
CB: central bank
CC: Control of Corruption Indicator
CIA: Central Intelligence Agency
CPI: Corruption Perception Index
CRSP: Center for Research in Security Prices
DCF: discounted cash flow
DDM: dividend discount model
DFA: Dimentional Fund Advisors
DOS: Department of Statistics-Jordan
E/B: earnings to book value
E/P: earnings-to-price
EAP: Economic Adjustment Program
EBIT: earnings before interest and taxes
ECN: Electronic Communications Network
ECSs: Electronic Crossing System
EMH: Efficient Market Hypothesis
EPS: earnings-per-share
FAO: Food & Agricultural Organization
FASB: Financial Accounting Standards Board
FCFF: free cash flow to the firm
FTSE: Financial Times Stock Exchange
GAAP: Generally Accepted Accounting Principles
GDP: gross domestic product
GID: Government Intelligence Agency
HDI: human development index
HPR: holding period return
HPY: holding period yielding
IAAS: International Accounting & Auditing Standards
IAF: Islamic Action Front
IAS: International Accounting Standards
IASB: International Accounting Standards Board
IASC: International Accounting Standards Committee
IFC: International Finance Corporation
IFRS: International Financial Reporting Standards

IMF: International Monetary Fund
IPO: initial public offering
JAA: Jordanian Association of Auditors
JACC: Jordan Anti-Corruption Commission
JACPA: Jordanian Association of Certified Public Accountants
JDs: Jordanian Dinars
JSC: Jordan Securities Commission
M/B: market-to-book
MC: market capitalization
MENA: Middle East & North Africa
MPT: modern portfolio theory
MVA: market value added
NYSE: New York Stock Exchange
OECD: Organization for Economic Cooperation & Dev
OLS: ordinary least squares
OTC: over the counter
P/B: price-to-book value
P/CF: price-to-cash flow
P/E: price-to-earnings
P/sales: price-to-sales
PLO: Palestinian Liberation Organization
PS: Political Stability & Absence of Violence Indictor
QIZ: Qualifying Industrial Zone
REM: residual earnings model
RIM: residual income model
ROE: return-on-equity
S&P: Standard & Poor's
SDC: Securities Depository Center
SML: security market line
SQ: sub-question
TI: Transparency International
UN: United Nations
UNDP: United Nations Development Program
UNRWA: United Nations Relief & Works Agency
US: United States
USD: United States dollar
VA: Voice & Accountability Indicator
WB: World Bank
WEC: World Energy Council
WFB: World Fact Book
WGI: Worldwide Governance Indictors
WPI: Weighted Price Index
WTO: World Trade Organization

Chapter 1 INTRODUCTION TO THE THESIS

In a market economy, societies make important decisions regarding the allocation of their resources among competing uses. They are important because resources are scarce. A nation's financial system, which is composed of financial markets and intermediaries, serves to organize and match scarce resources from savers to borrowers (Mankiw, 2007, p. 562). Firms demand capital resources to produce goods and services for the nation's economy, while people provide excess capital funds in order to generate and increase wealth for themselves. Capital resources are managed through the nation's financial system. Capital markets are important because they serve as a dipstick of economic activity and productivity. It functions as one of the major benchmarks for the health of the economy. More importantly, the national stock market provides a direct mechanism to exchange capital from the private sector, through both individual and institutional investors, to the business and governmental sectors (Mankiw, 2007). Excess capital comes from national savings, which in turn fuels investment activity. Through the forces of supply and demand in the capital market, scarce resources can then be allocated more efficiently thereby spurring economic growth and development. However, in order for this process to take place, suppliers of investment capital require information in order to make rational investment decisions that would result in creating more wealth. Many investors rely on financial information from external financial reporting when they decide to purchase, sell or hold financial assets. If the financial information that investors need to make decisions is not relevant then they might make the wrong economic decisions that will adversely affect economic investment and productivity. Thus, the usefulness of financial information has significant economic implications in our society.

1.1 ROLE OF FINANCIAL INFORMATION

"In our society, the role of accounting is to report how organisations use scare resources and to report on the status of resources and claims to resources" (Schroeder, et al., 2011, p. 2). Financial information primarily has two roles,

informational and contractual roles. The informational role serves all users of financial information in the process of making decisions about the value of a given company (Dick & Missonier-Piera, 2010). In a contractual role, i.e. financial information is used as the basis for many contracts between individuals, companies and other parties (Dick & Missonier-Piera, 2010). This study focuses on the informational role of financial information to the equity investors of the Amman Stock Exchange (ASE).

The American Accounting Association defines accounting as the process of identifying, measuring and communicating economic information to permit informed judgments regarding decisions by users of the information. Accounting information is essential to users and potential users through external financial reporting. The joint conceptual framework the United States (US)-based Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) state that "the objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity" (FASB, 2010, p. 1). Both accounting standard-setting bodies have identified the equity investor, among others, as the primary focus of financial statements. "As investors are providers of risk capital to the enterprise, the provision of financial statements that meet their needs will also meet most of the needs of other users that financial statements can satisfy" (IASC, 2003, p. 22). Accounting information from financial statements is designed to help investors, managers and creditors make better economic decisions (White, et al., 1994, p. 2).

Furthermore, financial reporting information is useful depending on its qualitative characteristics and constraints. Two fundamental qualitative characteristics of decision-useful financial information are critical: relevance and faithful representation (FASB, 2010, p. 16). Accounting information in financial statements is relevant when it influences the economic decisions of users by helping them evaluate past, present or future events relating to an entity; and confirming or correcting past evaluations they have made (Alfredson, et al., 2007, p. 71). Relevant financial information has predictive and/or confirmatory values

that influence the decisions of users of financial information (FASB, 2010, p. 17). "Faithful representation implies that decision-useful financial information represents faithfully the economic phenomena that it purports to represent which help distinguish more useful information from less useful information" (FASB, 2010).

Additionally there are enhancing characteristics that complement the decision-usefulness of financial information 'that are less critical but still highly desirable': these are comparability, verifiability, understandability and timeliness (FASB, 2010, p. 24). Enhancing characteristics further help determine more useful information from less useful information. Comparability of financial information allows investors and other users to compare the financial position of companies using the same measurement. Users must be able to compare financial statements of an entity and between different entities over time so that they can identify trends in their financial position and performance to make decisions about where to invest their capital and at what price (Alfredson, et al., 2007, p. 73). When users of financial reports are able to identify and compare differences and similarities between reporting entities the information is more useful (FASB, 2010, p. 19). "Verifiability means that different knowledgeable and independent observers could reach consensus, although not necessarily complete agreement, that a particular depiction is a faithful representation" (FASB, 2010, p. 20). "Classifying, characterizing, and presenting information clearly and concisely makes it understandable" (FASB, 2010, p. 21). Understandability is met when the information presented in financial reports are "readily understandable by users who have a reasonable knowledge of business and economic activities and accounting, and who are willing to study the information diligently (Alfredson, et al., 2007, p. 71). However, very complex or difficult information should not be omitted (FASB, 2010, p. 21). "Timeliness means having information available to decision makers in time to be capable of influencing their decisions" (FASB, 2010, p. 20). Timeliness implies that the financial information is reported and released so that users of the information can make timely decisions.

The FASB and IASB identify materiality and cost as pervasive constraints that limit usefulness of financial information provided in financial reports. Materiality is

a pervasive constraint that is an aspect of relevance. "Information is material if omitting it or misstating it could influence decisions that users make on the basis of the financial information of a specific reporting entity" (FASB, 2010, p. 17). Cost-benefit implies that the benefits of reporting financial information should be greater than the costs of reporting that information.

Therefore, in order for financial information to be useful to investors, creditors and other users of financial reports it must have the qualitative characteristics. Figure 1.1 illustrates the Conceptual Framework for external financial reporting of the qualitative characteristics that make information decision-useful according to the criteria set by the FASB and IASB. The FASB-IASB Conceptual Framework does not specify an amount for any of the qualitative characteristics as being a sufficient amount to meet the criteria. Rather financial information is more useful when it is relevant and faithfully represents that information. While relevance can be empirically measured, faithful representation cannot be quantified and therefore is difficult to measure empirically (FASB, 2010, p. 28).

Objective of financial reporting:
to provide useful financial information in making economic decisions

Primary users are:
existing & potential investors, lenders & other creditors

Fundamental qualitative characteristics

Relevant   Faithful Representation

— Complete

— Neutral

— Free from errors

Enhancing qualitative characteristics

— Comparablilty

— Verifiability

— Timeliness

— Understandability

Pervasive constraints

— Cost-benefit

— Materiality

Figure 1.1: Qualitative characteristics of decision-useful financial information
Source: Adapted from (FASB, 2010).

The extant literature defines value relevance as the "association between accounting amounts and security market values" (Barth, et al., 2000, p. 2). Apart from academics, usefulness of accounting information research may be of interest to capital market participants such as, investors, creditors, analysts, investment managers, regulators of financial markets and standard setters such as the IASB. "The extent and pervasiveness of the value relevance literature in leading academic accounting journals, as well as the adaptations of several of the studies in professional publications, including those of the FASB, are testimony to its impact on academic research and accounting practice" (Barth, et al., 2000, p. 2)

Investment decisions represent the allocation of capital, economic and human resources. The usefulness of financial information is a major factor in achieving efficient allocation of resources, which directly contributes to the development of the national economy. Paul Volcker, former chairman of the US Federal Reserve Board and former chairman of the International Accounting Standards Committee (IASC) Foundation Board of Trustees, said:

> *"If markets are to function properly and capital is to be allocated efficiently, investors require transparency and must have confidence that financial information accurately reflects economic performance. Investors should be able to make comparisons among companies in order to make rational investment decisions. In a rapidly globalizing world, it only makes sense that the same economic transactions are accounted for in the same manner across various jurisdictions"(Volker, 2001).*

Therefore, decision-usefulness of financial information is necessary in order for a capital market to be investable and attract the capital of both local and foreign investors. In advanced capital markets as in the US or Europe, there is an excess of information from brokers, analysts and public sources for investors to seek out reliable information. This is not always the case for emerging capital markets. For example, in relation to emerging markets, Donald Krueger, while Vice President of Templeton Investment Counsel stated that "the biggest problem is probably the lack of reliable information" (Krueger, 1994, p. 34). Jeremy Paulson-Ellis, former chairman of Genesis Investment Management also agreed that "the potential

investor will be able to find little useful information: thus, much research work will need to be undertaken. Spending too much effort in trying to refine research, however, may be a waste of time. The analyst must take what the locals publish, interpret it, look at it, and use it" (Paulson-Elis, 1994, p. 13). For many emerging markets, reliability of financial information still presents a challenge especially in countries with inconsistent accounting standards (Zhou, et al., 2007; Censere Group, 2003). Any research undertaken must consider these factors when dealing with an emerging country such as Jordan. This study employs a mixed method research to enable the research questions to be answered in the most robust and complete manner.

1.2   THE CASE FOR JORDAN

Jordan is classified as an emerging market according to the International Finance Corporation (IFC), the private sector arm of the World Bank Group (WB) that first coined the term 'emerging markets". Jordan is included in the IFC Global Composite Index (IFC, 2007). Two major characteristics of emerging equity markets are that they change and grow at a more rapid pace than developed markets. Other important characteristics include: "high investment returns, high volatility, low correlation with other markets, small market capitalization, limited liquidity, and expensive trading costs" (Davis, 1994, p. 19). A foreign capital investment is a major input to growth in an emerging market. This implies that emerging stock markets must be 'investable' (Peavy, 1994, p. 1), and this requires useful financial information in order for investors to make informed decisions.

For many emerging markets, the qualitative characteristics mentioned above in Figure 1.1 that make financial information useful to investors and other users of financial statements may not be so clear. The issue becomes particularly crucial for countries that suffer from a scarcity of natural resources, such as Jordan, which in addition substantially depends on foreign aid, foreign remittances and foreign investment. Efficient allocation of scarce resources is vital for sustainable growth and development in the economy that requires an organized and transparent financial system. National stock exchanges serve an important function in the allocation of resources; thus, there is an ever-increasing need for

reliable share market valuation especially in emerging equity markets such as Jordan's ASE.

Initially, the accounting and auditing profession in Jordan did not have regulatory bodies to issue financial reporting standards or guidelines for companies to follow in producing and publishing external financial reports. In 1988 Jordan joined the IASC, the predecessor to the IASB. By 1991, the government required the implementation of international external reporting standards as guidelines for the production and dissemination of external financial reports for all publicly-held domestic companies on the ASE. At the time, these were known as International Accounting Standards (IAS) and later, they were superseded with the implementation of the International Financial Reporting Standards (IFRS) for all companies listed on the ASE. Jordan still does not have national financial reporting standards for listed or private unlisted companies. Chapter 4 discusses the development of the accounting and auditing profession in Jordan.

The justification for employing Jordan as a case study is because the results of this study can help determine if Jordan should develop its own national financial reporting standards. Secondly, Jordan may be used as a case for investigating the effectiveness of applying the IAS/IFRS and hereafter used interchangeably in this thesis. Results of the study can be used to gain a deeper understanding of the appropriateness of using IFRS because the period before IAS/IFRS implementation and the period after implementation are empirically tested for decision-usefulness of financial information to equity investors of the ASE. Thirdly, empirical results can be generalised to explain decision-usefulness of financial information to equity investors in other emerging countries within the same region that share the same social structure, language, religion, culture, etc. Fourthly, Jordan is employed as a case study because the study employs 29 years of archival financial data from a stock exchange that has existed for 32 years. This comprehensive study period is used to assess the decision-usefulness of financial information to equity investors during periods of external and internal economic and political environment. Lastly, Jordan can be used as a case to investigate the impact of the implementation of the IFRS during the global financial crisis for an emerging country with limited natural resources.

1.3   OBJECTIVES OF THE STUDY

Developing clear objectives for a research thesis is crucial. "An objective specifies what a researcher is trying to accomplish, and by doing so, it provides measures that can be used to choose between alternatives" (Damodaran, 2001, p. 12). For any research, a clearly stated objective is the key starting point from which to proceed. For investors, a clear investment objective that includes a measurement mechanism is vital to accomplishing their goal of profit maximization (Damodaran, 2001, p. 13).

The primary objective of this study is to evaluate the decision-usefulness of financial information produced from implementing IAS/IFRS to equity investors of the ASE during the period 1980-2009. Research questions provide focus and direction for the researcher to undertake the investigation (Onwuegbuzie & Leech, 2006). Appropriately, the main research question for this study follows:

> *Is publicly available financial accounting information produced by implementing the IAS/IFRS useful to equity investors in the ASE as inputs into their investment decision-making process?*

The term *'useful'* here means that investors and other external users pay attention to and use financial information as inputs into their equity investment decision-making process. In chapters 2 and 3, a review of the theoretical and empirical literature in accounting and finance is reviewed to find suitable models and appropriate techniques to assess the decision-usefulness of financial information. *'Equity investors'* are the external users of financial information and the owners of the company that need financial information to make investment decisions to buy, sell or hold their shares. *'Publicly available'* is information that is freely accessible to the public. All external and internal users of financial information have access to this information. *'Financial accounting information'* is the financial and nonfinancial reporting information, whether external or internal contained in the financial statements of a company. Financial accounting information includes the financial statements such as the balance sheet, income statement, cash flow statement

and disclosures that can be measured in monetary units. Nonfinancial accounting information can include the footnotes, management's explanations and supplementary information that are reported in basic financial statements. The *'IAS/IFRS'* are the accounting standards developed and published by the IASB, which are adopted and implemented internationally. The *'investment decision-making process'* is how investors estimate the value of a company to buy, hold or sell equity shares for investment. This is central to all economies as they represent the capital needed for sustainable economic growth. Chapter 2 explains the different theories employed by users of financial information to help them make investment decisions.

Three secondary sub-questions were developed from the main research question in order to answer it more effectively and give focus to the study. Figure 1.2 shows the hierarchal structure of the study including the main research question, the sub-questions, the research methodologies employed to answer each question, the corresponding chapters where the question is addressed and the time periods used in the study. The main question, sub-questions and research methodologies are further detailed in chapter 5.

A major implication of this research is a regulatory issue relating to the implementation of the IAS/IFRS in Jordan. The study period spans 29 years. It begins ten years before implementation of the IAS as the official guidelines for domestic companies in the production and dissemination of their external financial reports. Therefore, this research aims to examine whether the choice of implementing IAS/IFRS was relevant. In other words, has the quality of financial statement information improved significantly by providing investors with a single set of financial accounting standards that they can rely on to make rational investment decisions in the equity capital market? Ultimately this research examines if the financial information produced by implementing the IAS/IFRS is faithfully represented and relevant.

Two primary goals are expected in this thesis. The first is to reach relevant findings in order to suggest recommendations that will guide and improve the accounting and auditing profession in Jordan. The second goal is to determine

whether investors in the Jordanian stock market use the financial information in the process of making equity investment decisions and therefore to determine whether IAS/IFRS are useful and relevant to Jordan.

MAIN RESEARCH QUESTION

Is publicly available financial accounting information produced by implementing the IAS/IFRS useful to equity investors in the ASE as inputs into their investment decision-making process?

1ST SUB QUESTION:	*2ND SUB QUESTION:*	*3RD SUB QUESTION:*
Do equity investors in the ASE use the accounting information-based models, REM, P/E and P/B, as inputs into their investment decision-making process?	What models have been used to examine decision-usefulness of financial accounting information produced from implementing IAS/IFRS?	How have developments within the ASE & the Jordanian accounting profession influenced the decision-usefulness of financial information produced from implementing the IAS/IFRS?
METHODOLOGY:	METHODOLOGY:	METHODOLOGY:
◆ Parametric statistics using secondary data from the ASE ◆ Nonparametric statistics using primary data from questionnaires	◆ Nonparametric statistics and descriptive analysis of primary data from questionnaires ◆ Empirical literature review & analysis	◆ Qualitative research using primary data from questionnaires & interviews ◆ Descriptive analysis of internal & external environmental influences
Chapter 6	Chapters 3 & 6	Chapters 4 & 6

TIME PERIOD OF STUDY GROUPS

Pre-implementation of IAS/IFRS group:1980-89	Implementation of IAS group: 1991-2001	Implementation of IFRS group: 2002-2009

Figure 1.2: Hierarchal structure of the thesis

This study hopes to enhance understanding of the decision-usefulness of financial information in Jordan for all users of external financial statements and for domestic standard setters alike. In addition, it is hoped that the implications of this research will be of interest to local policy makers. Lastly, this study hopes to stimulate future research in this area.

1.4   CONTRIBUTION TO KNOWLEDGE

This study uses a holistic approach to add to the understanding of the decision-usefulness of financial information produced from implementing IAS/IFRS to equity investors of the ASE. The usefulness of financial information is examined in a broader context by employing data gathered from several sources including archival financial data from the ASE, primary data from a survey to equity investors, primary data gathered from interviews conducted to experts from the ASE and accounting profession and internal and external influences on decision-usefulness of financial information. Internal influences include the country's economic, political, social, and legal factors. External factors include globalisation, regional political shocks, and international market pressures. Chapter 4 details these influences. A few studies examine the adoption of International Accounting and Auditing Standards (IAAS) in Jordan. Al-Rai and Dahmash (1998), Jumani (1998) and Rawashdeh (2003) focused only on the 1989-1991 period. Recent studies examined the environmental factors that influenced the accounting regulation in Jordan (Al-Omari, 2010; Al-Akra, et al., 2009). These studies employ descriptive analysis to examine the influences on the accounting regulation in Jordan.

This study employs three separate research methods to answer the main research question. Quantitative research employs the residual earning model (REM), the survey research method employs two questionnaires to individual and institutional investors and the third research method employs interviews to experts in accounting in Jordan. Results of the three research methods contribute to the

literature regarding the decision- usefulness of accounting information produced from applying the IFRS in a developing country such as Jordan.

1.5   STRUCTURE OF THE THESIS

This chapter introduced the main objectives and elements of the thesis. The need to determine the decision-usefulness of financial information in general and specifically for Jordan as a case study has been discussed. The importance of qualitative characteristics essential for financial information to be useful have been outlined along with the importance investors place on relevant and faithfully represented information to make rational investment decisions. The objectives and relevance for Jordan as a case study were presented. The original contribution to the literature was provided where appropriate.

Chapter 2 traces the theoretical concepts and models that support the study. A description of the investment environment, capital market structure and an explanation of market efficiency, equity investment approaches and equity valuation models are provided. The aim of chapter 2 is to provide the theoretical framework that is fundamental to the understanding of the rationale for the study.

Chapter 3 reviews the empirical literature to examine the methods used by previous researchers to assess decision-usefulness of financial information. Models are evaluated for suitability and appropriateness to answer the second sub-question. Gaps in the literature are identified.

The aim of chapter 4 is to provide a more comprehensive answer for the third sub-question. Furthermore, it provides a broader perspective that will lay the foundation and enhance understanding for later chapters. Chapter 4 outlines the environmental factors, internal and external, that influence the decision-usefulness of financial information in Jordan. The environmental influences include geo-political, socio-demographic, developments within the ASE and the Jordanian accounting profession.

Chapter 5 details the steps needed to undertake a robust research project. Specifically, the chapter presents the research philosophy and approach employed in the study. The research design, the theoretical models and their operational forms, sample parameters, and data handling criteria are detailed. The research methodology is developed and explained for each model. In addition, the hypotheses are formulated and the measurement and test procedures are described. Finally, chapter 5 sets out the limitations of each research methodology taking into account model specific limitations and external specific limitations such as variation in government statistics (Paulson-Elis, 1994, p. 11).

Chapter 6 presents the statistical results for the model employed in the investigation and explores possible alternative interpretations for these results. Results are analysed for two questionnaires administered to equity investors of the ASE and for interviews given to members of the ASE and Jordan's accounting profession. The findings in chapter 6 form the basis for the conclusion, implications and recommendations considered in the final chapter.

Chapter 7 states the conclusions for the study. Implications are given for all users of financial information. Finally, study limitations, recommendations, contribution to knowledge and suggestions for further study that stimulate research in this area are discussed. Figure 1.3 illustrates the structure of the thesis.

| Chapter 1 Introduction to the thesis | Chapter 2 Development of finance theory and capital markets | Chapter 3 Empirical literature review | Chapter 4 Jordan's economy, stock market, & accounting profession | Chapter 5 Research methodology | Chapter 6 Analysis of results | Chapter 7 Conclusion and implications |
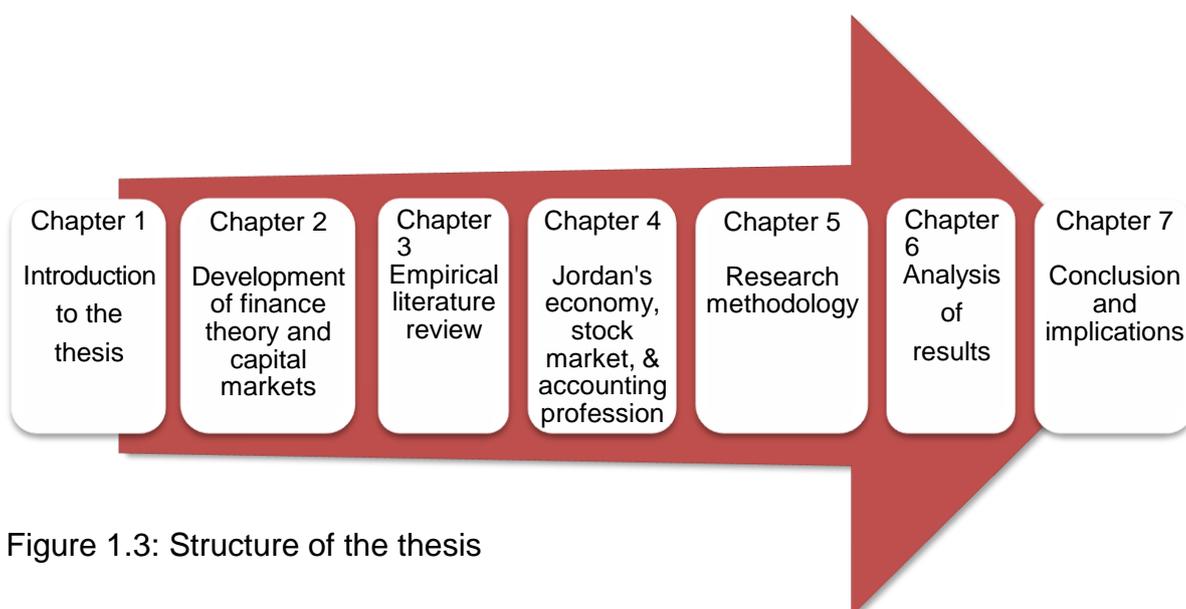
Figure 1.3: Structure of the thesis

Chapter 2

DEVELOPMENT OF FINANCE THEORY AND CAPITAL MARKETS

The primary aim of this chapter is to present the supporting theories that bear relevance to this thesis, "The objective of theory is to explain & predict" (Schroeder, et al., 2011, p. 1). Therefore, "accounting theory should be able to explain why companies elect certain accounting methods over others and should enable users to predict the attributes of firms that elect various accounting methods" (Schroeder, et al., 2011, p. 1). The development of accounting theory originated in the United States as a result of the corporate scandals in the early 1900s and later was influenced by the establishment of professional accounting bodies in the US and the UK that published documents relating to accounting principles and standards for financial statements (Schroeder, et al., 2011, p. 4).

Financial information plays a very important role in our society for making efficient business decisions. Efficiency here means productive decisions which yield the expected profit required by the investor. The production of financial information is based on finance and accounting theories. Investors need this information to make informed decisions on buying, selling and holding equity securities. However according to the IASB and FASB "general purpose financial reports are not designed to show the value of a reporting entity; but they provide information to help existing and potential investors, lenders, and other creditors to estimate the value of the reporting entity" (FASB, 2010, p. 2). Investors and other users of financial reports rely on models derived from finance theories to make investment decisions. There are numerous theories relating to the decision-making process of equity investors, this includes the capital asset pricing model and fundamental analysis models, among others. A full explanation of all theories is beyond the scope of this study, however, the most important theories will be covered and especially those that are used by the equity investors in the ASE.

The main objective of this study is to investigate the decision-usefulness of financial information to equity investors. Central to this study is the conceptual framework that defines the decision-usefulness of financial information primarily for equity investors and other users of accounting information (Deloitte Global Services, 2012). Accounting research employs models from economic theory and finance theory, such as the equity investment theory, agency theory and organisational theory to name a few. Economic and finance theory provide models to examine the decision-usefulness of financial information and the behaviour of equity investors.

The theoretical origins began about a century ago when economists and empiricists began to develop links between credit markets, risk, and share market prices (Bachelier, 1900; Fisher, 1907; 1930; Keynes, 1936). Many researchers prescribed to the notion that capital markets are perfectly efficient and that prices move randomly and therefore no one can outperform the market (Fama, 1970; Malkiel, 2003). Meanwhile, there emerged abundant research claiming market anomalies and therefore the debate of inefficient versus efficient markets began. While the two directions in the research seem at odds, this chapter emphasises the importance of useful financial information and its relevance in capital markets regardless of the perception of markets as efficient or inefficient. In addition, since financial markets and institutions play critical roles in an economy, a description of the investment environment and the tools investors use to help in maximizing the investment decision-making process is discussed in the chapter.

Section 2.1 traces the development of finance theories that underlie asset valuation and the measures of risk and return. Section 2.2 describes the financial system and investment environment, including the function and characteristics of capital markets. Section 2.3 presents the types of information available to investors and the theory of market efficiency. Section 2.4 explains the major investment approaches that investors take based on their beliefs of market dynamics. Section 2.5 defines and explains the fundamental analysis and equity valuation models available to investors to aid them in making investment decisions. Section 2.6 summarises the chapter. Figure 2.1 illustrates the structure of chapter 2.

Chapter 2

Development of Finance Theory and Capital Markets

↓

2.1   Theoretical framework: finance theory

↓

2.2   Investment environment & capital markets

↓

2.3   Capital market efficiency

↓

2.4   Investment approaches

↓

2.5   Equity valuation models

        → 2.6   Summary
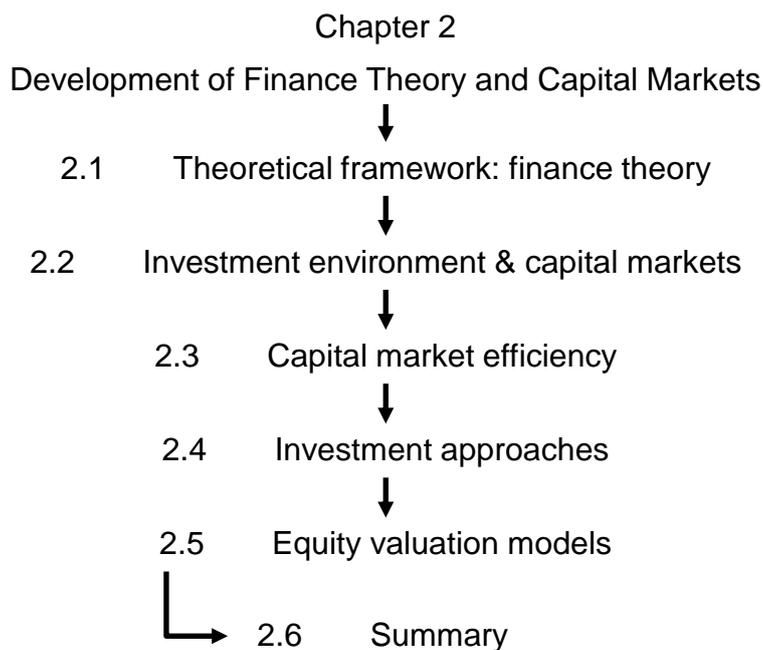
Figure 2.1: Structure of chapter 2

2.1   THEORETICAL FRAMEWORK: FINANCE THEORY

Prior to the classical developments in finance theory, financial markets were viewed as 'casinos' (New School of Social Research, 2007a). Meanwhile investors had few investment tools to help them evaluate financial assets and thus investment decisions were intuitive and speculative in nature. For example, Keynes' famous analogy of a beauty contest was used to explain the speculative nature of price fluctuations in equity markets in which he said:

"Professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. It is not a case of choosing those that, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be. And there are some, I believe, who practise the fourth, fifth and higher degrees." (Keynes, 1936, p. 156)

Early finance theory can be traced to the turn of the last century when pioneers such as Bachelier (1900), a French academician, first introduced mathematical finance and the theory of Brownian Motion – used in later years to model price movements and option pricing such as the Black-Scholes Options Pricing Model (1973). Bachelier's Brownian motion evolved into the random walk notion that later evolved into the concept of market efficiency; that is, a market in which financial assets reflects all relevant information. Bachelier's main conclusions are that prices follow a random walk process and that risk is a significant factor in the process of allocating resources in the credit markets. The random walk notion for share price movements was a base for later major theoretical and empirical research in modelling share prices. Pertinent theoretical developments in finance literature since its early origins are summarised in Table 2.1.

Table 2.1: Summary of classical theoretical research in finance

YEAR	AUTHORS	THEORY or CONTRIBUTION
1900	Bachelier	Theory of Brownian motion, origin of mathematical finance, random walk notion, risk as an important factor
1907	Fisher	Fisher effect and
1930	Fisher	Fisher separation theorem
1932	Preinreich	Modelled the P/B as a growth indicator.
1938	Preinreich	Theory of depreciation based on the law of capital value.
1938	Williams	Discounted future cash flows
1952	Markowitz	Portfolio Selection Theory
1959	Markowitz	Father of modern portfolio theory
1964	Sharpe	Capital Assets Pricing Model (CAPM)
1965	Lintner	Capital Assets Pricing Model (CAPM)
1970	Fama	Efficient Market Hypothesis
1973	Black & Scholes	Theory of Options Pricing on non-dividend paying shares
1973	Merton	Option Pricing formula with dividends
1976	Ross	Arbitrage Pricing Theory (APT)
1995	Ohlson	Clean Surplus Assumption

Irving Fisher, an economist and a pioneer of modern capital theory closely followed Bachelier's work supporting his major conclusion regarding credit market risk, contributed to the areas of money, inflation and interest rates. Fisher presented theoretical work on financial markets that recognised the basic functions of credit markets as a means of allocating resources over time and identified risk as an important factor in this process (Fisher, 1907; 1930). In *The*

Theory of Interest, Fisher defined capital as, "simply future income discounted or, in other words, the value of any property, or rights to wealth, is its value as a source of income and is found by discounting that expected income. The bridge or link between income and capital is the "rate of interest" (Fisher, 1930, pp. 28 & 30, ch.1). He viewed capital "as any asset that produces a flow of income over time and showed that its value can be based on the present value of the net income generated by that asset" and believed "the possibility that income invested now will yield greater income later" (Encyclopædia Britannica, 2007). He is recognized for the "Fisher effect" in which the nominal interest rate should approximately equal the real rate of interest plus the inflation rate (Higgins, 1995, p. 376). Thereby real interest rates must be the same across borders, however; this requires that capital flow freely between countries which is generally the case for developed markets but less so for countries with currency restrictions and regulations. He is also known for the Fisher Separation Theorem regarding the firm's investment decision whereby "first, the choice from among many possible income streams of that particular income stream which has the highest present value, and, secondly, the choice among different possible modifications of this income stream by borrowing and lending or buying and selling" (Fisher, 1930, pp. 44, ch. 6).Thus, the firm's investment decision is independent of the preferences of the owner and independent of the financing decision, which leads to the equation for loanable funds equilibrium that can be written as total investment, equals total savings (I = S) (New School of Social Research, 2007b).

Williams (1938), following Fisher's fundamental approach, disagreed with the prevailing view that share prices were mere reflections of expectations and instead proposed that share prices were determined by a share's intrinsic economic value. Williams proposed five factors that determine the intrinsic value of a firm's common share equity. They are: the inflation rate, the real interest rate, dividends, the discount rate, and if applicable, the exchange rate. Thus, he formulated the basis for the dividend discount model (DDM), the discounted cash flow model (DCF) and most equity valuation models that equate a firm's share value with the present value of its future cash flows and which remain at the core of modern day equity valuation approaches. In his PhD dissertation, *The Theory of Investment Value*, Williams derives the formula for the present value of a

perpetually and constantly growing stream of income per annum as: $P_0 = D_0 x/(1 - x)$ where $x \equiv g/r$, r is the constant riskless discount rate and g is the constant growth rate in dividends, where finite share prices require $g < r$ (Williams, 1938, p. 88). With the introduction of pro-forma financial statements, the present value formula and their variations, Williams provided the basic tools that are required for forecasting, budgeting and valuation that are still relevant for modern corporate finance.

That same year, Preinreich (1938) formulated the theory of depreciation in the *Annual Survey of Economic Theory*. He believed that the economic value of a firm should equal the book value of equity plus discounted abnormal earnings. Preinreich viewed a common share similar to a bond by comparing dividends to bond interest. "A common share is a bond which provides future payments indefinite in number and amount" (Preinreich, 1938, p. 273). Almost sixty years later after Preinreich, Ohlson (1995) developed the clean surplus assumption whereby book value should equal earnings minus dividends. Both Preinreich and Ohlson relate the "firm's share price to its assets-in-place (property, plant, inventory, etc., minus liabilities) plus its growth potential, which is measured by the firm's future abnormal earnings. These are the earnings in excess of the required rate of return on assets (cost of capital)" (Lev & Radhakrishnan, 2004, p. 19). Preinreich's approach recognized that growth in earnings should be part of a firm's intrinsic value.

The major developments in finance theory in the first half of the twentieth century established the foundation for developments in portfolio theory and capital market theory for the latter half of the century. Modern portfolio theory (MPT) began with Markowitz (1952, 1959) who developed the optimal portfolio selection theory based on trade-offs between risk and return of assets in a portfolio, also called the mean-variance model. Specifically, Markowitz measured the value of a portfolio using the expected return at the end of the annual accounting period and measured the portfolio's risk as the variance or its square root, the standard deviation (σ). He assumed that investors were rational so they prefer to maximize return and minimize risk by choosing the optimal portfolio of risky assets that lies on the efficient frontier.

The idea of a risk-free asset allowed the development of the capital market theory by Sharpe (1964), Lintner (1965) and Mossin (1966) in pricing risky assets. Then Sharpe (1964) and Lintner (1965) reformulated Markowitz's theory into what is known as the capital assets pricing model (CAPM) which states that the return on a firms' share is a function of the return on the market portfolio whereby the firm's specific risk can be diversified (CFA Institute, 2007b, p. 313). CAPM is expressed as:

$$E(r_i) = r_f + \beta_i \left[E(r_m - r_f) \right] \qquad (2.1)$$

Where:
E(r_i) is the expected return on share (i)
r_f is the risk-free rate of interest
r_m is the expected return of the market
β_i is the beta coefficient or the firm's risk in relation to the market
E(r_f - r_m) is the risk premium or discount for the firm.

The security market line (SML) in (Figure 2.2) illustrates the results from the relationship between risk (β) and expected return expected return in CAPM equation (2.1). Expected return is on the y-axis, beta is on the x-axis, and the risk-free rate is the intercept. Point M on the SML in Figure 2.2 is the market return when market risk or beta (β) equals 1. The SML slope is the market risk premium.
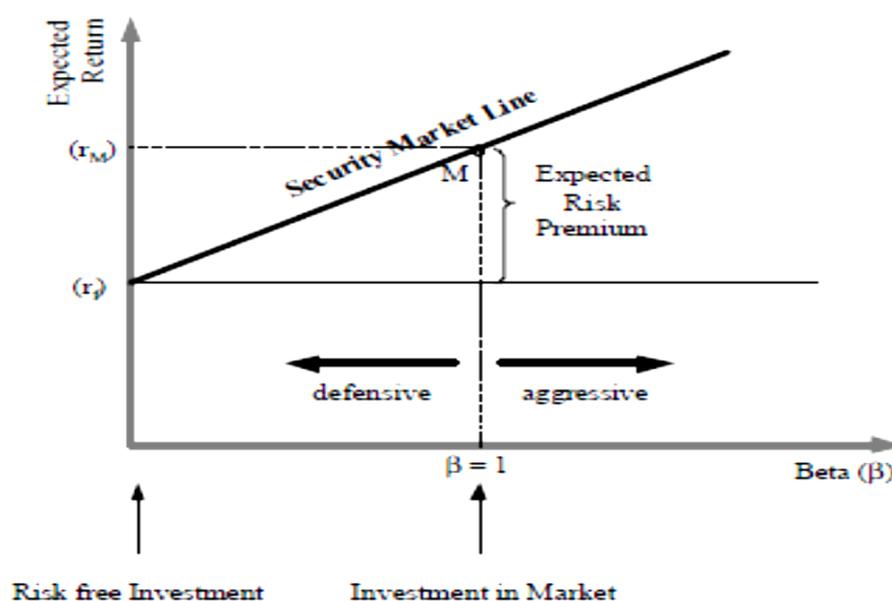
Figure 2.2: CAPM, SML and investment strategy
Source: (Gallati, 2003, p. 10)

CAPM was later challenged as having too many unrealistic assumptions (Roll, 1977). Empirical evidence soon revealed that it was possible to earn abnormal return that was not explained by CAPM (Basu, 1977; Banz, 1981; Fama & French, 1992). Criticism for the single risk factor model increased thereby making way for alternative pricing models. Ross (1976), who also criticised CAPM, developed the Arbitrage Pricing Theory (APT). Unlike the single factor CAPM the APT uses a multifactor model of risk (i.e. GNP, bond premiums, inflation, and yield curves, etc.) to determine expected returns that exploit security mispricing to earn risk-free economic profits; however, these factors are not specifically defined. The basis for APT is pricing by arbitrage, which according to Ross is the underlying logic of virtually all finance theory.

Other finance models were developed that used arbitrage reasoning as the basis for asset pricing. Most notable are the model by Black and Scholes (1973) and Ross (1976). Black and Scholes (1973) developed the theory of option pricing for non-dividend paying shares. Meanwhile, Merton (1973) also formulated an option pricing model but for dividend paying shares.

Developments in finance theory have provided investors with models to use as investment tools in selecting among different investment alternatives. Furthermore, the development in the finance theory provided researchers conceptual models used to stimulate vast amounts of empirical research in finance and accounting for studies that either support or criticize these models. Finance is largely concerned with valuation of the future value of an investment today or vice versa. The basic concepts of the investment decision-making process are the time value of money, financial statement analysis and asset valuation (Damodaran, 2001, p. 9). The time value of money allows comparisons of cash received at different times by discounting or compounding cash flows (Higgins, 1995, p. 241). Financial statement analysis uses accounting data from reported financial statements as inputs into equity valuation process to estimate expected flows and the required rate of return (Bodie, et al., 1993, p. 580; Reilly &Brown, 2006, p. 300). Asset valuation means determining the correct value of an asset in the marketplace (Reilly & Brown, 2006, p. 360; Stowe, et al., 2002, p. 313) and asset allocation mix for asset classes and weights (Bodie, et al., 1993, pp. 2, 895).

Essentially, people invest because they want to earn a return from their savings that compensates them for the time, the expected rate of inflation and the uncertainty of the return which is called the investor's required rate of return (Reilly & Brown, 2006, p. 7). Specifically, for an investor this means that he must first determine his investment objectives and identify the constraints in order to tailor sound investment and portfolio policies (Bodie, et al., 1993, p. 886). Investor objectives are based on the expected return requirements and risk tolerance for each individual or institutional investor. Investor constraints are internal or external limitations on investments (Bodie, et al., 1993, p. 892; Stowe, et al., 2002, p. 313). Investment constraints include: liquidity needs or the ease at which an asset can be sold at a fair market value; time horizon or the planned liquidation date; legal and regulatory factors; the investor's tax bracket; and unique needs or preferences of the investor (Bodie, et al., 1993, pp. 893-4; Reilly & Brown, 2006, pp. 49-54). Figure 2.3 illustrates the steps in the investment process necessary to determine an appropriate portfolio for the investor's strategy.
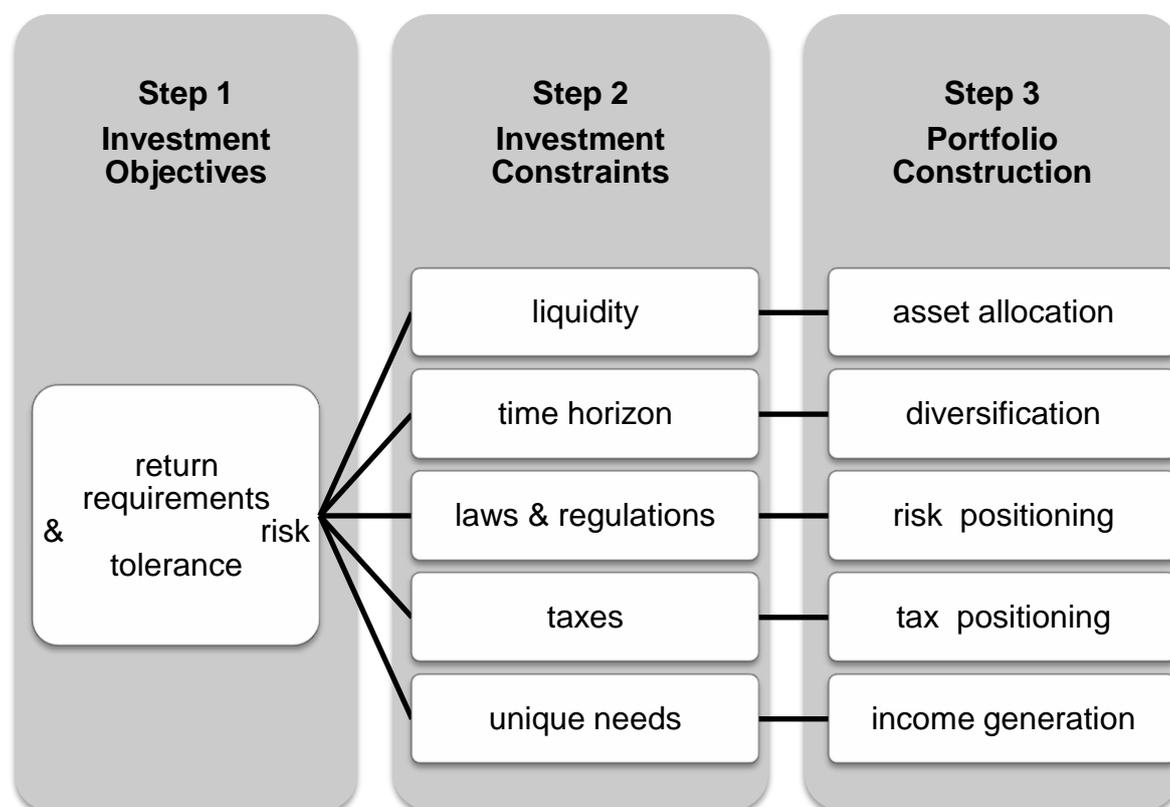
Figure 2.3: Portfolio investment process
Source: Adapted from (Bodie, et al., 1993, p. 887; Reilly & Brown, 2006, p. 42).

Investors are preoccupied with the required rate of return, which is the minimum rate of return required by an investor to invest in an asset given the asset's riskiness (Stowe, et al., 2002, p. 312). Figure 2.4 illustrates the components of total return for a portfolio.
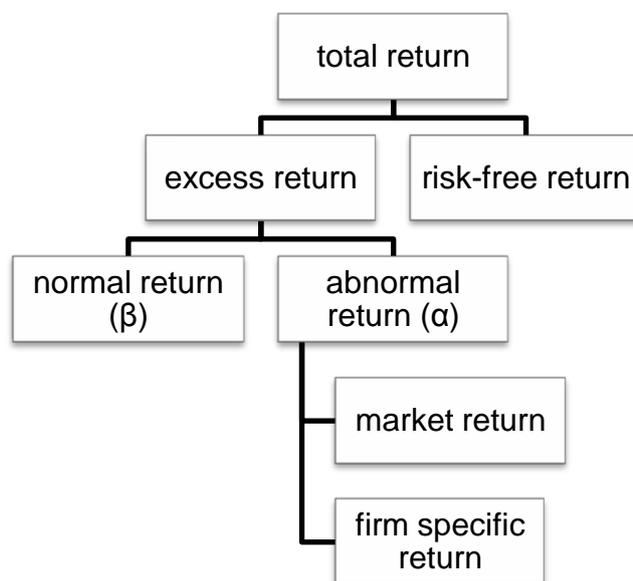
Figure 2.4: Components of total return for a portfolio
Source: Adapted from (Gallati, 2003).

Risk is "the uncertainty that an investment will earn its expected rate of return" (Reilly & Brown, 2006, p. 12). Risk premium is the compensation for risk measured relative to the risk-free rate (Reilly & Brown, 2006, p. 312). Total risk is composed of the market or systematic risk and firm specific or non-systematic risk. This classification is important because it is possible to eliminate firm specific risk through diversification and reduce market risk with negatively correlated assets. Figure 2.5 illustrates the components of total risk for any given asset or portfolio of assets according to the capital market models.

Figure 2.5: Risk components of a portfolio

Market risk is system wide risk that applies to all risky assets and is attributable to macroeconomic factors. Similarly, all shares within an industry sector are subject to industry risk. In contrast, firm specific risk is unique to each share due to a firm's individual characteristics such as credit risk, business risk, liquidity risk, country risk and exchange rate risk (Reilly & Brown, 2006, p. 23).

2.2   INVESTMENT ENVIRONMENT AND CAPITAL MARKETS

An economy's financial system includes its central bank and private banks, securities exchanges, pension funds, insurers, and national regulators—all of the firms and institutions that provide a framework for carrying out economic transactions and help to channel savings into investment (IMF, 2005). There are two major groups in the financial system: financial markets and financial intermediaries. Financial markets are the institutions through which a person who wants to save can directly supple funds to borrowers whereas financial intermediaries allow savers to indirectly provide funds to borrowers (Mankiw, 2007, pp. 562-4). Savings and investment are key ingredients to long-run economic growth that fuel productivity and increase living standards (Mankiw, 2007, p. 562).

The financial system serves a dual function. First, it enables the allocation of limited resources to entities that need funds to finance their business activities. Second, it enables the "promotion of responsible governance and control through providing outside investors a variety of mechanisms for monitoring inside decision makers" (Tadesse, 2003) through legal and regulatory requirements of relevant and faithfully represented financial information dissemination. "The financial crises of the late 1990s underscored the linkages between macroeconomic developments and financial system soundness. Indeed, weak financial institutions, inadequate bank regulation and supervision, and lack of transparency were at the heart of these crises" (IMF, 2005).

The most important financial markets are the bond and stock markets. The bond market is where the government or firms borrow funds from investors to finance

their activities. Firms can also raise funds by selling an interest in the firm's equity in the form of share certificates. For investors, a financial investment is a way to increase their wealth through the asset's future income or its appreciation. An investment is a "commitment of funds for a period of time to derive a rate of return that would compensate the investor for the time during which the funds are invested, for the expected rate of inflation during the investment horizon and for the uncertainty involved" (Reilly & Brown, 2006). Financial intermediaries include banks, mutual and pension funds and insurance firms. Figure 2.6 illustrates the flow of funds from suppliers of excess funds through financial intermediaries to firms that demand capital.
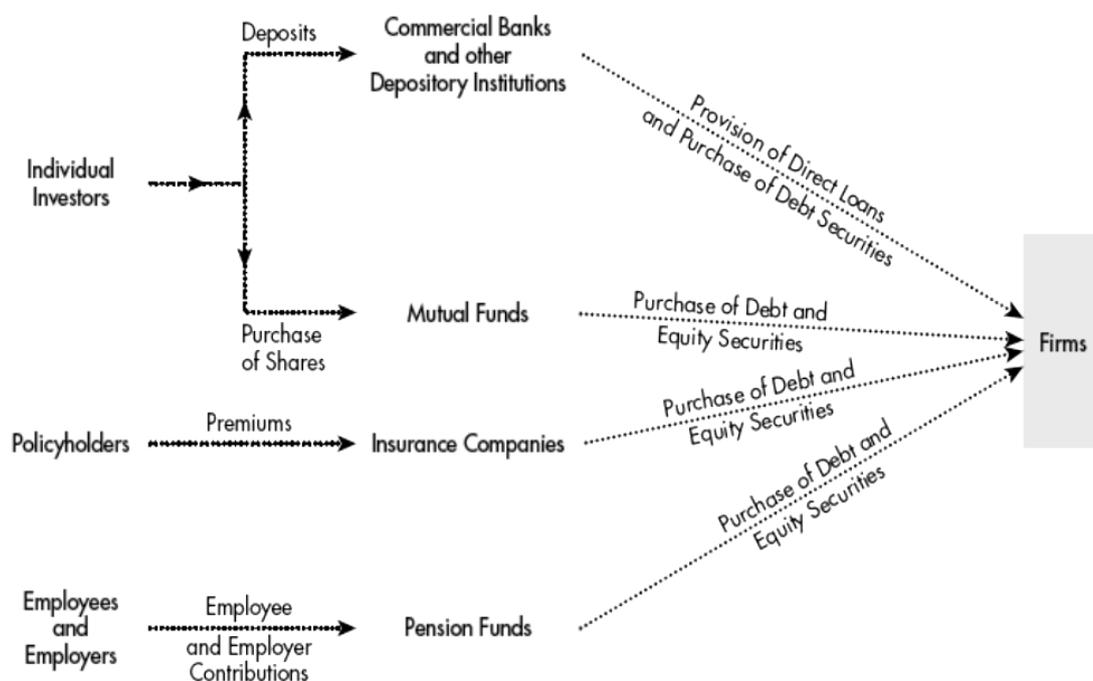
Figure 2.6: How financial institutions provide financing for firms
Source: (Gitman, 2007, p. 9).

In general, all financial institutions serve the same goal to direct the resources of those who want to supply funds into the hands of those who want to borrow the funds (Mankiw, 2007, pp. 562-4). Thus, in order for "a nation to realize its potential, it must have a mechanism capable of attracting savings and channelling them into investment projects that create wealth" (Gwartney & Stroup, 1997, p. 673). Capital markets provide investors with the pecuniary incentive to seek

investment opportunities that provide rewards to compensate for uncertainty.

Figure 2.6 shows the role of capital markets that serve a key function within the economy by supplying funds to fuel the productive capacity of firms within all economic sectors and to finance government expenditures. They are a means through which buyers and sellers are brought together to aid in the transfer of goods and services (Reilly & Brown, 2006). Markets also serve to create wealth for its participants, which are mostly achieved by the firm's main objective of maximization of shareholder wealth. Investors will increase their wealth because every time the firm grows, it results in an increase in share market prices, which means investors, will gain when they sell their equity investments. This is illustrated in Figure 2.7.
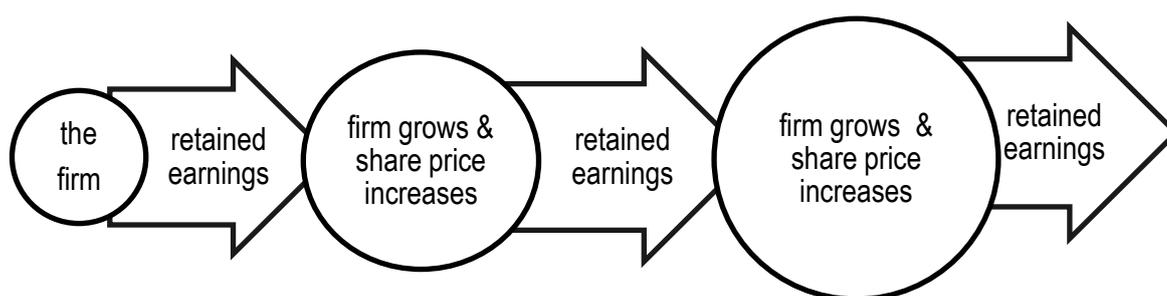
Figure 2.7: Maximization of shareholder wealth

While there are many types of financial markets with different qualities, an efficient market should have the following: timely, accurate and widely available information, continuous market pricing reflecting liquidity, market depth composed of numerous buyers and sellers, internal efficiency, and informational efficiency (Reilly & Brown, 2006). In the case of Jordan, the ASE defines an efficient market as a market in which prices reflect all relevant information (ASE, 2012). The development within the ASE is discussed in chapter 4. Figure 2.8 illustrates the qualities of a good securities market.
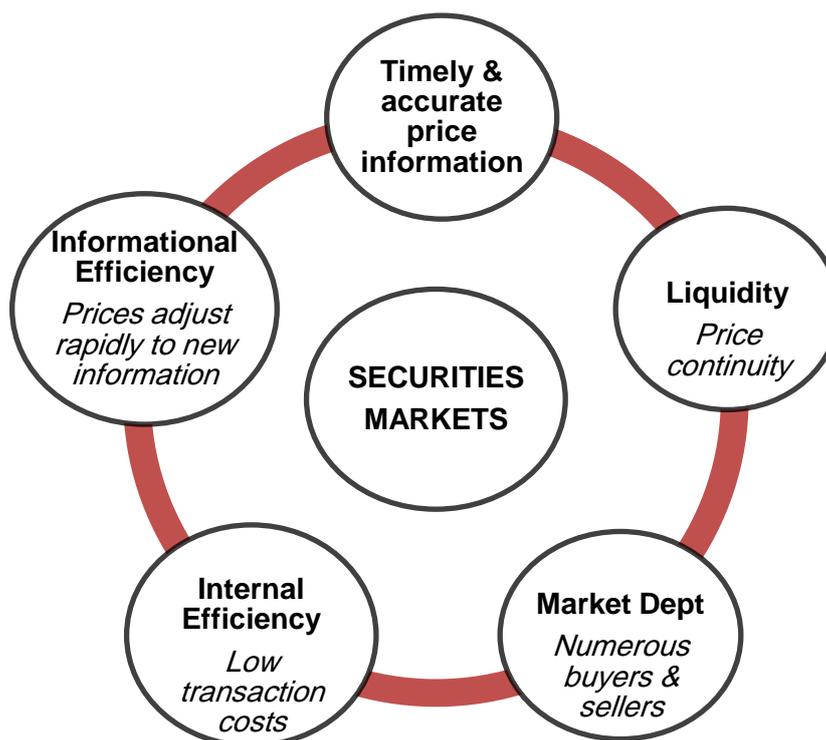
Figure 2.8: Qualities of a good security market
Source: Adapted from (Reilly & Brown, 2006).

There are two main types of financial markets, the money market and the capital market. Money markets deal with financial claims and obligations of less than one year and have high trading volume and low risk, whereas, capital markets deal with debt securities that have maturities greater than one year and with equity securities. Figure 2.9 illustrates the types of financial markets as they relate to short or long term investment horizons.
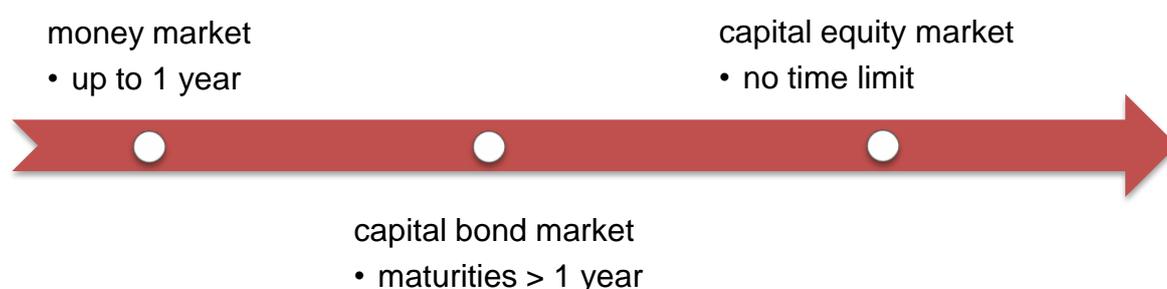
Figure 2.9: Types of financial markets

The money market is extremely important for governments to intervene in the economy by implementing monetary policies via open market operations by the country's central bank (CB). This directly results in changes in the money supply that cause interest rate changes. Capital markets are directly affected because as interest rates change, individual and business investment decisions change resulting in economy-wide consequences. Figure 2.10 illustrates the effect of open market operations and the role of financial institutions.

CB sells securities
• bank reserves decrease
• loanable funds decease
• interest rates increase
• investment increases

CB buys securities
• bank reserves increase
• loanable funds increase
• interest rates decline
• investment decreases
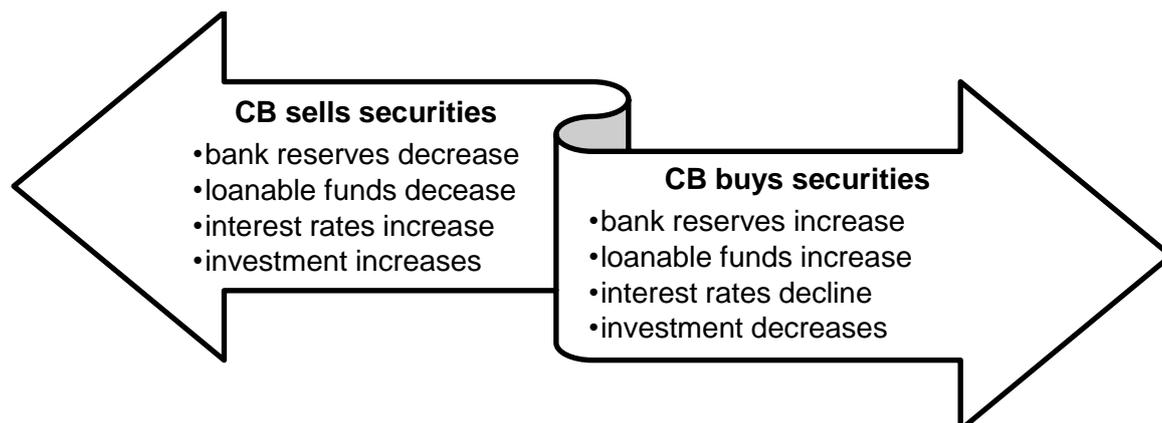
Figure 2.10: Open market operations of the central bank

Many types of securities, such as shares, bonds, commodities, real estate, derivatives, futures, foreign exchange and foreign securities instruments among others, are traded in capital markets each with their own risk-return characteristics. The three major types of financial assets are money market, equity and debt securities. Equity securities represent an ownership claim in the firm, while debt instruments represent a loan to the firm. Figure 2.11 illustrates the investment risk and return characteristics for major asset classes.
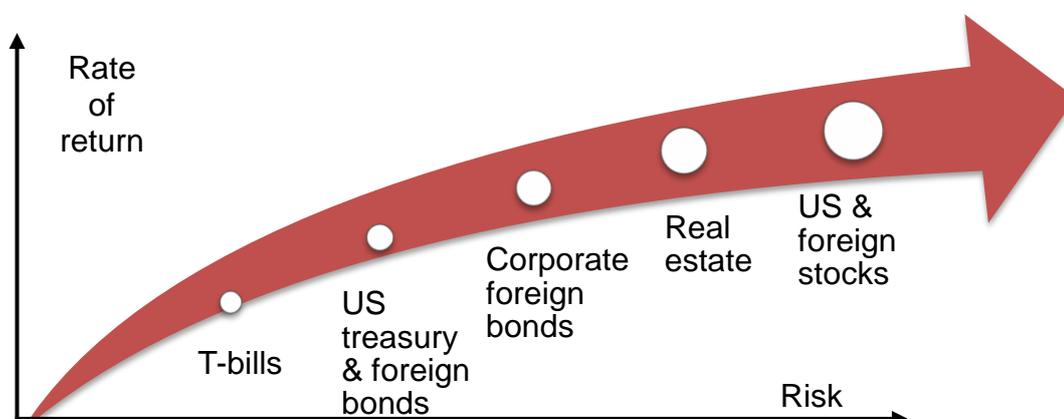
Figure 2.11: Alternative investment risk and return characteristics
Source: (Reilly & Brown, 2006, p. 98).

Government securities have the lowest risk and return, while shares have higher return at the cost of higher risk. Emerging market shares would outperform all the other asset classes because they have the highest risk-return trade-off. When firms issue bonds, in essence they are financing their growth through debt whereas when they issue shares they are financing their growth through equity (Mankiw, 2007). When investors buy debt securities, they are lending money to the firm, and then the firm guarantees to pay the investor a regular fixed amount called the coupon rate and the principal amount at the end of the maturity. Figure 2.12 illustrates a fixed-income security or bond.

issuer payment to the bondholder

coupon   *coupon*   *coupon*   *coupon*   *coupon*   *principle + coupon*

term to maturity

principle payment to the issuer
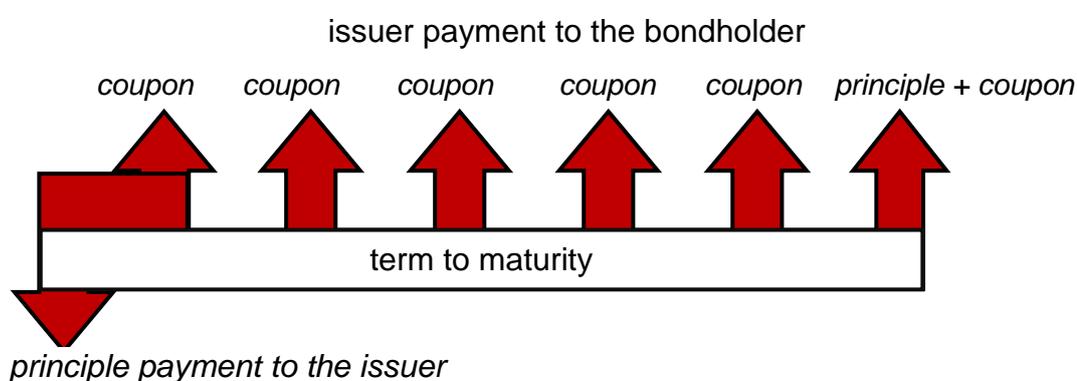
Figure 2.12: Fixed-income security

Most capital markets have a similar organization and are divided between the primary and secondary markets. The primary market is where new issues of bonds, preferred and common shares, and private placements are offered to the public by corporations or the government (Bodie, et al., 1993, p. 23), referred to as an initial public offering (IPO). The secondary market specialises in equities, government and corporate bonds that already have been issued and are sold and/or purchased by stockbrokers and dealers that trade in the secondary markets. National stock exchanges are the primary listing markets where shares, common and preferred, are traded. Two well-known exchanges are America's New York Stock Exchange (NYSE) and the UK's Financial Times Stock Exchange (FTSE). Shares can be traded away from the national exchanges in the third market or the over-the-counter (OTC) market.

There are many types of bonds but the major ones are government bonds, municipal bonds and corporate bonds that are sold by bond dealers in the bond market. The most recent development is that of the Alternative Trading Systems (ATSs), or the fourth market, where securities can be traded electronically by the Electronic Communications Networks (ECN) and the Electronic Crossing Systems (ECSs) (Reilly & Brown, 2006). Figure 2.13 illustrates the basic organization of many secondary equity markets.

The contribution of financial markets cannot be overestimated. Financial markets "assimilate and aggregate a remarkable amount of information about current conditions and future prospects into one measure — the share price, and no measure comes close to providing as timely or as comprehensive a measure of a firm's standing" (Damodaran, 2001, p. 26). Invariably, this leads to the debate regarding market efficiency and the extent to which markets are efficient or inefficient.
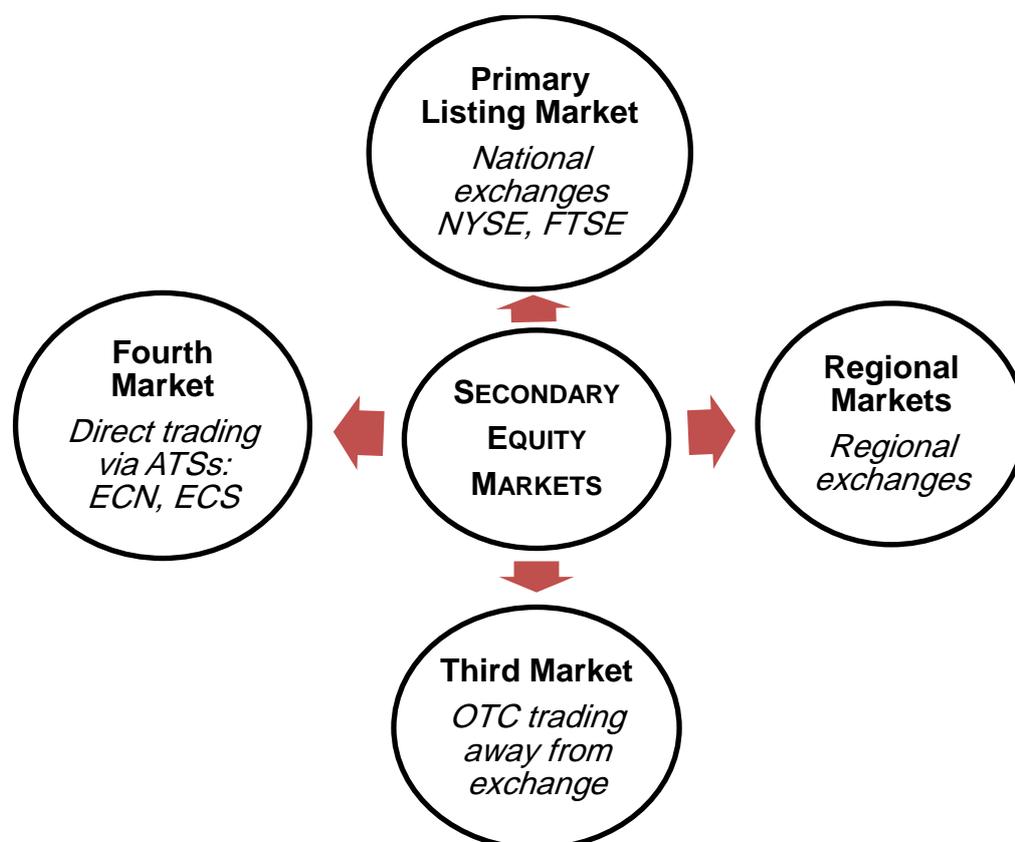
Figure 2.13: Organization of secondary equity market
Source: Larry Harris, 2003 in (Reilly & Brown, 2006, p. 112).

2.3   CAPITAL MARKET EFFICIENCY

The extent to which markets are efficient or inefficient relates to this investigation because it applies to the efficiency of emerging markets and in particular, the smaller ones such as Jordan. Market efficiency refers to "a market that is efficient in processing information [whereby] prices 'fully reflect' available information" (Fama, 1976, p. 133). The Security Depository Centre (SDC) for the ASE, defines capital market efficiency as the degree to which the present asset accurately reflects current information in the market place (Securities Depository Center, 2012). Market efficiency is important for everyone because markets set share prices which determine how available resources are allocated among different investments and as a result impact on economic growth and sustainability (Singal, 2004). Furthermore, numerous emerging financial markets are characterized by the absence of quality information about firms, thin trading and extreme volatility (Damodaran, 2001, p. 36) that may have implications to this research.

The idea of efficient markets was formalised by Fama (1970) who developed the efficient market hypothesis (EMH). Three forms of market efficiency were proposed and tested. Accordingly, markets can be expected to be efficient because:

- of a large number of rational, profit maximizing investors
- information is costless and widely available
- information is generated in a random fashion
- investors react quickly and fully to new information

Firstly, the weak-form hypothesis asserts that current share prices fully reflect all stock market information including historical prices, rates of return, trading volume data, and other market-generated information (Bodie, et al., 1993, p. G5). This excludes the use of technical analysis because it focuses on trading patterns and filter rules, which Fama argues are nonsense (Fama, 1976, p. 141).

Secondly, the semistrong-form hypothesis asserts that current share prices already reflect all publicly available information such as company-specific information (Bodie, et al., 1993, p. G5; Fama, 1976, p. 141). This includes weak-form and all nonmarket information such as earnings announcements, P/E multiples, P/B ratios, dividend yield, IPOs, stock splits economic and political news (Fama, 1976). Therefore, financial analysis is useless because it is based

on determinants such as earnings and dividends and prices already reflect all new information, therefore it cannot be used to beat the market (Fama, 1976).

Thirdly, the strong-form hypothesis, which includes weak-from and semistrong form, asserts that share prices reflect all relevant information from public and private sources, such as insider information (Bodie, et al., 1993, p. G5; Fama, 1976). This means that markets are simultaneously perfectly efficient with cost-free information that is available to everyone (Reilly & Brown, 2006) which means that even private information is of no use to investors.

However, there are limitations that prevent capital markets from having perfect informational efficiency (Grossman & Stiglitsz, 1980). For example, the cost of collecting and analysing information is not free and neither is the cost of trading in capital markets. Also, funds available for trading are limited. Prices, therefore, may adjust to new information with a time lag depending on the cost of information, the cost of trading, and capital availability among other limitations. As a result, the greater the cost of trading and of obtaining information, the greater the extent of mispricing takes place (Singal, 2004). Figure 2.14 illustrates the different types of information available to investors and other users of information and the corresponding type of information as classified by the EMH.
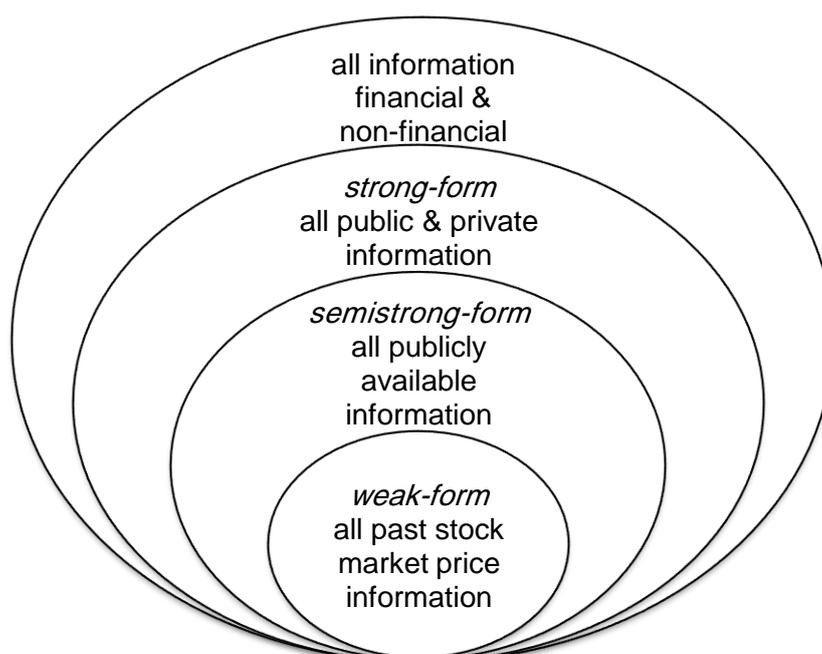
Figure 2.14: Information available to investors according to the EMH
Source: Adapted from (Fama, 1970).

The EMH stimulated a great deal of research and market efficiency testing, in both directions, to prove that markets are efficient, and to disprove the different forms of market efficiency. A summary of the relevant research in market efficiency is presented in Table 2.2.

Table 2.2: Summary of empirical research in market efficiency

YEAR	AUTHORS	RESEARCH OBJECTIVE	SAMPLE	METHODOLOGY
1900	Bachelier	Price movement	French commodities	Statistical analysis
1933	Cowles	Performance of forecasters	45 forecasting firms from 1928-32	Statistical analysis
1934 1935	Working	Differential price behaviour	Wheat prices 1907-1910 &1924-28	Statistical analysis
1937	Cowles & Jones	Share price movements	Share prices from 1835-1935	Statistical analysis
1953	Kendall	Share prices	19 British industrial share indexes	Statistical analysis time series
1959	Roberts	Share patterns or technical analysis	Closing prices during 1956	Statistical analysis
1969	Fama, Fisher, Jensen & Roll	Market efficiency	940 stock splits of 622 NYSE firms from 1927-1959	Use market model residuals to test market efficiency
1970	Fama	Efficient Market Hypothesis	US shares in various periods	Depends on form of efficiency tested
1980	French	Weekend effect anomaly	US firms from 1885-1977, S&P from 1953-1977	OLS procedure
1992 1993 1996	Fama & French	Markets are efficient	US firms from 1927-2001.	Regression using a three factor CAPM model
2000	Davis, Fama & French	Explains the value effect	Analysed B/M data from 1929 to 1963	Premium related to value shares prior to 1963 supports the value effect
2003	Schwert	Market efficiency and anomalies	Different sample periods	Descriptive analysis

Research that share price changes are independent of one another and are therefore random go back to the turn of the century with the work of Bachelier (1900) which was discussed in the finance theory section 2.1. Three decades later, Cowles (1933a) examined market efficiency when he investigated 45 professional agencies and compared their investment forecasts with those of the market return. He found that, on average, the firms' forecasting performance was worse than that of the market performance by 1.3%. Similarly, Working (1934,

1935) found no evidence of outperforming or beating the market and Cowles and Jones (1937) documented that share prices fluctuate randomly. These conclusions supported Bachelier's premise of the random fluctuations of commodity prices. Studies supporting market efficiency was imprecise until the 1950s when the appearance of a number of empirical research articles relating to stock market efficiency began to be published that investigated stock market patterns or technical analysis. They found that security prices behave like a roulette wheel that "has no memory" (Roberts, 1959, p. 3) and that prices wander randomly (Kendal, 1953).

By the 1960s, evidence indicating that share price variations follow a random walk with no predictable bias abounded and culminated in the development of the EMH. There followed abundant evidence in support of the random walk hypothesis that trading based on available information, including stock splits, fails to provide abnormal return or profit (Fama, 1970; Fama, et al., 1969). Fama and French (1992, 1996) also examined different portfolios of US stocks for abnormal returns and found no reliable difference from zero for portfolios based on equity capitalization, book-to-market value (B/M) ratio, earnings-to-price (E/P) ratio and dividend yield. They used a three-factor CAPM. The other two factors were size and value as measured by the B/M ratio. Schwert (2003) tested for well-known anomalies and concluded that they did not hold up in different sample periods. Most notably, the size effect, value effect, weekend effect and dividend yield effect "seem to have lost their predictive power" (Schwert, 2003, p. 968). Likewise, Malkiel (2003) investigated criticism on the efficient market hypothesis by those who claim that share prices are partially predictable. He concluded that stock markets are far more efficient and far less predictable than what was concluded by researchers and whatever anomalies might exist will not provide investors with excess risk adjusted returns. Indeed, the existence of "bubbles" is seen as the exception rather than the rule (Malkiel, 2003, p. 80) that will not persist nor allow professional investors to beat the market.

As researchers began to scrutinize the market efficiency contention, it led to a wave of a different type of research entitled 'market anomalies' that criticize the concept of market efficiency and support the forms of active asset selection strategies based on fundamental analysis. Anomalies are empirical results that

are inconsistent with CAPM and, indicate one or two of the following: "profit opportunities or market inefficiency and/or misspecification of inadequacies in the underlying asset pricing theory or models" (Schwert, 2003, p. 940). Market anomalies can be found in both developed and emerging markets (French, 1980; Basu, 1977; Banz, 1981; Reinganum, 1981; Fama & French, 1998).

Market anomalies have presented challenges to the EMH. Among them are: the value effect, small firm effect, size effect, turn-of-the year or January effect, weekend effect, contrarian effect, B/M, new issues, neglected firm effect and liquidity effects, reversal effect, inside information, Value Line enigma, post-earnings announcement drift, mutual fund performance, etc. Research using more recent sample periods have documented that some anomalies have disappeared while others persist (Schwert, 2003). The following discusses tests for the more common anomalies.

French (1980) first documented the 'the weekend effect' anomaly. He investigated the usefulness of accounting earnings for share price valuation by employing a sample of US firms during the periods 1885-1977 and the Standard and Poor's (S&P) composite portfolio from 1953-1977. The methodology employed the market model and ordinary least squares procedures (OLS). The results showed negative average returns over weekends for the S&P composite portfolio from 1953-1977, while other periods indicated less negative but significant results. Keim and Stambaugh (1984) and Lakonishok and Levi (1985) also documented the weekend effect using different sample periods. Due to the weekend effect or tendency of prices to be higher during weekends, investors then are discouraged from buying on Friday afternoon and Monday morning. Similarly, another recurrent pattern, the 'January effect' was documented by Keim (1983) and Reinganun (1983) who reveal the tendency that higher returns tend to be earned in the first month of the year.

Other researchers documented the size effect anomaly (Banz, 1981; Reinganum, 1981). Banz's (1981) sample consisted of firms from the NYSE during the period 1936-1975 and a methodology that employed the market model and OLS procedures. Results showed that the average returns earned from investing in small capitalization firms are larger than the returns predicted by CAPM. Knez and

Ready (1997) also found a size effect when they investigated the robustness of the size & B/M ratios in cross-sectional regressions found by Fama and French (1992). Data uses a least-trimmed squared estimator that removes a percent of the observations.

Several researchers showed that the P/E multiple is an indicator of mispriced shares. For example, Basu (1977) documented the 'value effect' anomaly. He investigated the use of P/E ratios to predict share returns for a sample of 1,400 firms over the period 1956-1971. Basu reached the conclusion that shares with low P/E ratios outperformed those with high P/E ratios by more than 7% per year. These results indicate market inefficiency and a direct challenge to CAPM that was used as a benchmark in this study. Chan, Hamao and Lakonishok (1991) found the same results. They later employed a sample of firms listed on the Japanese stock market and documented that ratios of B/M equity plays a significant role in explaining the cross-section of average returns on Japanese shares and also indicate risk. Fama and French (1997) report that value effects exist for a sample of firms in thirteen countries during the period 1975-1995.

Research done by the Dimensional Fund Advisors (DFA) found negative abnormal returns that were not consistent with the findings of Fama and French (1992). The sample included small US firms with high B/M ratios during the period 1963-1991 in which Fama and French (1992) stated that this type of portfolio would have earned positive abnormal returns. Daniel and Titman (1997) concluded that size and market-to-book (M/B) are not risk factors in an equilibrium-pricing model as reported by Fama and French (1996). Ritter (1991) and Loughran and Ritter (1995) documented negative long-run performance of new issues for a sample that includes 1,526 initial public offerings for the period 1975-1984. Finally, Lo, Mamaysky and Wang (2000) documented that some of the signals indicated by technical analysis have predictability.

Essentially, the stock market will react with regard to the release of financial information or any other type of financial and non-financial information. This invariably indicates that there is some sort of market efficiency that may support the contention that no one can beat the market. Fama also acknowledged that the hypothesis that the market is efficient is not likely to be a completely accurate

view of the world' and that tests of market efficiency can be viewed as 'evidence that helps to judge the extent to which the market is efficient or inefficient' (Fama, 1976, p. 166). With evidence on both sides of the debate, investors are left in a quandary – wondering who is right – and what to do. There are no simple or definite answers; however, investors can choose the investment strategy that accommodates their view of market efficiency. This may be the fundamental decision separating those who use financial analysis and asset valuation techniques and those who do not.

2.4   INVESTMENT APPROACHES

The efficient market debate plays a key role in the choice investors make when selecting between investment strategies or the "approach to investment analysis and security selection with the goal of organizing and clarifying investment decisions" (Stowe, et al., 2002, p. 5). Investment decisions relating to asset selection can be based on one of two different approaches: passive investment strategy and active investment strategy. Adherents of market efficiency advocate a passive investment strategy where the investment decision calls for an investment across assets in a given asset class (Bodie, et al., 1993). The aim of this approach, which is based on the assumptions of the EMH, is to buy and hold a broadly diversified portfolio. An example of passive investment strategy is indexing strategy, where investors buy the shares of a financial index such as the FTSE 100 (see Figure 2.15) in index proportions as a proxy for the market and then are assured the market's rate of return without the need to value individual shares.
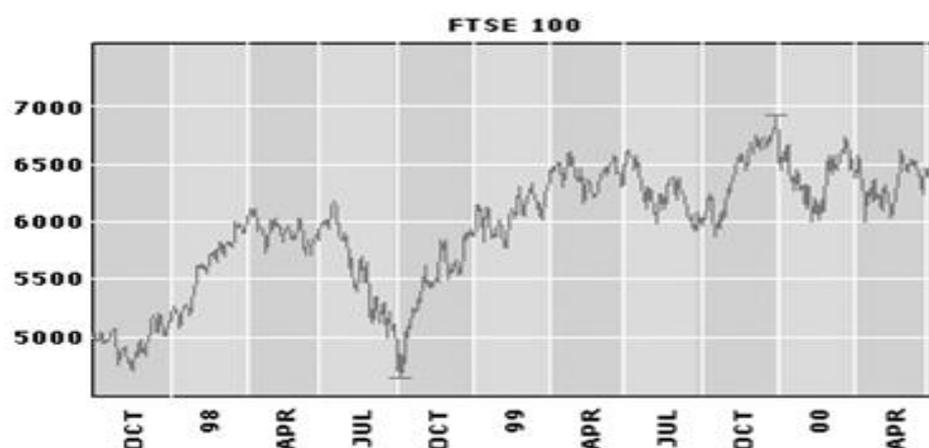
Figure 2.15: FTSE 100 stock chart

This is generally accomplished by buying a passive investment fund or the pooled investment of a group of investors such as the well-known sub-prime mortgaged-backed securities. Figure 2.16 illustrates a passive investment fund.

SINGLE INVESTOR — CASH → **INVESTMENT FUND** — CASH → **STOCK MARKET**

Figure 2.16: Investment fund

Passive investors assume the market is efficient such that it is unlikely anyone can beat the market. Passive investment management has advantages. It is cheaper to manage and to get investment advice and easier to diversify than active management. The strategy is so simple it is almost automatic. A passive investment strategy limits investors' losses to that of the market. Malkiel (1990), the random walk theory proponent, adds that "broad diversification rules out extraordinary losses relative to the whole market; it also, by definition, rules out extraordinary gains" (Malkiel, 1990, p. 362).

The stock market crash of October 1987 where share prices dropped 20% in a single day, the end of the technology dot-com bubbles during the end of the 1990s and most recently the global financial crisis are examples of market jitters which have cast doubts on the EMH. Consequently, the choice of investment strategy is ultimately left with the individual investor and his particular income needs and risk profile.

The second approach, active investment strategy, is based on the belief that markets are not perfectly efficient and therefore opportunities to earn abnormal returns exist. Figure 2.17 illustrates differences in the return for each investment strategy.
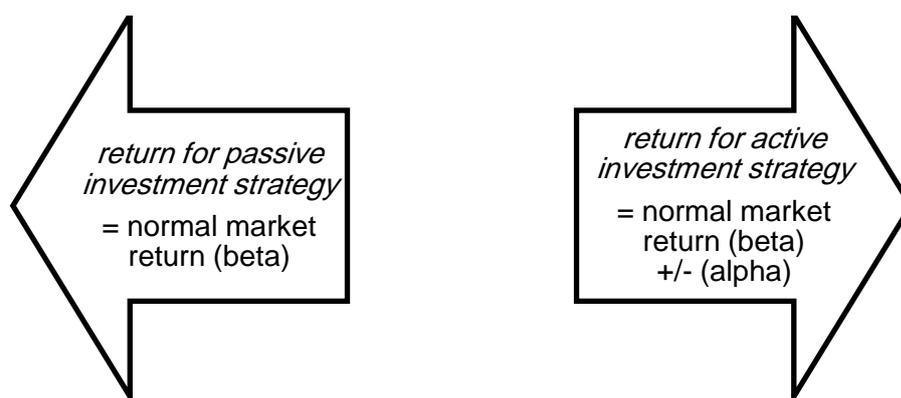
Figure 2.17: Return for investment strategies

Thus, the investor's objective is to find mispriced securities; that is, over or under valued firms compared to a share's intrinsic value. Investors commonly use fundamental or financial analysis as a tool to seek a better risk-return trade-off before investing in risky assets such as equity securities. A primary objective of financial analysis is the comparative measurement of risk and return to make investment decisions (White, et al., 1994, p. 5). Understanding of financial analysis is needed in order to find a share's intrinsic value. Intrinsic value is the value of an asset given a hypothetically complete understanding of the investment characteristics (Stowe, et al., 2002, p. 311). Active investors will also choose an investment style such as growth or value stock selection techniques. Growth shares are characterised by rising market price, strong growth trend and are cheap at any price. Value shares are characterised by stable/falling market price and strong financials cheap at current price. Figure 2.18 illustrates both the growth and value investment styles.
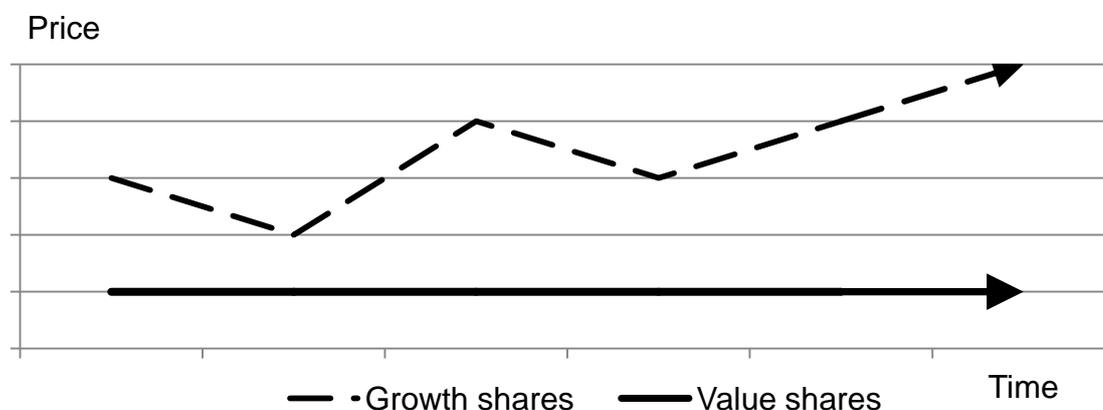
Figure 2.18: Major investment styles

Many models have been developed to ascertain with some degree of confidence the implicit or 'true' value of a security. For a share, its intrinsic value is the value derived from the fundamental analysis of the share's expected returns or cash flows. Mispricing results from a difference between the estimated intrinsic value and the current market price of a share (CFA Institute, 2007b, p. G14). Even in efficient markets, mispricing will occur as supported from market anomalies documented in the literature. Additionally, the information available may be incorrect because some firms release misleading information thus processing that information is wrong, or information is processed above or below expectations and some investors are willing to trade at a different price from its expected value (Damodaran, 2001). Identifying mispricing when it occurs is elusive because intrinsic value depends on estimations based on assumptions about future earnings, discount rate and risk variables that may be faulty (Reilly & Brown, 2006). This is perhaps why many investors and analysts employ several valuation models for synergistic effects and as a crosscheck for accuracy.

In time, due to the forces in market equilibrium, the share market price drifts toward its intrinsic value because investors recognize the discrepancy, correct it and then it may deviate again (Reilly & Brown, 2006). In fairly efficient capital markets, a superior analyst or successful investor must be able to interpret public information better than others and/or understand what variables are relevant to the valuation process and have the ability to do a superior job of estimating these variables (Reilly & Brown, 2006). Figure 2.19 illustrates how the mispricing of securities and its fundamental intrinsic value relate over time.
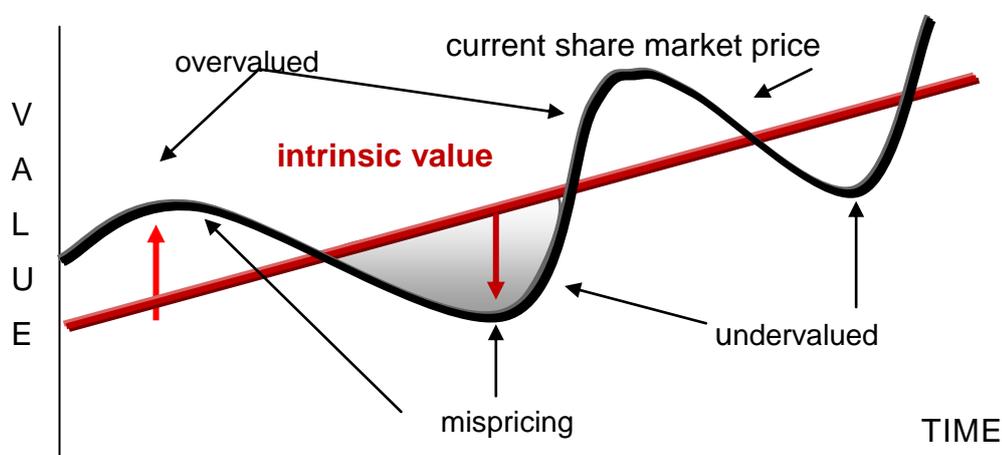
Figure 2.19: Relationship of share market price & intrinsic value

The general decision rule is that investors would buy or hold a share when it is undervalued compared to its current market price and not buy or sell the share if they owned an overvalued share (Reilly & Brown, 2006, p. 571). However, that would depend on the unique circumstances for each firm. Firms may be undervalued due to poor performance or overvalued yet profitable and efficient so market participants would recognize this and share prices would adjust to this information. Thus, markets are said to be efficient if the market price of a share reflects the firm's true value or if there is any mispricing, it is random and adjusts immediately (Damodaran, 2001). Not all markets react to new information in exactly the same way. Some markets are more efficient in the adjustment of share prices to the release of new information. The difference between price adjustments for an efficient market, a slow learning market and an over reactive market when new information is released is illustrated in Figure 2.20.
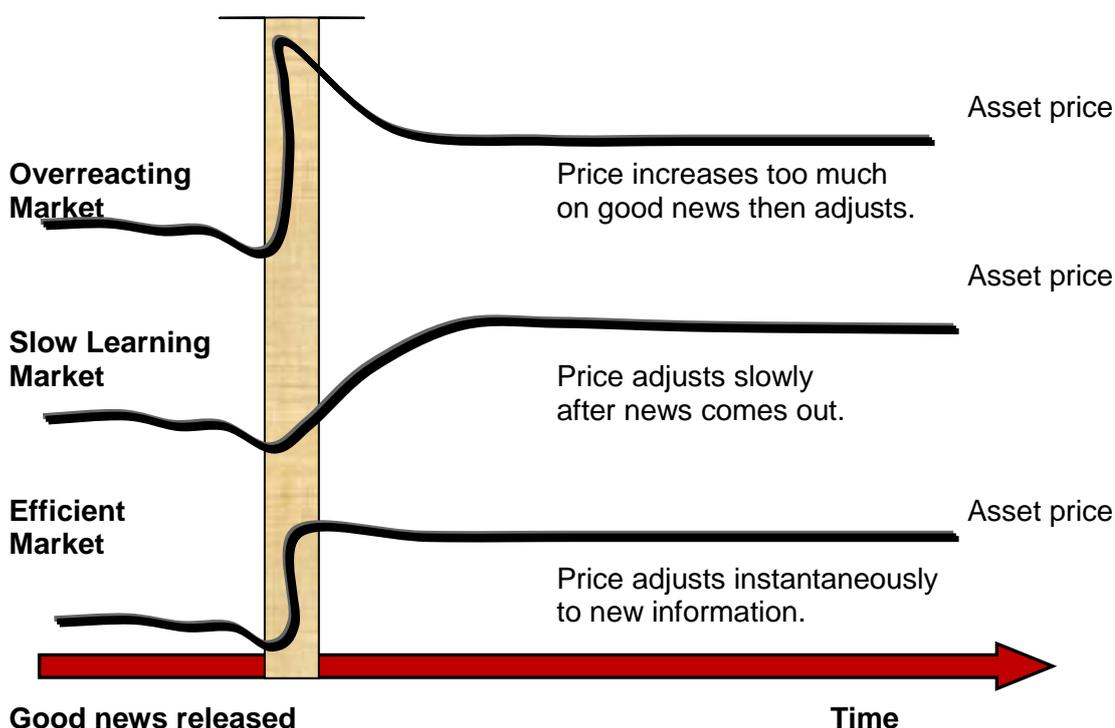
Figure 2.20: Market price adjustment to a good news announcement
Source: Adapted from (Damodaran, 2001, pp. 144-145).

Investors seek to increase their wealth by choosing assets that will have superior performance in the future. If capital markets are informationally efficient whereby share prices reflect all available public information, then the expected returns implicit in the current price should reflect its risk (Reilly & Brown, 2006). However, in general, investors are risk adverse. "They want 'return' to be high… and they want this return to be dependable, stable, not subject to uncertainty" (Markowitz, 1959, p. 7). Modern portfolio theory assumes that there is a positive relationship between rates of return and risk. Accordingly, the amount of return expected might depend on the amount of risk the investor is willing to assume. Investors seek to manage risk in order to further increase returns that can be performed easily by diversification into different asset classes and into international emerging markets. The benefits of international diversification include risk reduction effects that reduce the correlation between portfolios of assets.
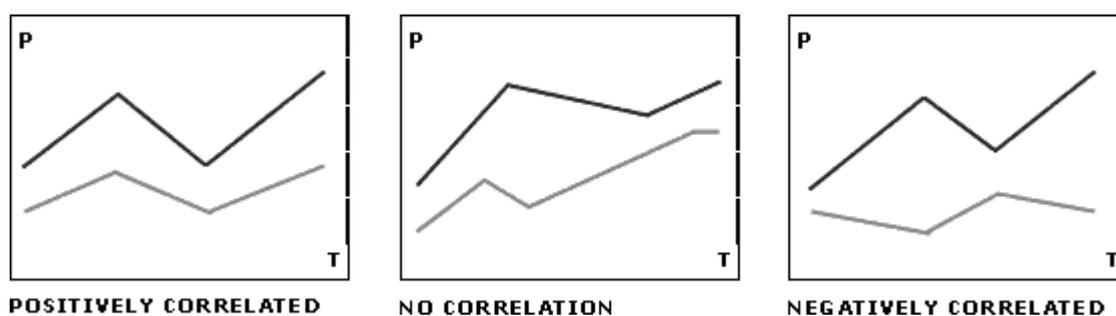
Figure 2.21: Correlation between portfolios of assets

Investors' objectives of return and attitudes toward uncertainty and risk inevitably influence their choice of investment strategy, equity valuation and share selection techniques. Advances in finance theory have provided valuable models that are widely used to measure both an asset's implied value as well as its risk.

2.5   EQUITY VALUATION MODELS

When investors choose to invest in financial assets, they must make decisions as to when to buy or sell, which asset to select, how many asset classes to include, etc. Investors rely on essential tools to help them answer those questions and to make good investment decisions; specifically these tools are based on the

concept of the time value of money, financial statement analysis, and asset valuation (Damodaran, 2001). Since money is worth more today than it is tomorrow, an understanding of time value of money is prudent. Underlying any basic financial analysis is the examination of financial statements that contain the specific information regarding a firm's financial position. In deciding which asset to invest their funds, investors employ valuation models to guide them in how to value an asset (Damodaran, 2001).

Investors who choose an active investment strategy usually evaluate potential investment opportunities using some sort of equity valuation model. To begin with, what is equity valuation? "It is the estimation of an asset's value based either on variables perceived to be related to future investment returns or on comparisons with similar assets" (Stowe, et al., 2002, p. 2). When investors or analysts engage in asset valuation, they must necessarily go through a decision-making process. Inherent in this process is selecting an appropriate valuation model, estimating the value of the share, and finally making a decision whether to buy, sell, or hold that particular asset. There are, of course, many other inputs into the decision-making process that are beyond the scope of this research, but this study focuses on the use of financial accounting information as part of asset valuation.

There are three broad types of equity valuation models for assessing the value of a firm as an on-going concern, market-based models, absolute or accounting-based models and relative valuation or mixed models. Market-based models use a firm's share price and/or dividends to measure a share's return. Examples of market-based models include: holding period return (HPR), market value added (MVA), M/B and the cost of capital among others. Absolute valuation models use accounting based data from reported financial statements, such as the company's earnings, dividends or cash flow. The most important type of absolute valuation model is the present value model, regarded in academic finance theory as the fundamental approach and most appropriate method to value equity (Bodie, et al., 1993; Damodaran, 2001, p. 76; Stowe, et al., 2002, p. 18). Absolute valuation models use the financial information on a given asset to discount the expected future cash flows at a relevant discount rate to find an asset's intrinsic value. Examples of accounting-based or absolute valuation models include: dividend

discount models, discounted cash flow models and residual income models among others. Mixed models use a combination of a market-based amount, such as the share market price, and an accounting-based amount, such as earnings, sales, or cash flow to specify an asset's value relative to that of another asset as a means to compare if the share is over or under valued. The most well known relative valuation model is the P/E multiple, largely favoured by individual and institutional investors alike (Stowe, et al., 2002, p. 19). Other relative valuation models include: P/B ratio and dividend yield among others.

Investors can and frequently use multiple asset valuation tools; in addition, professional investment analysts often employ their own specially designed techniques. Active investment strategist can use one or more of the following common equity valuation models presented in Table 2.3.

Table 2.3: Types of equity valuation models

Market-based models	Absolute valuation models	Relative valuation models
♦ holding period return(HPR)	♦ dividend discount model (DDM)	♦ P/E multiple
♦ market value added (MVA)	♦ discounted cash flow model (DCFM)	♦ P/B ratio
♦ market to book ratio (MB)	♦ residual income model (RIM)	♦ P/sales ratio
♦ cost of capital	♦ asset-based valuation	♦ P/cash flow ratio
	♦ free cash flow to firm model	♦ dividend yield
		♦ technical analysis

Market-based models rely on external sources of information to measure a share's return during a specific period and they are simple to determine. Holding period return is the historical rate of return a shareholder earns over a specified period of time and the holding period yielding (HPY) in percentage terms are simply calculated as (Reilly & Brown, 2006, p. 8):

$$\text{HPR} = \frac{\text{ending value of investment}}{\text{beginning value of investment}} = \left(\frac{\text{end of period share price} - \text{beginning of period share price} + \text{dividends paid during period}}{\text{beginning of period share price}} \right)$$

$$\text{HPY} = \text{HPR} - 1$$

While this is an incredibly easy model to use, the HPY is a relative measure of return that does not consider risk and therefore it is not possible to evaluate the risk-return trade off.

MVA is a firm's market value (total market capitalisation) minus the balance sheet capital, that is, the capital employed in the balance sheet. However, MVA is an absolute rather than a relative measure that ignores the time when market value was created. Another problem is that the amount for capital employed may be subject to accounting problems; the cost of assets may be recorded at historical cost, which will undervalue a firm if this amount is below the current market price. Adding to the MVA model is the M/B ratio, which is calculated as the firm's market value, divided by capital employed. The drawbacks of the M/B are similar to those of the MVA. Investors use the cost of capital to measure a firm's return compared to its HPR. CAPM, from finance theory, is used to estimate the cost of equity (k_{equity}), where:

$$k_{equity} = \text{risk-free rate} + \text{firm beta (return on market portfolio)}$$

Share return is usually sufficient if the HPR is greater than (k_{equity}). This model considers a firm's risk when estimating an appropriate market return. Beta measures the firm's systematic risk as a function of total market risk. Unfortunately, beta can be difficult to measure and it may not be available for all firms such as unlisted firms.

Investors must make several assumptions when employing absolute valuation models to measure the intrinsic value (V_0). For instance, in order to discount expected future cash flows, such as dividends (D_t), the investor must calculate the required rate of return (r) and a growth rate for dividends for a period of time (t). This type of model is appropriate for firms that pay dividends. The basic formula derived from Williams (1938) can be expressed as:

$$V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t}$$

However there are some problems with the DDM and its variations such as the Gordon growth model, namely, dividends are often difficult to forecast because they are declared at the discretion of the firm's board of directors (Stowe, et al., 2002, p. 138). It is also difficult to estimate growth rates and the duration that growth will persist (Stowe, et al., 2002, p. 144). This can be problematic since estimated firm value is very sensitive to small changes in growth rates that can lead to significant errors.

When firms do not pay dividends then investors can use cash flow or free cash flow to calculate a share's value. In order to calculate free cash flow to the firm (FCFF) the investor needs to estimate the earnings before interest and taxes (EBIT) to the firm prior to debt payments but after reinvestment needs (Damodaran, 2001, p. 751). FCFF can be calculated as follows:

FCFF = EBIT (1-tax rate)(1- Reinvestment Rate)

Free cash flow is the cash flow available to the firm after all operating expenses has been paid and operating investments have been made (Stowe, et al., 2002, p. 115). One reason why investors may prefer cash flow is because it is less easily manipulated than earnings. An advantage of using cash flow is that it signals when the firm has liquidity problems much sooner than the earnings figure and therefore is a more sensitive measure of liquidity.

When a firm does not pay dividends and expected free cash flows are negative or unpredictable then selecting the residual income model (RIM), which uses book value per share plus the present value of expected future residual earnings, is most appropriate (Stowe, et al., 2002, pp. 46-47). RIM uses readily available financial information. However, the problem with the RIM data is that it can be distorted more easily than cash flow and therefore may require the investors to make more adjustments. Asset-based valuation uses the firm's assets minus liabilities to measure firm value. This is most appropriate for firms with assets recorded at market value rather than at historical cost. However, this approach suffers similar problems as the MVA model. The absolute valuation models listed in Table 2.3 are defined in Figure 2.22.

discounted cash flow model	• Views the intrinsic value of an asset as the present value of the asset's expected future cash flows.
dividend discount model	• Present value model views the intrinsic value of the stock's expected future dividends.
free cash flow to equity model	• Views a stock's intrinsic value as present value of expected future free cash flows to equity.
residual income model	• Views intrinsic value of stock as the sum of book value per share plus the present value of the stock's expected future residual income per share.
asset-based valuation	• Approach to valuing firms based on the value of the assets the firm controls.

Figure 2.22: Definitions of absolute valuation models
Source: Adapted from (Stowe, et al., 2002, pp. 309-313).

Relative valuation models encompass both market-based and accounting-based sources of information to identify mispricing in equity securities. Mixed models or price multiples are ratios that commonly use the current market price of a share as the numerator and an accounting amount for the denominator. The P/E multiple is a very efficient indicator as it combines current market price as determined by the supply and demand forces in the stock exchange with a profit figure from the balance sheet. While the P/E multiple is extremely simple to calculate, has fewer assumptions, and is widely published in daily newspapers, it has several pitfalls. The earnings figure is based on accounting conventions that can be manipulated and are more sensitive to the business cycle. Thus, P/Es are subject to the Molodovsky effect that is the "observation that P/Es tend to be high on depressed EPS (earnings-per-share) at the bottom of a business cycle, and tend to be low on unusually high EPS at the top of a business cycle" (Stowe, et al., 2002, p. 312). Furthermore, the P/E is not an appropriate valuation model for firms with negative earnings because it lacks sensible economic interpretation; instead, it is more appropriate for growth firms and firms with positive earnings. Figure 2.23 defines the relative valuation models from Table 2.3.

P/E multiple (current)	• stock's current market price divided by the most recent 4 quarters of EPS
P/B ratio	• stock's current market price divided by the book value per share
P/Sales	• current price per share divided by annual net sates per share
P/CF (current)	• stock's current market price divided by the sum of the most recent 4 quarters cash flow per share
dividend yield	• current market price divided by most recent quarterly per-share dividend multiplied by four
technical analysis	• investment decision based on observing the trend over time in prices, fundamental variables, and volume of trade in stocks

Figure 2.23: Definitions of relative valuation models
Source: Adapted from (Stowe, et al., 2002, pp. 309-313)

There is increased use of alternative price multiples that are less volatile, such as the P/B ratio, price-to-sales ratio (P/sales) and price-to-cash flow ratio (P/CF). Use of the P/B ratio is most appropriate when earnings are negative as book value per share is usually positive. P/B ratio is also more stable than the P/E multiple and is appropriate for valuing firms from the banking and insurance industries (Stowe, et al., 2002, pp. 207-208). If firms use different financial reporting standards, this would make comparability between firms more difficult. The P/CF ratio allows for easier comparisons between firms from different countries but if cash flow is negative, then this ratio may not be appropriate. The P/sales ratio is a positive amount, the sales figure in the income statement, which is more stable than earnings and subject to less manipulation than earnings or book value (Stowe, et al., 2002, p. 216). Unfortunately, sales do not always reflect firm profitability as do net earnings and cash.

Dividend yield is another measure that is widely used by investors who own dividend-paying shares. However, divided yield is only one component of a share's total return; it tends to lag behind earnings; and it is "sticky" or remains constant because of the negative consequences of a price drop when dividends are cut (Damodaran, 2001, pp. 660-663).

2.6   SUMMARY

Chapter 2 has presented the underlying finance theory and empirical research that is relevant to this study. Strong financial systems are important because they are essential for supporting economic growth. "Financial system problems can reduce the effectiveness of monetary policy, create large fiscal costs related to rescuing troubled financial institutions, trigger capital flight, and deepen economic recessions" (IMF, 2005).

Although the existence of market anomalies remains a main challenge to the EMH, market efficiency, per se, is not assumed for this research. At present, the trend in research is to integrate 'techniques of fundamental analysis in model development and research design' (CFA Institute, 2007a, p. 13).

This study is a new contribution in accounting and finance research for the case of Jordan because it investigates the residual earnings model to examine the decision-usefulness of accounting information for equity investors of the ASE. In more developed capital markets these are common and useful indicators to investors as inputs into their equity decision-making process; however, to what extent does this hold true for emerging capital markets and in particular for the ASE. Understanding whether financial information provides decision-useful information is the first step in improving accounting measurement and valuation procedures.

Chapter 3 EMPIRICAL LITERATURE REVIEW

The development of finance theory and portfolio management during the last century to date has facilitated the performance of a vast body of empirical research in the areas of accounting. One of the major developments is the introduction of a methodology to test or examine the decision-usefulness or the information content of financial information to equity investors. What follows is a review of the literature of the major research in the areas of decision-usefulness of financial information in developed and emerging markets.

Mandatory disclosure of reported financial statements are an important source of information with significant economic implications for investors, creditors, firms and other users. The usefulness of financial information for investor decision-making process has been the focus of many researchers since the 1960s. Some academic researchers found that accounting numbers had information content (Ball & Brown, 1968; Beaver, 1968). Prominent researchers have employed different ways to assess the association between accounting information and security market values.

While empiricists from more developed markets have conducted the vast majority of studies; however, more recently there has been an upsurge in emerging market research that originates from local emerging market researchers. The drive to earn abnormal returns and diversify systematic risk has stimulated interest in emerging capital market investment that has grown significantly over the last two decades. The IFC estimates that emerging market equity funds have been reporting record inflows and the market capitalization of emerging market countries has more than doubled over the past decade, growing from less than $2 trillion in 1995 to almost $5 trillion in 2005 (IFC, 2007).Goldman Sachs "sees the value of the globe's emerging stock markets rising fivefold to $80,000bn from $14,000bn (constant US dollars) today, taking the emerging market share of global equity markets from 31 per cent to 55 per cent" (Wagstyl, 2010) which represents half of the entire global market. Figure 3.1 shows the projected market capitalisation for emerging markets compared to developed markets.

Figure 3.1: Estimated global market capitalisation distribution

The aim of chapter 3 is to discuss the prior literature on the decision-usefulness of financial information, market-based studies and studies on the ASE and Jordan's financial reporting practices. The chapter is organized into six sections. Section 3.1 presents the Conceptual Framework that defines the objectives and function of financial statements and their importance to investors and other users of financial statements. Section 3.2 discusses the empirical research on the decision-usefulness of accounting information for mature and emerging markets. Section 3.3 examines studies employing market-based ratios, specifically the P/E and P/B ratios. Section 3.4 discusses studies that specifically use the ASE as the basis for investigation. It also presents the studies that discuss the financial accounting regulatory environment in Jordan. Section 3.5 links the prior literature with that of this study. Section 3.6 summarises the chapter. Figure 3.2 shows the structure of chapter 3.

Chapter 3:

Empirical Literature Review

↓

3.1 Conceptual Framework for financial reporting

↓

3.2   Studies on usefulness of accounting information

↓

3.3   Studies on residual earnings and book value valuation model

↓

3.4 Accounting-based studies

↓

3.5   Studies on the ASE

↓

3.6   Link to thesis

↳ 3.7   Summary
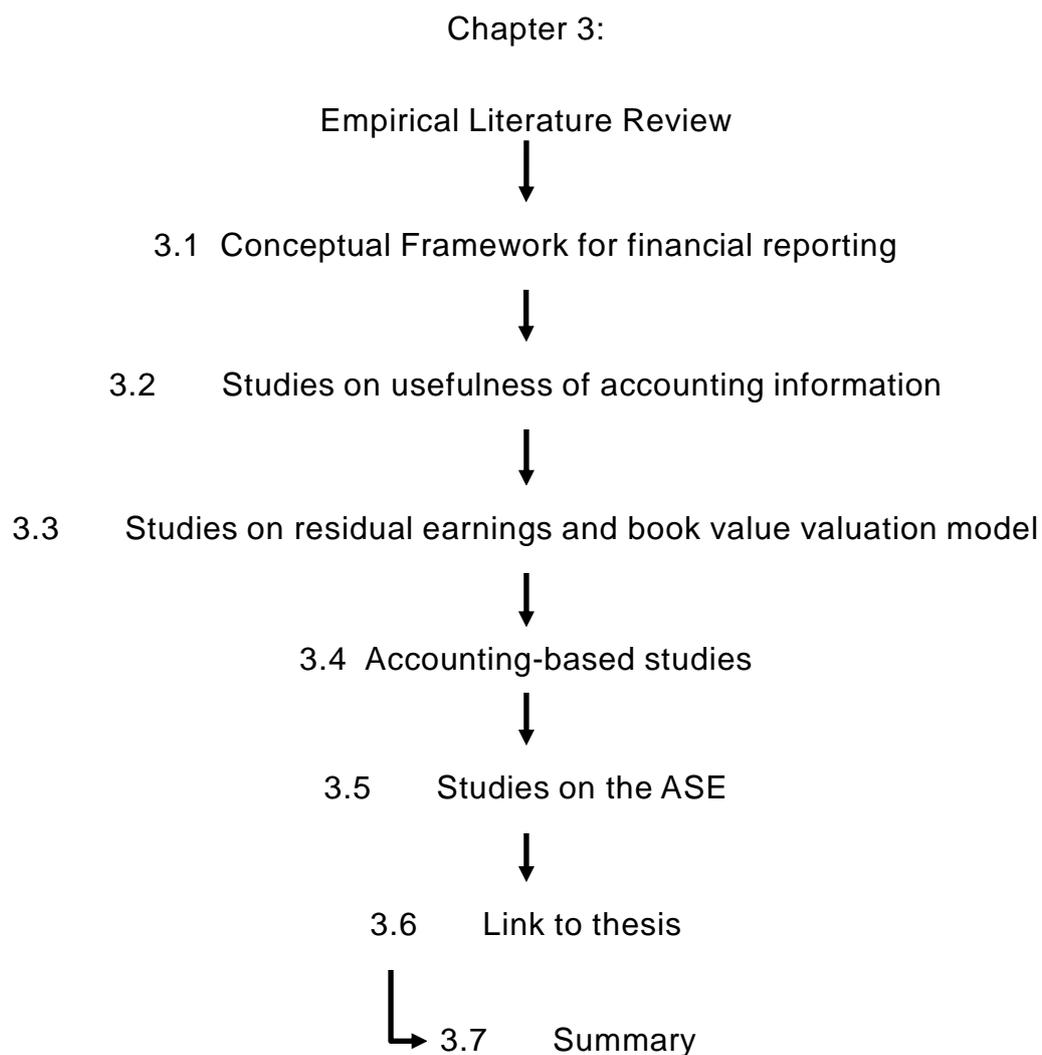
Figure 3.2: Structure of chapter 3

3.1   CONCEPTUAL FRAMEWORK FOR FINANCIAL REPORTING

One of the primary sources of information for investors is the mandatory disclosure of external financial reporting information produced by business firms. The joint FASB-IASB Conceptual Framework states that the objective of external financial reporting "is to provide information about the financial position, performance and changes in financial position of an entity that is useful to a wide range of users in making economic decisions (FASB, 2010, p. 1). The primary users of financial information are the existing and potential investors, lenders and other creditors. Figure 3.3 illustrates the need for financial accounting and the major users of financial information.
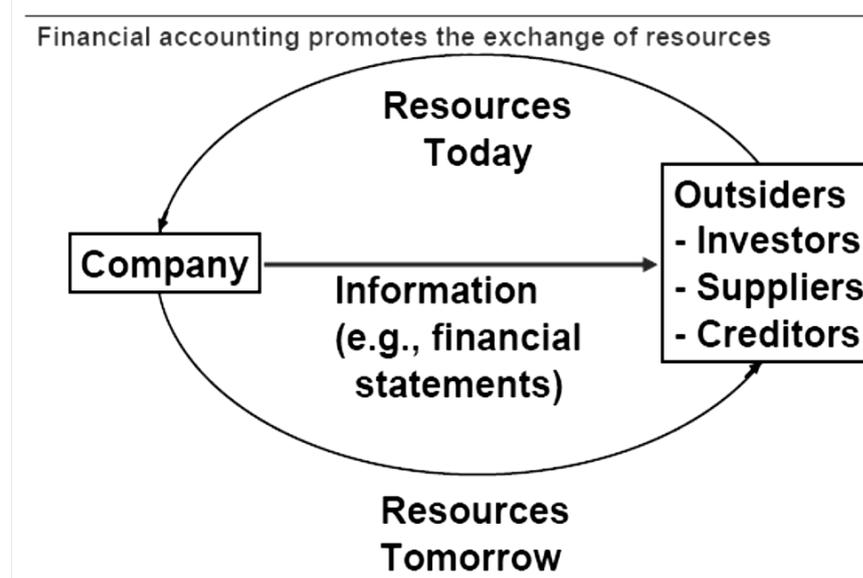
Figure 3.3: Need for financial accounting
Source: (Roychowdhury, 2004).

Although not legally binding on any country, IAS 8 clearly states that accounting information from financial statements be 'relevant to the economic decision-making needs of users' and be reliable with respect to faithful representation of financial position, neutrality, prudence and materiality (Alfredson, et al., 2007, p. 64). However, it is binding on countries that adopt the IFRS and require their domestic public shareholding firms to adhere to IFRS such as the case in Jordan. More and more countries are using IFRS as their principle standards. To date more than 100 countries have mandatory disclosure requirements for all domestic listed companies (Deloitte Global Services, 2012). "Mandatory disclosure is information revealed in the fulfilment of disclosure requirements of statute in the form of laws, professional regulations in the form of standards and the listing rules of stock exchanges" (Hassan & Marston, 2010, p. 7). Figure 3.4 shows the number of domestic listed companies that have required or permitted the IFRS out of 174 jurisdictions.
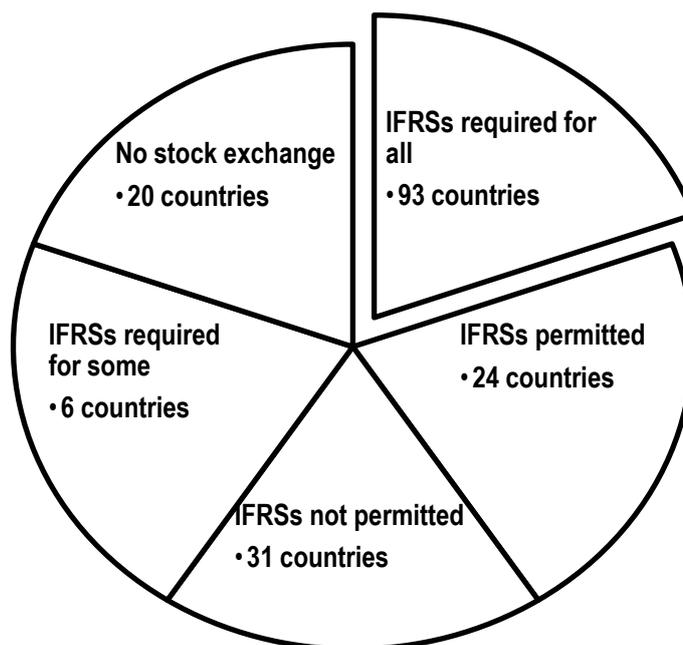
Figure 3.4: Use of IFRS by jurisdiction
Source: Adapted from (Deloitte Global Services, 2012).

The IASB and the US-based FASB have developed a common conceptual framework that is both complete and internally consistent and otherwise improves upon the existing frameworks of both boards. Chapter 1 discussed the qualitative characteristics that make financial information decision-useful to consumers of external financial reporting. Fundamental qualitative characteristics are relevance and faithful representation that is complete information, neutral or without bias, and free from error or omissions (FASB, 2010). Relevant financial information is capable of making a difference in the decisions made by users. Faithful representation must faithfully represent the phenomena that it purports to represent (FASB, 2010). Having enhancing qualitative characteristics can improve the decision-usefulness of financial information. Enhancing qualitative characteristics include comparability, verifiability, timeliness and understandability. Comparable financial information 'enables users to identify and understand similarities in, and differences among, items' (FASB, 2010). Consistency uses the 'same methods for the same items, either from period to period within a reporting entity or in a single period across entities' (FASB, 2010). Verifiable financial

information means that 'different knowledgeable and independent observers could reach consensus, although not necessarily complete agreement, that a particular depiction is a faithful representation' (FASB, 2010). Timely financial information means having information 'available to decision makers in time to be capable of influencing their decisions' (FASB, 2010). Understandable means 'classifying, characterizing, and presenting information clearly and concisely makes it understandable' (FASB, 2010). Producing information that has all the qualitative characteristics is very costly and therefore the conceptual framework identifies two constraints that limit the usefulness of financial information; these are materiality and cost-benefit constraints. Materiality means that 'information is material if omitting it or misstating it could influence decisions that users make on the basis of financial information of a specific reporting entity' (FASB, 2010). Cost-benefit constraint means that the costs of reporting financial information should be justified by the benefits of reporting that information (FASB, 2010). Figure 3.5 illustrates all the essential qualities that make financial information useful as defined by the FASB and IASB.

There are many users of accounting information produced from financial statements, such as present and potential investors, creditors, customers, suppliers, governments, regulatory bodies and the public. Due to their importance in providing capital investment to reporting entities, the FASB-IASB regards existing & potential investors, lenders & other creditors as the primary users of financial reporting information. Although investor decisions are forward looking, they use the historical past performance of companies to help them make forecasts about a particular company's financial position and future performance. Information about a company's performance is primarily provided in the income statement while its financial position is provided in the balance sheet and different statements of changes in financial position (IASC, 2003, p. 23). The IASB states that information about the economic resources controlled by the enterprise and its capacity in the past to modify these resources is useful in predicting the ability of the enterprise to generate cash and cash equivalents in the future (IASC, 2003, p. 22).

Conceptual Framework

The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity.

The degree to which that financial information is useful will depend on its qualitative characteristics.

Two fundamental qualitative characteristics of decision-useful financial information

'Enhancing qualitative characteristics' help to distinguish more useful information from less useful information

FAITHFUL REPRESENTATION

Financial reports represent economic phenomena in words and numbers.

To be useful, financial information also must faithfully represent the phenomena that it purports to represent.

It should have:
1) complete information
2) neutral or without bias
3) free from error or omissions

RELEVANCE

Relevant financial information is capable of making a difference in the decisions made by users.

Financial information is capable of making a difference in decisions if it has predictive value, confirmatory value, or both.

Users do not need to use such information, merely have access to it.

1) COMPARABILITY
(including consistency)

2) VERIFIABILITY

3) TIMELINESS

4) UNDERSTANDABILITY

Pervasive constraint
limit the information provided in useful financial reports
1) MATERIALITY   2) COST

Figure 3.5: Conceptual framework for external financial reporting
Source: Adapted from (FASB, 2010).

Many investors are fixated with the bottom line of financial statements; that is, with earnings, stockholders' equity, and free cash flow. These are reflected in the main financial statements that include the balance sheet, the income statement or the statement of earnings, statement of stockholders' equity, and the statement of cash flows. The investment decision-making process requires disclosure of financial information to allow investors and others to calculate the risks and expected returns of an investment choice (Deloitte Global Services, 2012). Financial statements provide investors with the required financial figures to make informed decisions within their investment environment that may differ between capital markets in terms of structure, efficiency, liquidity and other characteristics. Investors usually prefer to participate in an environment that enables them to make quick, fair and orderly transactions.

The FASB and the IASB have not defined how much relevance or faithful representation is needed in order for financial information to be useful to decision makers. Therefore, measuring the quantity of relevance and faithful representation that is sufficient to comply with the IASB's IFRS criteria is not straightforward because the IASB do not state "how much" is sufficient (Barth, et al., 2000). Nevertheless, there are several approaches that are commonly employed by researchers to examine qualitative characteristics that indicate if financial information is useful to investors or not.

There are several methods to assess the relevance of financial information and thereby interpret its degree of usefulness. A qualitative approach can be used to gain further insight into the usefulness of financial information. This is commonly performed through descriptive analysis of survey data, interviews or questionnaires. This research will employ a mixed research method that includes qualitative research. In quantitative research, Barth, Beaver and Landsman (2000a) identify four approaches that are used in the literature to test for relevance and reliability of financial information and rank each by different degrees of restrictive assumptions imposed by the researcher. However, the accounting information that is selected assumes relevance for all of the approaches that are described in Figure 3.6 (Barth, et al., 2000).

Most restrictive approach	Second most restrictive approach	Third most restrictive approach	Least restrictive approach
models relevance & reliability to make specific predictions on how reliability affects coefficient estimates	compares the estimated valuation coefficient on the accounting amount being studied with a theoretical benchmark coefficient	compares the estimated valuation coefficient on the accounting amount being studied to that on other amounts already recognized in financial statements	interprets a significant coefficient of the predicted sign on the accounting amount being studied
Barth 1991	Landsman 1986; Barth et al.1992	Barth et al. 1998; Aboody et al.1999	Barth 1994

Figure 3.6: Approaches to assessing usefulness of accounting information
Source: Adapted from (Barth, et al., 2000).

The most restrictive approach uses predictions of accounting amounts in future periods to determine relevance. The second most restrictive approach estimates the value of accounting numbers and then compares it with a theoretical benchmark outcome. The third approach compares an accounting amount to recognized numbers in financial statements. The least restrictive approach interprets the relationship between accounting numbers and return distributions (Barth, et al., 2000).

This study employs the fourth and least restrictive approach that has the fewest assumptions. In particular, this study empirically examines financial information and their association to equity share prices of the ASE. Extensive empirical decision-usefulness of financial information research has been tested in several developed countries (Ball & Brown, 1968; Beaver, 1968; Ou & Penman, 1989; Feltham & Ohlson, 1995; Block, 1995; Penman, 1996).

The P/E, P/B and residual earning models (REM) represent a tool for equity valuation that simultaneously relates a share's price or market value with key accounting amounts such as earnings and book value of equity. The two most important financial statements that users analyse are the balance sheet and the income statement. The REM associates the share price to the earnings per share

and the book value per share figures. The denominator for the P/E multiple, the earnings figure, comes from the income statement, while the denominator for the P/B ratio, book value of equity, comes from the balance sheet. "Earnings power is a chief driver of investment value, and earnings per share, is perhaps the chief focus of security analysts' attention" (Stowe, et al., 2002, p. 183). Block (1999) conducted a survey to members of the Association of Investment Management Research and found that earnings ranked first among four variables – earnings, cash flow, book value, and dividends – as an input in valuation (Stowe, et al., 2002, p. 183).

Major limitations of the P/E model include situations where companies have negative earnings or even unstable and transient components to earnings. These are discussed in section 3.3. Moreover, if management exercises its discretion within allowable accounting practices to distort EPS an accurate reflection of economic performance would be distorted (Stowe, et al., 2002, p. 184).

Unlike the P/E multiple, the denominator of the P/B ratio, book value of equity, is a cumulative balance sheet amount which is generally positive even when EPS is negative and therefore can be used in place of the P/E (Stowe, et al., 2002, p. 207). The book value of equity is also more stable than EPS. "As a measure of net asset value per share, book value per share has been viewed as appropriate for valuing companies composed mainly of liquid assets, such as finance, investment, insurance and banking institutions" (Wild, et al., 2001, p. 233). Inflation, advances in technology, and accounting effects on book value, may compromise book value as a measure of shareholders' investment in the company (Stowe, et al., 2002, p. 208).

Williams (1938) developed the theoretical background for the P/E model based on the dividend capitalization model. The theoretical justification for the second model, the P/B, is taken from the early works of Preinreich (1938) and Edwards and Bell (1961). Theoretically, the models were developed as a method of comparing relative valuation among assets or groups of assets. The 'method of comparables' is based on the economic principle that similar assets should sell at similar prices (Stowe, et al., 2002, p. 20). In theory, the simplicity of the models should allow for application to equity capital markets regardless of geographical location. Another advantage of the use of relative valuation models is that, in

general, investors can easily recognize, understand and interpret price multiples (Stowe, et al., 2002, p. 21). Indeed, the P/E ratio is commonly published in newspapers such as the Wall Street Journal, as well as most financial sections of major international newspapers.

3.2   STUDIES ON USEFULNESS OF ACCOUNTING INFORMATION

Decision-usefulness of accounting information or information content studies are based on the technical concept of market efficiency which postulates that share prices adjust to information and therefore reflect all relevant past and current information (Fama, 1970). There is ample empirical evidence in the finance and accounting literature indicating that market-based ratios such as the P/E and the P/B, among others, contain significant information value content as well as explanatory power for expected returns. Numerous research papers that analyse the usefulness or the information content of accounting information appear in various professional research journals since 1968. Researchers derived the methodologies and test procedures employed in these papers from the development of investment models in the finance theory. Table 3.1 presents the major empirical research for the usefulness of accounting information.

Table 3.1: Studies on the usefulness of accounting information

YEAR	AUTHORS	RESEARCH OBJECTIVE	SAMPLE DESCRIPTION	METHODOLOGY
1968	Ball & Brown	Usefulness of accounting earnings	261 firms from S&P's Compustat tapes 1946-66	OLS procedures and CAR
1968	Beaver	Value of earnings information to equity investors	143 US firms earnings announcements from 1961-65	OLS procedures
1972	Kaplan & Roll	Effect of accounting changes on prices	332 US firms in 1964 & 1962-1968	OLS and CAR
1976	Patel	Effects of management earnings forecasts on share prices	336 earnings forecasts by 258 US firms from 1963-1968	Market model to estimate abnormal returns
1989	Lev	Usefulness of earnings to equity investors	Period from 1980-1988	Descriptive analysis
1990	Bernard & Thomas	Share prices reflect naïve expectations	Quarterly earnings for 2626 firms from 1974-86	OLS procedures
1996	Beaver, McAnally & Stinson	Joint determination of cross-sectional price & earnings changes	176 US bank holding firms from 1973-1991	Simultaneous equations &OLS procedures
1999	Francis & Schipper	Relevance of financial statements to investors	All firms on CRSP & Compustat from 1952-94	OLS & rank regressions

Empirical studies which investigated the content of accounting information in terms of its impact on share price changes originated with two seminal research papers: the first by Ball and Brown (1968) and the second by Beaver (1968). Both studies were instrumental in stimulating researchers to follow with extensive empirical information content studies. Ball and Brown (1968) examined the information content of the accounting earnings numbers and utilized the new capital market theories, most notably Fama's (1965, 1970) market efficiency that had just been developed at that time and which provided the theoretical justification for the use of share market prices as an operational test for the usefulness of accounting information. The authors used the abnormal performance index (API) or cumulative abnormal return (CAR), which is the difference between expected & actual return numbers, expressed as:

$$\text{abnormal return} = AR_{it} = R_{it} - E(R_{it})$$

$$\text{cumulative abnormal return} = CAR_i = \sum AR_{it}$$

OLS procedures were used to test the difference from zero for the API for a sample of 261 companies during the period 1946-1966 and a test period of 1957-1965 using S&Ps compustat database. They concluded that accounting numbers, mainly the EPS have considerable information content. However, the study examined only the sign of earnings forecasts errors while ignoring the magnitude of the errors.

The second pioneering study by Beaver (1968) investigated the information content of annual earnings announcements for a sample of 143 firms during the period 1961 through 1965. Beaver examined the price and trading volume movements of the sample's shares around the earnings announcement dates. Using OLS procedures, Beaver concludes that there is a significant price and volume reaction around the earning announcements days, which indicate that investors do take into account the reported earnings as a variable in their investment decision-making process. The development of the capital market theories and the aforementioned

two empirical investigations paved the way for new branches of empirical research for accounting and finance researchers from all corners of the globe.

Kaplan and Roll (1972) documented the existence of accounting information content by examining the effect of two major accounting changes on the share prices; these changes were the switch flow-through method in reporting investment credit and the switch from accelerated depreciation method to straight-line method. Using the API methodology, the authors sampled 332 US firms that switched to flow-through method in 1964 and 71 firms that switched to straight-line depreciation during the period 1962-1968. The methodology was based on the abnormal return derived from the market model. The cumulative abnormal return was examined to test if it is statistically different from zero. The authors documented an increase in average share prices around the switch dates but could not find any statistical significance for their results. Manipulation of earnings by switching to different accounting methods does not have a favourable impact on security prices because investors look at the true economic position of firm. Patel (1976) examined the impact of forecasted earnings on equity valuation using different methodologies. He used the abnormal return from the market model that is derived from CAPM to examine the effect on share prices of management's earnings forecasts. For a sample of 336 earnings forecasts released by 258 US companies, Patel found significant stock market response to management earnings forecasts around the dates of the forecasts release. The main criticism of Patel's work is the fact that he ignored the impact of the forecasts accuracy.

Bernard and Thomas (1990) investigated the possibility that share prices reflect naïve expectations for a sample that includes the quarterly earnings for 2626 firms during the period 1974-1986. The authors concluded that share prices do not fully reflect naïve earnings expectation models that predict that future quarterly earnings will equal the earnings of a comparable quarter of the last period.

Beaver, McAnally, and Stinson (1996) examined a model that assumes a joint determination of cross-sectional price changes and earnings changes. Their

sample included 176 bank-holding firms with an average number of observations of 72 to 140 each year for the period 1973-1991. They concluded that the OLS coefficients of earnings and returns are larger and less biased than those obtained from a single equation.

Francis and Schipper (1999) investigated and evaluated the claim that financial statements have lost their relevance to investors. The sample consisted of all firms listed on the Center for Research in Security Prices (CRSP) and compustat databases during the period 1952-1994. The CRSP database contains daily and monthly price, volume, and return data for NYSE, ASE, and the National Association of Securities Dealers Automated Quotation system shares. The methodology employed OLS and rank regressions to test two measures of relevance: the portfolio measure, which considers market adjusted return as a dependent variable, and an earnings and cash flow measure as the independent variables. Relevance was also measured using regressions to examine the relationships between market value measures and financial information. Their results showed that tests for the ability of earnings to explain changes for returns have decreased over time while tests for the ability of book value of assets and liabilities to explain changes in market values of equity did not show evidence of a decline in the explanatory power.

There is major criticism facing most of the information content studies. For example, Lev (1989) evaluated the usefulness of earnings to equity investors and accounting research in general during the period 1980-1988. Lev provided a thorough examination of previous research to improve and stimulate further research in the area of the usefulness of financial information with regard to earnings. He concluded that earnings and returns have a weak correlation and that there is a deficiency in the development of theoretical and methodological refinements in answering the question of how and to what extent earnings are used by investors. The possibility that low quality of information exists would require a change in the direction of research in which he proposed for two areas. Firstly, there is a basic need to understand the actual use of reported data by investors and secondly, to improve financial accounting measurement and valuation procedures.

3.3 STUDIES ON RESIDUAL EARNINGS & BOOK VALUE VALUATION MODEL

Residual earnings valuation can be traced to the works of Preinreirch (1938), Edwards & Bell (1961), (1995), Feltham & Ohlson (1995) and Bernard (1994). The residual earnings or income model states that the share market value of a firm is the book value per share (BVPS) plus the residual earnings per share (REPS). Studies for book value and the residual earning model are presented in Table 3.2.

Table 3.2: Studies on residual earnings and book value valuation model

YEAR	AUTHORS	RESEARCH OBJECTIVE	GENERAL RESULTS
1961	Edwards & Bell	Examine the B/M ratio	B/M value ratios have a critical role as a predictor of abnormal earnings
1994	Bernard	Examines B/M ratios for 10 portfolios based on ROE	P/B ratios increase monotonically across all portfolios except for the first ROE deciles. B/M ratios reflect differences in expected returns & mispricing by the market & have significance in predicting abnormal earnings
1997	Collins, Maydew & Weiss	Examines the value relevance of earnings and book values	The value relevance of earnings & book values has increased over 40 years.
1995	Ohlson	Analyses firm market value and earnings, book values and dividends	Developed the clean surplus assumption whereby book values should equal earnings minus dividends.
1995	Feltham & Ohlson	Theoretical relationships between operating & financial activities & firm's market value	The existence or non-existence of growth in operating earnings is relevant only if accounting is conservative
2000	Graham & King	Relationship between stock prices and earnings & book values	There are differences across 6 Asian countries from 1991-1995 in the explanatory power of the book value per share and the residual earnings
2001	Gornik-Tomaszewski & Jermankowicz	Examine relationship between current earnings and lagged book values and share market prices	Current earnings and lagged book values are positively and significantly related to prices for Polish listed companies.

Edwards and Bell (1961) recognized the critical role of B/M ratios as a predictor of abnormal earnings when using earnings-based valuation models. Bernard (1994) examined the significance of book-to-market ratios (B/M) for 10 portfolios based on ROE. The conclusions indicated that P/B ratios increase monotonically across all portfolios except for the first ROE deciles and the B/M ratios reflect differences

in expected returns and mispricing by the market. It also has significance in predicting abnormal earnings.

Ohlson (1995) developed a model that relates the market value of the firm with book value, future earnings and dividends. The clean surplus assumption applies whereby book values should equal earnings minus dividends. Expected abnormal earnings are not dependent on current dividends nor on future dividend policy. Furthermore the model describes how dividends reduce future earnings by reducing the market value of current book value.

Feltham and Ohlson (1995) investigated and explained the theoretical relationships between firm's market value and the financial information relating to its operating and financial decisions. The authors developed a linear model which determines the dynamics of the relationship between firm's value and expected outcome of accounting data; to what extent firm's value depends on contemporaneous realization of accounting data; and asymptomatic relation comparing market value to earnings and book value and the relationship between earnings and the book value at the beginning of the accounting period. The authors also stated the role of B/M ratios as a means of predicting abnormal return. However, conclusions for the three types of data depend on the extent to which the accounting is conservative as compared to unbiased. The existence or non-existence of growth in operating earnings is relevant only if accounting is conservative.

Collins, Maydew and Weiss (1997) find that the combined value-relevance of earnings and book values has increased, however, book values have greater significance than earnings during the previous forty years. Graham and King (2000) employ Ohlson (1995) to examine the relation between share market prices and accounting numbers, earnings and book values, for six Asian countries. Their results indicate that there are differences across the countries in the explanatory power of the book value per share and the residual earnings. They also find that comparing prices at year-end provides the highest correlation between market and book values and earnings. Gornik-Tomaszewski and Jermankowicz (2001) examine accounting-based valuation of Polish listed

companies using the Edwards-Bell (1961) and Ohlson (1995) models. Results show that current earnings and lagged book values are positively and significantly related to prices. The incremental information content of lagged book value is greater than that of current earnings.

3.4   ACCOUNTING-BASED STUDIES

The discussion continues with a review of the empirical research employing models using earnings and book value of equity. In general, these studies indicate the relevance of models such as the P/E and P/B ratios that use accounting BVPS and EPS as a method of comparables in equity valuation.

The significance of accounting and market-based ratios became known with the works of several well-known and prominent researchers. Graham, Dodd and Cottle (1962) concluded empirically that the P/E ratio is an earnings capitalization rate. Gordon (1962) established that the P/E is determined by the return-on-equity (ROE). He found the existence of a positive relationship with predicted earnings growth and a negative relation with expected rates of return, which implies a negative relationship with risk and interest rates.

Many empiricists found the P/E ratio to be an indicator of growth (Litzenberger & Rao, 1971; Cragg & Malkiel, 1982) or a measure of risk (Ball, 1978) because the E/P ratio is higher for shares with a higher risk and a higher expected return. Subsequent researchers added a link with risk. Beaver and Morse (1978) examined determinants of the P/E ratios and considered the behaviour of portfolios formed based on E/P, the inverse of the P/E ratio. The study uses market beta as a measure of risk and the analysts' forecasts of future growth as a measure of growth. Based on a sample of firms during the period 1956-1974 the authors concluded that between 50-70% of the variability in the P/E ratio is determined by the risk & earnings growth of the firm and that the relationship is linear but a weak one between the P/E and risk and earnings growth. Finally, the results show that the P/E ratio indicates transitory earnings. Table 3.3 summarises the major research associating earnings and/or the P/E and E/P ratios with expected share market prices.

Table 3.3: Summary of empirical literature for the earnings and the P/E ratio

Year	Authors	Research objective	General results
1962	Graham, Dodd, & Cottle	Empirical analysis of P/E	P/E ratio is an earnings capitalization rate.
1962	Gordon	Examined the P/E ratio relationship with ROE	Positive relation with predicted earnings growth and a negative relation with expected rates of return.
1971	Litzenberger & Rao	Examined P/E as a growth indicator	P/E ratio is a growth indicator.
1978	Beaver & Morse	Considered behaviour of portfolios formed based on inverse P/E, E/P ratio	Between 50-70 % of the variability in the P/E is determined by the risk & growth of the firm. P/E indicates transitory earnings.
1979	Modigliani& Cohn	Relationship between E/P & inflation	Positive relationship between inflation & E/P.
1980	Black	Examined the P/E ratio	All P/E ratios are normal & equal p (p-1).
1981	Boastman & Baskin	Accuracy of the P/E ratio	Smaller prediction errors observed if firms were selected based on similar historical earnings & growth rather than randomly.
1982	Cragg & Malkiel	P/E ratio relationship with earnings	P/E ratios are positively related to forecasted future earnings by analysts relative to current earnings
1983	Reilly, Griggs & Wong	P/E ratio and inflation	Positive relationship between E/P and inflation
1989	Ou & Penman	Ability of P/E & accounting numbers to predict earnings & share returns	Financial statements contain information that is reflected in the P/E ratio. Also share prices predict or lead earnings.
1990	Leibowitz & Kogelman	Related P/E & future investment opportunities	Develops model for market P/E ratio and future investment opportunities.
1990	Zarowin	Empirical analysis of P/E ratio	Results indicate a positive relationship between P/E & analysts' forecasted future earnings relative to current earnings.
1992	Alford	P/E as a valuation tool for comparable firms based on industry, risk, & earnings growth	Industry type, risk & earnings growth are effective criteria for selecting comparable firms in improving the accuracy of the P/E valuation model.
1993 1995	Ou & Penman	Relationships between P/E & changes in EPS	Find that P/E ratios capture effects of transitory earnings components and the long-term shifts in permanent earnings
1995	Molodovsky	Related earnings power, current earnings & P/E ratio	Developed a theory of P/E ratios
1995	Block	P/E relationship with earnings	ROE is a direct influence on P/E ratio, a main reason of growth and consistently related to earnings stability & predictions.

Year	Authors	Research objective	General results
1996	Penman	Compared relationship between P/E & P/B with current & expected future ROE & role determining these ratios.	Concluded that current ROE is related to P/E but not P/B. P/E ratios are poor indicators of future growth, P/B ratios indicate the effect of future profitability so are good signals of earnings growth.
1996	Subramanyam	Earnings and P/E ratios	Statistical factors affect the association between smoother earnings and the P/E.
1996	Kane, Marcus & Noh	Relationship between P/E & market volatility, business cycle, real interest rate, dividend yield & inflation	Found a negative relation between P/E and inflation rate, volatility and industrial production. Positive relationship between P/E and the default premium.
1996	Shiller	Predictive power of P/E ratio	Equity returns can significantly predict future returns
1998	McGee & Stickney	Examines the mean reversion characteristics of P/E	P/E captures the long-term shifts in permanent earnings & effects of transitory earnings components
1998	Penman	Examines the P/E & P/B ratios	Finds that these weights differ between earnings & book value systematically over time.
1999	Kim & Ritter	Price setting of IPOs using multiples based on forecasted earnings, BV, earnings, CF & sales.	Results indicated that forward P/E based on predicted earnings for next year are more accurate in valuation than other multiples.
2000	White	Relationship between E/P and inflation, earnings, interest rates	Positive relation between inflation & E/P. Negative relation between E/P & earnings growth & dividend payout. Linear relation between E/P & interest rates.
2000	Liu, Nissim & Thomas	Evaluated accuracy of multiples to predict actual equity values	Multiples derived from forward-looking earnings are the most accurate since they reflect the least dispersion of pricing error.
2001	Jain & Rosett	Examined the impact of inflation on E/P	Positive relation between E/P & inflation, no significant relationship between P/E & spread
2002	Leibowitz	P/E ratio & leverage	Leverage moves P/E lower
2004	Penman & Jun Zhang	P/E ratio	Finds the persistence of earnings and the P/E ratio
2004	Dudney, Jirasakuldech & Zorn	Develops & tests a multifactor model of the changes in the E/P ratio	Taxes & investor's sentiments are important variables in determining E/P ratio. Dividend payout, short-term interest rates and growth are also significant.
2007	Thomas & Zhang	Links P/E ratio with earnings, growth, and cash flow	Forward P/E 's relationship with earnings growth, interest rate & risk is stronger when using future year forecasted earnings.

Leibowitz and Kogelman (1990) developed a single model which explains the relationship between the above the market P/E ratio and future investment opportunities. The authors decomposed the P/E ratio into two parts; the

franchised factor that measures the P/E impact of a new investment given a specific return and a growth factor that measures the magnitude of these investment opportunities. The decomposition approach provided a better, clearer understanding of the real components which leads to an increase in the value of equity and better performance of P/E multiples.

Molodovsky (1995) provided a theoretical explanation for the significance of the capitalized earnings power as an operational guidance in forecasting share market values using the relationship among the earnings power, current earnings and the P/E ratios. Business cycles affect the P/E multiple. The observation that P/Es tend to be high on depressed EPS at the bottom of a business cycle, and tend to be low on unusually high EPS at the top of a business cycle is known as the Molodovsky effect (Stowe, et al., 2002).

Block (1995) examines different relationships among profitability ratios such as earnings to book value (E/B), P/E, etc., to reach conclusions about the price paid for book value. For a sample of the 30 Dow Jones Industrials during the period 1949-1962, they examine two basic characteristics of the P/E ratio; the first is the tendency of the P/E ratio to have the opposite relationship with earnings (the counter movement) and the second is the relationship of the P/E ratio to earning power (the "U" characteristic). The counter movement and U characteristic explains why there is no linear relationship between P/E and E/B ratios. The results indicate that the ROE is a direct influence on the P/E ratio, is a main reason of growth and is consistently related to earnings stability and predictions. The implication is that analysts can use a unified system based on P/B ratios instead of using P/E to value some companies and equity assets to value others because the ROE expresses the basic earning power of the company.

Penman (1998) computed weights that combine the equity valuation produced by the application of P/E ratio and the equity valuation produced by applying the P/B ratio. Penman finds that these weights differ between earnings and book value systematically over time. That is, when earnings are large in relation to book value the weights are different from the case when earnings are small in relation to book value. The calculated weights also combine predictions of future earnings based on earnings and book value separately into one composite prediction.

Leibowitz (2002) examined the effect of a firm's leverage on the estimation of the share theoretical P/E ratio. A high degree of sensitivity of a firm's value to the leverage ratio can alter the theoretical P/E valuation. Leibowitz concluded that leverage always moves the P/E to a lower value than that from the standard formula. Improvement in the accuracy of the P/E multiples are shown by Boastman and Baskin (1981) who used two samples of comparable firms within the same industry and concluded smaller prediction errors observed if firms were selected based on similar historical earnings and growth rather than randomly. However, it is difficult to compare results across studies due to different methodologies and the limited sample of firms. Additionally, the authors only consider a subset of multiples. Cragg and Malkiel (1982) concluded that analysts positively relate P/E ratios to forecasted future earnings relative to current earnings. Zarowin (1990) replaced actual long term growth by forecasted long term growth that led to a significant link between E/P and long term growth in earnings which indicated a positive relationship between P/E ratios and analysts' forecasted future earnings relative to current earnings. Zarowin's sample included 175 firms with analysts' long-term forecasts of earnings during the period 1961-1969. Alford (1992) examined the accuracy of the P/E multiple as a valuation technique for a set of comparable firms based on industry, risk, and earnings growth. The sample contained firms listed on the NYSE, the American Stock Exchange (AMEX), and the over the counter markets for the years 1978, 1982 and 1986. There was difficulty in comparing results across studies due to different methodologies, limited sample of firms, only a subset of multiples was considered. Alford (1992) suggests that industry type and a combination of risk and earnings growth are effective criteria for selecting comparable firms in improving the accuracy of the P/E valuation model and furthermore that valuation accuracy increases with firm size (Alford, 1992, pp. 96-97). Thomas and Zhang (2007) examined the link between P/E ratios with reported earnings, earnings growth and cash flow when prior actual earnings are substituted with forecasted future earnings (forward P/E ratio). They employed a sample of 39,452 firms' quarter observations from 1992-2002 with an average number of observations per year that ranged from 247 to 1113. Again, results showed that the predicted relationship of the forward P/E with earnings growth, interest rate, and risk is stronger when substituting prior period's reported earnings with future year forecasted earnings.

The forward P/E has a negative relationship with volatility of cash earnings & accrual earnings while eliminating the noise that might be created by transitory components in reported earnings.

Some studies showed a positive relationship between the P/E ratio and inflation, while others showed the opposite relationship. Modigliani and Cohn (1979) and Reilly, Griggs and Wong (1983) and White (2000) concluded a positive relationship between inflation & E/P. White (2000) also found a negative relation between E/P and earnings growth and dividend payout and a linear relationship between E/P and interest rates & earnings growth. White used a sample of firms for the period from 1926-1997. Similarly, Jain and Rosett (2001) found a positive relation between E/P and inflation, but no significant relationship between P/E and spread or consumer sentiment. However, Kane, Marcus and Noh (1996) examined the relationship between P/E and market volatility, business cycle, dividend yield, real interest rate and inflation. Their findings showed a negative relation between P/E and inflation rate, volatility and industrial production and a positive relationship between P/E and the default premium.

Dudney, Jirasakuldech, and Zorn (2004) develop and test a model of the main factors which introduce changes in E/P ratio, taking into account taxes, investor's sentiment, and the long term relationship among nonstationary variables. Their sample includes the S&P index for the period 1953-2003. Results revealed that taxes and investor's sentiments are important variables in determining E/P ratio and that the dividend payout, short-term interest rates and growth were also significant. Lastly, the predicted E/P by the models was close to actual E/P.

Many researchers examined the P/E multiple as a predictor of equity returns. Ou and Penman (1989) examined the ability of the P/E ratio and accounting numbers to predict earnings and share returns. Sample includes 29,958 data observations during the period 1973-1983. The results indicated that financial statements contain information that is reflected in the P/E ratio. In addition, share prices predict or lead earnings. Their study provided financial statement analysis with enhanced valuation. Kim and Ritter (1999) investigated the price setting of initial public offerings using multiples based on forecasted earnings, book values, earnings, cash flow and sales. Results indicated that forward P/E multiples based

on predicted earnings are more accurate in valuation than other multiples. Forecasted earnings for next year dominate the forecast of EPS for the current year. Shiller (1996) documented that initial P/E ratios are able to explain 40% of the variance of future returns. He concluded that equity returns could be predictable to a significant extent. Liu, Nissim and Thomas (2000) evaluated the accuracy of a comprehensive list of multiples computed by different approaches to predict actual equity values. The sample includes 26,613 observations for the period 1989-1999. Results indicated that multiples derived from forward-looking earnings are the most accurate since they reflect the least dispersion of pricing error. With results consistent across all industries, the relative performance ranking is first, the forward earnings based on harmonic means within industry; secondly, the historical earnings multiples; thirdly, the cash flow of book value, and finally, sales.

Ou and Penman (1993) studied the relationships between the P/E ratios & changes in earnings per share for all firms listed on the Compustat database during the period 1968-1985. The authors found that P/E ratios, which are based on reported earnings, 'capture effects of transitory earnings components and the long-term shifts in permanent earnings'. Subramanyam (1996) documented statistical factors affect the association between smoother earnings and the P/E ratios. McGee and Stickney (1998) examined the mean reversion characteristics of P/E ratios for a sample of companies during the period 1976 to 1995. The authors indicated that, P/E captures the long-term shifts in permanent earnings & effects of transitory earnings components. Penman and Zhang (2004) provide a structured financial statement analysis that is informative as to the persistence of earnings and the P/E ratio. Their analysis guides investors to differentiate between shares with different risk and therefore different expected return or to shares where earnings are mispriced considering the information about their persistence.

The discussion continues with the relevant empirical research on studies examining the P/B ratio which are also numerous. Table 3.4 summarizes the empirical literature for the P/B. Several researchers found a positive relationship between the B/M ratio and the book value of equity.

Table 3.4: Summary of empirical literature for book value and the P/B ratio

YEAR	AUTHORS	RESEARCH OBJECTIVE	GENERAL RESULTS
1980	Stattman	Examine the B/M ratio	Positive relation between US share returns & the ratio of book value to MV
1984	Wilcox	Ability of the P/B ratio to predict ROE and compare the performance of the P/B with P/E ratio	Results indicate that the P/B–ROE model is superior to P/E & permits the estimation of investment horizon, shareholder return & market consensus expected ROE based on historical data.
1985	Rosenberg, Reid and Laustein	Examines relationship of asset returns and B/M values	Found a positive relationship between US shares average returns and the ratios of book-to-market values of equity.
1991	Chan & Chen	Examines the book value and market value of equity	Firms judged by the market to have poor prospects of earnings indicated by low share prices & high B/M ratios will have a higher expected return than firms with strong prospects.
1992	Fama & French	Roles of market beta, earnings & size to price, leverage & B/M equity in explaining the cross-section of average returns	Concluded that P/B ratios explain the averages of share returns and P/B ratio is a proxy of risk and mispriced shares.
1995	Ryan	Examines the determinants of B/M ratio by constructing a model for accrual based measurements of accounting	Market values have the highest variance & low predictability compared to book value movements. Estimated coefficients were significantly negative for the total sample & more negative for the sub-samples of firms with longer asset lives.
1997	Loughran	Firm size & B/M	Results indicate that size & B/M should play a limited role in equity investments decisions for the vast majority of portfolio managers.
1997	Knez & Ready	Examines the robustness of the size & B/M ratios analysed Fama and French (1992)	Found negative relation between size & average return due to a small number of extreme positive returns each month. Reducing observations by 1% led to a positive relationship. Also, a large portion of positive returns for small firms are concentrated in January
2001	Garza-Gomez	Association between risk & the market value of equity & the premium obtained by investment strategy based on BM/MV ratio	Weak relationship between risk and BM/MV, and high correlation between book value & risk
2001	Davis	Investigates claim that P/B is not useful in valuing shares compared w/other measures such as E/P, cash flow/price & sales/price.	Results indicate that ranking shares based on P/B ratios is a valid way to identify value shares. Spearman rank correlation coefficients test whether the B/M ratio has information content

For example, Stattman (1980) and Rosenberg, Reid and Laustein (1985) documented a positive relationship between average returns on US shares and the B/M ratio. Chan and Chen (1991) documented that firms that are judged by the market to have poor prospects of earnings indicated by low share prices and high ratios of B/M equity will have a higher expected return than firms with strong prospects.

Fama and French (1992) evaluated the roles of market beta, earnings, size to price, leverage and B/M equity in explaining the cross-section of average returns. Their sample included all nonfinancial firms listed on US stock exchanges from 1962-1989. They concluded that P/B ratios explained the averages of share returns and that the P/B ratio is a proxy of risk and mispriced shares. In addition, Fama and French (1993) used their three-factor model to investigate any abnormal return by establishing portfolios based on equity capitalization, B/M ratios, dividend yield, and E/P ratios. They concluded that the abnormal returns are not significantly different from zero. Two studies, Knez and Ready (1997) and Loughran (1997), analyze and extend the research of Fama and French (1992).

Knez and Ready (1997) examined the robustness of the size and B/M ratios. Firm size and the B/M ratio are significant variables in explaining differences in expected returns. The data uses a least trimmed squared estimator that removes a percentage of the observations. A negative relationship between size and average return is found and is caused by a small number of extreme positive monthly returns. Thus, reducing the extreme observations by 1% led to a positive relationship between size and average returns. Accordingly, a large number of small firms' positive returns are concentrated in a minority of the months in the sample, mainly in January. Loughran (1997) likewise finds that firm size and the B/M ratio are prime determinants of share returns. Loughran's results indicate that size and B/M should play a limited role in equity investments decisions for the vast majority of portfolio managers. Loughran's methodology compares historical P/Es with hypothetical P/Es—the reciprocal of the deviations of current earnings from estimated earning power—and discusses deviations of history from theory and what these deviations indicate regarding investor opinions of share prices and future earning power in certain times.

Ryan (1995) investigated the determinants of B/M ratio by constructing a model for accrual-based measurements of accounting. The model provides forecasts relating to the regression coefficients of B/M ratios on changes in current and lagged market values. The sample includes 450 firms from 131 industries for the years 1980-1989. Ryan's results are consistent with the model's specifications; that is; market values have the highest variance and low predictability in comparison with the movements in book value. Estimated coefficients were significantly negative for the total sample and more negative for the sub-samples of firms that have longer asset lives.

On the other hand, ample evidence exists that the B/M ratio has little or no information content and is therefore not very reliable. Kothari, Shanken, and Sloan (1995) did not find any significant relationship between B/M ratio and share returns. In addition, Daniel and Titman (1997) found that size and M/B are not risk factors in an equilibrium pricing models as reported by Fama and French (1996). Furthermore, Garza-Go'mez (2001) uses a sample of companies listed on the Japanese stock market to investigate if the correlation between risk and the market value of equity explains the premium earned by investment strategies based on the ratio of B/M. Results show that the relationship between B/M and risk is weak. Garza-Go'mez explains this weak relationship by stating that market value correlates not only with risk but also with variables measuring liquidity and past performance. However, book value of equity has a strong correlation with financial risk. Garza-Go'mez states that the overall evidence suggests that the high correlation between book value and risk reduces the role of market value as a risk proxy and makes other information contained in the market appear to be the main source of the B/M premium.

Ample studies also compared both multiples with each other and for performance. Wilcox (1984) investigated the ability of the P/B ratio to predict ROE and compared the performance of the P/B with the P/E based on a sample of US firms in the food industry for the year 1981. Results indicate that the P/B–ROE model is superior to the P/E ratio. The P/B–ROE permits the estimation of investment horizon, shareholder return and market consensus expected return on equity based on historical data. However, stable earnings growth might not lead to

higher prices as dividends have an impact, while leverage might be good or bad. Finally, shares with high beta do not seem to have a higher required return as predicted by CAPM. Penman (1996) investigated the relationship between the P/E and the P/B ratios. The author reconciled both ratios by comparing current and expected future ROE and described the role of ROE in determining these ratios. Penman's main conclusions were that the current ROE is related to P/E but not to P/B and while the P/E ratios are poor indicators of future growth, P/B ratios indicate the effect of future profitability and are good signals of earnings growth. Any anomalies or market inefficiency relating to P/B and P/E ratios would be explained by the mispricing by the market of the factors that determine the ratios. Both studies suggest that analysts recommending equity investment decisions should predict changes in market prices before they occur, since these changes indicate the transitory or permanent nature of changes in earnings.

Davis (2001) investigates the debate that the B/M ratio has no information content that can be used to find value shares. He compared the B/M ratio with other measures that are frequently mentioned as the more relevant alternatives such as E/P and sales/P that have received the most attention in empirical studies. Data for the sample covers the period 1963-2000. Results indicate that ranking firms on B/M ratio remains a valid alternative for identifying value shares.

Early emerging market research concentrated on correlations between mature markets and emerging markets as a way to increase expected returns. Later, research probed deeper into the emerging market in terms of market efficiency, size effect and expected return prediction using various market-based ratios among others. Many emerging market studies employ cross-sectional regression analysis to examine the pattern of asset returns. Claessens, Dasgupta and Glen (1995) used data from the International Finance Corporation for 19 emerging markets to examine the effect of several factors on asset returns. The authors found that asset returns in emerging countries can be explained by their risk or beta, size, trading volume, and to a lesser extent by the earnings to price ratio and dividend yield. Harvey (1995) employed a sample of 800 equities from 20 emerging markets including six from Latin America, eight from Asia, three from Europe, two from Africa, and one from the Middle East – Jordan to examine risk

and return during the period from 1986 to 1992. Harvey investigated the effects of the inclusion of emerging market assets in a mean-variance efficient portfolio and concluded that the inclusion will significantly decrease the volatility or the risk of the portfolio and increase expected return because of the low correlations between emerging market returns and developed market returns. He also analysed the risk of emerging markets using the asset pricing theory that resulted in the failure of betas to explain the cross-sectional differences in expected returns. Finally, Harvey investigated the predictability of the emerging market returns and concluded that the predictability of the emerging market returns is larger than the predictability of developed market returns and that the local information in emerging markets plays a more significant role in predicting their returns. While the market's correlation with US returns is closely dependent on the degree of predictability for developed markets, this was not the case for emerging markets because of the lack of a significant association between correlation with US portfolios and predictability. Table 3.5 summarises relevant empirical studies that concentrate on market multiples for emerging equity markets.

Table 3.5: Summary of market-based research for emerging markets

YEAR	AUTHORS	RESEARCH OBJECTIVE	SAMPLE DESCRIPTION
2004	Chang, Lima & Tabak	Examine weak form market efficiency	11 emerging markets from 1992-2002
1995	Claessens, Dasgupta, & Glen	Examine cross-sectional pattern of asset returns using beta, firm size, E/P ratio, dividend yield & turnover	19 emerging markets from the IFC
1995	Harvey	Examine sources of return variation in emerging markets	20 emerging markets from 1986-1992
1998	Chui & Wei	Examine beta, B/M & firm size variables	Pacific Basin emerging markets
1999	Rouwenhorst	Examine cross-section of asset returns	20 emerging markets from 1982-1997
2000	Audoğan& Gürsoy	Test explanatory power of E/P & P/B in the cross-sectional variation of average returns	19 emerging markets from the world composite index
2001	Barry, Goldreyer, Lockwood, & Rodriguez	Examine the robustness of size and book-to-market effects	35 emerging markets from 1985-2000
2003	Abdel Shahid	Measure P/E, P/B, ROA, ROE with ownership structure	Firms listed on the Egyptian stock markets
2004	Seddighi, & Nian	Stock market efficiency	Chinese stock market

Rouwenhorst (1999) also examined cross-sectional variations in share market returns for emerging markets and found similar results to those for developed markets. The sample included 20 emerging markets from 1982-1997. Results concluded that 'small stocks outperform large stocks, value stocks outperform growth stocks and emerging markets stocks exhibit momentum' (Rouwenhorst, 1999, p. 1462).

Audoğan and Gürsoy (2001) investigated the explanatory power of E/P and P/B in the cross-sectional variation of average 3, 6 and 12-month ahead returns in emerging equity markets using an approach similar to Fama and MacBeth (1973) algorithm within an international CAPM framework using a risk factor. Their results indicated that both E/P and P/B ratios have predictive power of future return, especially over longer time periods.

Barry, Goldreyer, Lockwood, and Rodriguez (2001) examine the robustness of size and B/M effects for thirty-five emerging equity markets during the period 1985-2000. Using cross-sectional regressions and controlling for global and local systematic risk, the authors find that B/M effects are significant and are robust to tests accounting for non-normality and for firm size effects, and they do not depend on extreme returns. Size effects also exist but do not have the robustness found for B/M results. Moreover, size effects are found when size is measured relative to the local market but not in tests using absolute firm size.

As the Far East began to show impressive growth rates, researchers followed the money, and more studies were conducted in pacific-basin export markets. For example, Chui and Wei (1998) examined the relationship between share returns, market betas, B/M and size in five pacific-basin emerging markets, specifically, Hong Kong, Korea, Malaysia, Taiwan, and Thailand. The authors used a sample of firms' returns from the five countries to formulate nine portfolios. Their results were mixed and indicated a weak relationship between market betas and average share returns in all markets. The B/M explained the cross-sectional differences in average returns in three of the five markets: Honk Kong, Korea, and Malaysia, while significant size effects existed in all markets except Taiwan.

However, were emerging markets efficient, at least according to the EMH? Chang, Lima, and Tabak (2004) investigated whether the weak form efficiency existed or not in emerging equity markets. The sample employed consisted of daily share closing share prices for eleven emerging markets worldwide (Argentina, Brazil, Chile, India, Indonesia, Malaysia, Mexico, Philippines, South Korea, Taiwan, and Thailand) and for two developed markets, the U.S and Japan, included for comparison purposes. The data cover the period 1992-2002. While their results indicated the non-existence of weak form efficiency in the Asian equity markets, results did indicate weak form efficiency in the Latin American markets with the exception of Chile. Seddighi and Nian (2004) examined the existence of stock market efficiency in the Chinese Exchange Market. Based on a sample of daily closing prices for eight shares listed on Shanghai Stock Exchange and its index for the year 2000, the results do not support either market efficiency or the random walk theory.

Abdel Shahid (2003) employed a sample of 90 firms listed on the Cairo & Alexandria Stock Exchanges as of the end of year 2000 to investigate the ownership structure to determine whether certain types of owners are dominant and if the type of ownership affects major market and accounting performance indicators such as ROA, ROE, P/E and P/B ratios. Results showed an existence of highly concentrated ownership in the Egyptian market and the dispersed ownership percentage affected ROA and ROE and but did not affect the P/E and the P/B ratios. She concluded that this might indicate the presence of economic or political factors, among others, that may be affecting Egyptian firms' performance other than the ownership structure.

3.5   STUDIES ON THE ASE AND JORDAN

Similarly, a number of published studies in Jordan examined the information content of different accounting measures, risk, market efficiency, size effect, among others. However, none examined the usefulness or the information content of the P/E and the P/B ratios. Additionally, a few studies examined the accounting regulatory environment in Jordan. Table 3.6 reviews the studies performed on the Amman Financial Market (AFM) and later the ASE.

Table 3.6: Empirical research on the AFM/ASE

YEAR	AUTHORS	RESEARCH OBJECTIVE	SAMPLE	GENERAL RESULTS
2000	Bino & Omet	Examined relationship of risk & return in AFM	19 service & industrial firms from 1989-97	Earnings level is more associated with abnormal returns than with change in earnings.
2000	Abu Nassar & Al-Debi'e	Examined role of E/P ratio in improving the returns-earnings relation	Service & industrial firms in AFM from 1988-1996	EP ratio captures the effects of both transitory components of earnings & share price anticipation of earnings.
2001	Abu Nassar & Al-Debi'e	Examined whether share prices lead earnings	Service & industrial firms in AFM	Prices lead earnings by up to three annual periods in the AFM.
2001a	Al-Rai	Examined association between ratio of M/B of equity & the accounting ROE & between market valuation & the accounting ROE	Firms listed on AFM from 1990–1994	Results indicate the non-existence of a statistically significant association between accounting ROE & M/B of equity or between these returns and market values for the sample.
2001b	Al-Rai	Tests impact of earnings, risk, & growth on market values of the firms	Firms listed on AFM between 1990-1994	Investors discount the earnings & risk components in their equity valuation, but ignore growth term
2001	Al-Khalaylehd	Examined association between share return & ROE and ROA	40 firms in AFM from 1984-1996	There is statistically significant association between share return and ROA & ROE.
2001	Omet	Examined company size effect	AFM & Muscat Securities Market	Results show absence of the size effect in Muscat & some weak evidence in the AFM
2001a	Haddad	Examined information content of reported financial statements & the relation between accounting variables and abnormal returns	44 service & industrial firms listed in AFM from 1989-1998.	While the accounting variables have information content, the earnings level variable dominates the other independent variables in explaining abnormal returns
2001b	Haddad	Examined earnings level as an explanatory variable for returns	19 service & industrial firms listed in AFM	Level of earnings is more strongly associated with abnormal returns than with change in earnings.
2002	Abu Nassar & Al-Debi'e	Examined information content of income statements items as independent variables to the share returns.	30 industrial companies from the AFM from 1987-1998	There is information content in the income statement items but there is no additional information content above that of the earnings figure.
2003	Haddad & Haddad	Examined accounting earnings & future accounting earnings with security returns	25 industrial firms in AFM from 1985-1999	There is information content for accounting earnings but not with future accounting earnings.
2003	Haddad	Uses ratios of B/M, debt to equity, sales to price, & firm size as proxies for measuring risk	35 service & industrial firms listed in ASE	There is no relationship between these ratios & share returns, therefore cannot use these ratios as proxies for risk.
2003	Al-Fayyoumi	Examined the effect of emerging markets characteristics on efficiency tests	AFM market index from 1993-2000	AFM was inefficient up to 1996 then became more efficient after 1997 due to implementation of institutional, technical & regulatory reforms
2012	Dahmash and Qabajeh	Examined the value relevance of Ohlson (1995) model using an unbalanced panel regression analysis	365 industrial & commercial firms listed on ASE from 2003-2008	Results showed value relevance and high explanatory power for the variables of the model.

Starting at the turn of this century, a series of studies by Abu Nassar and Al-Debi'e (2000, 2001, 2002) examined different market related associations in the ASE. Abu Nassar and Al-Debi'e (2000) examined the role of E/P ratio in improving the returns-earnings relation. The sample employed only service and industrial firms from the ASE during the period 1988 to 1996. Their results indicate that the E/P ratio captures the effects of both transitory components of earnings and share price anticipation of earnings whereby the explanatory power of the model and the earnings response coefficient increased by 148% and 126%, respectively. The same authors (2001) examined whether share prices lead earnings in reflecting value-relevant information in the ASE and if so, by how many periods. The regression results suggest that prices lead earnings by up to three annual periods in the ASE. Furthermore, including the leading periods' return in the model can significantly improve the estimated earnings coefficient on average by 615% and thus approach their predicted value of 10.75. Additionally, the adjusted R^2 can be improved by an average of 45%.

In another study, Abu Nassar and Al-Debi'e (2002) also examined 30 industrial companies from the ASE for information content of several major elements in the income statements (per share data for earnings, sales, cost of sales, administrative & selling expenses, interest expenses & income taxes) as independent variables to the share returns. The sample period used ASE data from 1987-1998. Results suggest that there is information content in these income statement elements but there is no additional information content above that of the earnings figure. In fact, they concluded the opposite, that the earnings figure has additional information content above income statement elements.

Abu Nassar and Al-Debi'e imply the importance of preparing the income statement using the transaction approach. However, it is not known if the results for Abu Nassar and Al-Debi'e studies may or may not have been affected by the change and subsequent implementation of the IAS that came into effect in 1991 for all Jordanian companies.

However, during the same period, Haddad (2000) examined the relationship between risk and return for a sample of firms listed on the ASE during the period 1987-1997. They concluded that there was no relationship between risk and return as stated by CAPM. Haddad (2001a) investigated the information content

of reported financial statements by examining the relation between accounting variables and abnormal returns for 44 service and industrial companies listed in the ASE during the period 1989-1998. His results showed that while the accounting variables (change in earnings, dividends, debts, and sales and the change in dividends and debts) have information content, the earnings level variable dominates the other independent variables in explaining abnormal returns. In the same year, Haddad (2001b) examined earnings level as an explanatory variable for returns for 19 service and industrial firms listed on the ASE for the period 1989-1997. His results suggest that the level of earnings is more strongly associated with abnormal returns than with change in earnings and that using a simple market adjusted returns method that does not explicitly adjust for risk performs better than the market model. These results are consistent with the contribution of Brown & Warner (1980, 1985).

Haddad (2003) also used financial ratios for measuring firms' systematic risk of 35 Jordanian manufacturing and servicing firms in the ASE during the period 1989-2000. He examined the possibility of using the ratios of B/M, debt to equity, sales to price, and firm size as proxies for measuring risk. Results showed that there is no relationship between these ratios and share returns, and therefore there are no possibilities of using these ratios as proxies for risk.

Al-Rai (2001a) investigated and evaluated the empirical association of a firm's market value and its accounting rate of return on equity as an investment analysis tools. The association is examined for a sample of publicly held Jordanian companies listed on the AFM during the period 1990-1994, based on two cross-sectional equity valuation models that relate to an active portfolio management approach. The first model is based on the relationship between the M/B and the accounting ROE as a guideline in making the investment decision. The second model is based on the relationship between market valuation and the accounting ROE. The linear regression statistical approach was used in examining this association. The results indicate the non-existence of a statistically significant association between accounting ROE and the ratios of M/B or between these returns and market values for the selected sample. This indicates that investors in the ASE do not take into consideration accounting ROE as a fundamental analysis tool in their investment decisions. Al-Khalaylehd (2001) examined the association between accounting performance measures and market based

performance measures for firms on the AFM during the period 1984-1996. His results indicated a statistically significant association between share return and two of the accounting performance measures, ROA and ROE. These results directly contradict Al-Rai (2001a) results.

Furthermore, Al-Rai (2001b) described and examined the empirical relationship between certain accounting measures and share market prices. The relationship is examined for a sample of publicly held Jordanian firms listed on the AFM during the period 1990-1994. A cross-sectional equity valuation model is used to empirically test the impact of earnings, risk and growth on the market values of the sample firms. Results indicate that investors discount the earnings and risk components in their valuation of firms in the equity market, however they ignore the growth term. Abu-Nassar and Al-Thnaibat (2001) employed a sample of 19 firms from the service and industrial sector listed on AFM to examine the relationship between unexpected earnings and unexpected returns. They concluded that the association between the level of earnings and abnormal return is stronger than the association of abnormal return with the changes in earnings.

Other studies examined the efficiency of the AFM and size effects. Omet (2001) examined the company's size effects for a sample of firms in the ASE and the Muscat Securities Market. Results indicated the absence of the size effect in Muskat and some weak evidence of its presence in Amman. Al-Fayyoumi (2003) examined the effect of emerging markets characteristics on efficiency tests using the ASE market index from 1993 to 2000. The study suggests that the ASE was inefficient up to the year 1996 and then became more efficient after 1997 due to implementation of institutional, technical and regulatory reforms.

Dahmash and Qabajeh (2012) examined the value relevance of Ohlson (1995) model using an unbalanced panel regression analysis for a sample of (365) industrial and commercial public companies listed in the ASE during the period 2003 to 2008. The results showed value relevance for the Jordanian data indicated by the variables of the model and the highly explanatory power.

A few studies examine the accounting practice and regulatory environment in Jordan. Table 3.7 presents these studies. Halbouni (2007) examined the harmonization of accounting practices in Jordan. She surveys accounting

practices and changes in measurement methods for Jordanian companies from 2000-2002. Results indicate that accounting practices for inventory valuation & costing, goodwill, R&D costs, fixed assets valuation, depreciation, LT investments are not significantly different, while amortization of R&D costs & current investments are significantly different. The changes in accounting practices produce different levels of comparability between companies.

Obaidat (2007) examined if there is a gap between investors' & external auditors' perspective regarding accounting information qualitative characteristics. The sample employed a questionnaire that was administered to 25 investors and 29 auditors in Jordan. The results indicated that there is a gap between investors and auditors in terms of the qualitative characteristics of accounting information.

Table 3.7: Studies on accounting practice and regulation in Jordan

YEAR	AUTHORS	RESEARCH OBJECTIVE	SAMPLE	GENERAL RESULTS
2003	Rawashdeh	Examines the effects of introducing IAS on ASE	Sample of 18 adopting firms & 33 non-adopting firms from ASE during period 1989-1990	Results indicated that IAS provided extra information beyond the so-called local Jordanian standards.
2007	Halbouni	Examines harmonization of accounting practices in Jordan	Survey of accounting practices and changes between 2000-2002	Accounting practices for inventory valuation & costing, goodwill, R&D costs, fixed assets valuation, depreciation, LT investments are not significantly different. While amortization of research & development costs & current investments are significantly different.
2007	Obaidat	Examines gap between investors' &external auditors' perspective regarding accounting information qualitative characteristics	Questionnaire to 25 investors &29 auditors	There is a gap between investors and auditors in terms of the qualitative characteristics of accounting information.
2009	Al-Akra, Ali, & Marashdeh	Examines development of accounting regulation in Jordan	Descriptive analysis of case study, Jordan	Privatization contributed more to the development of accounting practices than other environmental factors.
2010	Al-Omari	Examines the suitability & applicability of internationally accepted reporting standards	Descriptive analysis of case study, Jordan	Globalisation & harmonisation have influenced most countries to adopt internationally accepted reporting standards.

Al-Akra, Ali, and Marashdeh (2009) examined the development of accounting regulation in Jordan. The authors conclude that political and economic factors contributed more to the development of accounting practices than other environmental factors. Al-Omari (2010) examined the suitability & applicability of internationally accepted reporting standards in Jordan. Results indicate that globalisation & harmonisation have influenced most countries to adopt IFRS among other local pressures including Jordan. In particular, the privatisation program in Jordan has resulted in major accounting reforms such as disclosure regulation and a corporate governance policy framework.

3.6 LINK TO THESIS

Chapter 3 shows that empiricists use several accounting and market-based models to evaluate the association between financial information and share market prices such as book value, earnings, ROE, ROA, P/E, P/B, E/P, B/M among others (see chapter 2, section 2.5 for an explanation of equity valuation models). Numerous researchers using various statistical procedures, such as OLS, consistently employ earnings and book values to test for the usefulness of financial accounting information. Thus, the study employs similar models and statistical procedures that are detailed in chapter 5. The previous literature had not investigated the question of whether accounting information produced from applying the IAS or IFRS is useful to equity investors of the ASE.

Previous studies have employed one research methodology to investigate relationships between share market price and/or share market returns and accounting-based information from the ASE, however, this study is the first to employ a mixed research methodology. The objective is to obtain a more complete and robust answer to the question of decision-usefulness of accounting information produced from the implementation of IAS/IFRS for equity investors of the ASE.

3.7   SUMMARY

The current literature review relates to information content studies that examined the importance of accounting earnings produced from the implementation of a set of accounting standards in a given country. This research examines the association of the BVPS and EPS to share market prices whereby the EPS and the BVPS are the results from the implementation of IAS/IFRS in Jordan.

Numerable empirical studies have examined the relationship between accounting-based information, such as the book value and earnings among others, and share prices to determine the usefulness of this information to investors as inputs to their investment decision-making process. While the debate continues between researchers as to whether these and other variables are proxies for risk or mispricing in the marketplace, in general, these studies indicate the relevance of accounting-based ratios in equity valuation for mature markets as well as for some emerging markets (Aydoğan & Gürsoy, 2001; Rouwenhorst, 1999; Chui & Wei, 1998; Claessens, et al., 1995).

Equity investment decision-making can be quite complex and no one specific strategy can claim to predict equity returns with complete accuracy. However, employing different but complementing strategies may create synergistic effects that may enhance the process for the equity investor.

The supposition was made in chapter 2 that the qualitative dynamics for any particular stock exchange will vary from market to market. This implies that the ASE may or may not be as efficient as other stock markets depending on several factors. This undoubtedly influences investor behaviour and affects the usefulness of financial information employed as inputs in the decision-making process. The next chapter discusses the environmental factors that influence the decision-usefulness of financial information which include, but are not limited to, the role of the government, the stock market, transparency in securities regulation, compliance and enforcement procedures, accounting profession and practices, prevailing regional political instability, macroeconomic policy, economic infrastructure and general global economic conditions. In addition, Chapter 4 discusses the development of the ASE and the accounting profession and their influence on the decision-usefulness of financial information that is produced from implementing IAS/IFRS.

Chapter 4 JORDAN'S ECONOMY, STOCK MARKET AND ACCOUNTING

PROFESSION

This chapter presents a broad perspective on Jordan's socio-political and economic status to provide a basis for understanding and to give further insight into the dynamics of Jordan's financial markets and ascertain linkages between the socio-political landscape and the country's weak emerging economy. This emphasises the importance of having an efficient and transparent capital market that facilitates the supply and demand for funds vital for increasing productivity and sustaining economic development and growth. The underlying factors that contribute to economic prosperity are numerous; however, in order for the public to invest in uncertain assets such as securities or financial intermediaries to loan capital, they need full and fair disclosure of financial information as inputs into the investment/credit decision-making process. Therefore, this chapter discusses the environmental influences on the decision-usefulness of financial accounting information to the equity investor.

A major element for the development and robust growth of a capital market is the knowledge that the market is reliable and therefore investable. This requires among other things an accounting and auditing profession to implement accounting standards and practices that produce relevant and useful information in which to attract investors, especially foreign investment, that will pump new capital as the lifeblood for the nation's socio-economic health. For this reason, it is crucial for public shareholding companies to regularly produce audited external financial reports for all users of financial statements. It is the responsibility of accounting and auditing profession — the number crunchers — to provide a verifiable link between the business world and the investing public.

For Jordan, politics and economics are intimately intertwined. As a small

emerging country, Jordan is in a state of transition. It has undergone a drastic social and economic transformation since the 1980s despite constant external challenges to virtually every aspect of life. Specifically Jordan has been transformed from an inward-oriented, mostly state-controlled and highly indebted economy to an export-oriented economy where the private sector is the primary engine of growth (IMF, 2004, p. 7).

In order to reach the national goals of sustainable growth and development and harmonic global economic integration, the Jordanian government has been embarking on a cautious but steady path of economic, political and social reform (King Abdullah II Website, 2011). Towards that aim, strictly prescribed macroeconomic policies and comprehensive structural reforms have been implemented for the past fifteen years that have yielded positive but limited results on the economic front, meanwhile causing a toll in human terms for social ills such as unemployment and more specifically underemployment and poverty.

Jordan's geographical location has affected not only its political scene but also its economic development and growth. Inevitably, regional events have spilled over to shape main aspects of Jordan's socio-political affairs. Consequently, the chapter begins with section 4.1 that describe the country's geo-political position and the effect that disruptive regional issues have on a resource poor Middle Eastern country. Section 4.2 discusses the socio-demographic profile, the societal forces and demographic factors that play a role in the country's productivity potential. Section 4.3 outlines Jordan's economy for the period from 1980 through 2009, with a particular emphasis on the study period, 1991-2009. Section 4.4 reveals the origins, structure and development of the ASE. Section 4.5 is an overview of developments within the accounting profession and its role in influencing decision-useful financial information to users of financial statements. Section 4.6 concludes the chapter with a final word on the country's present status. Figure 4.1 illustrates the structure of chapter 4.

Chapter 4
Jordan: Economy, Capital Market & Accounting Profession

4.1 Geo-political environment

4.2 Socio-demographic profile

4.3 The macro-economy

4.4 Development of the ASE

4.4.1 Amman Stock Exchange

4.4.2 Financial investment community

4.4.3 Privitisation program

4.4.4 Legislative & regulatory reforms

4.4.5 Trading statistics for ASE

4.5 Development of accounting and auditing profession

4.6 Summary

Figure 4.1: Structure of chapter 4

4.1   Geo-political environment

At the crossroad that connects the continents of Asia, Africa and Europe, Jordan is strategically located in the heart of the Middle East. However, it remains a resource poor country bordered by powerful oil-rich neighbours - Iraq to the east and Saudi Arabia to the east and south. Figure 4.2 shows the political map of Jordan in relation to the world and to its immediate neighbours. Jordan also borders Syria to the north, and Palestine and Israel to the west. Jordan is about the size of Portugal, according to the Central Intelligence Agency's (CIA) World Fact Book (WFB) (2011), with a total area of 89,342 km^2 that ranks Jordan 112 of 250 countries in land and water area.   The bulk of economic trade and commerce passes through Jordan's only vital international seaport, Aqaba, with a mere coastal strip of 26 km on the Red Sea. Geographically and politically, Jordan serves as a buffer state between Israel and non-friendly Arab states since 1994, when both parties signed a peace treaty (King Hussein Website, 2007).

Jordan is rich in ancient artefacts and ruins from some of the world's great civilizations such as the Greek and Roman. Evidence of its past geographical importance was revealed by a recent international Internet contest whereby Petra, the Nabataean city, was voted as one of the 'new seven wonders of the world' (NewOpenWorld Foundation, 2007). Petra and other ancient sites had
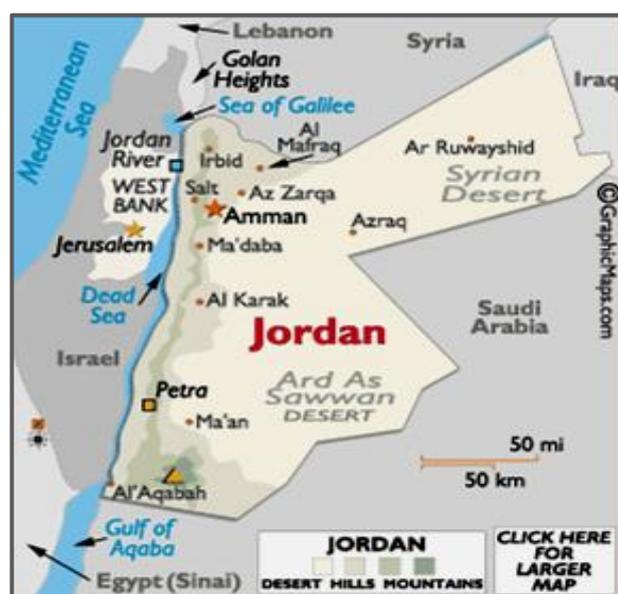
Figure 4.2: Political maps of Jordan
Source: (Graphic Maps, 2007).

enabled a short-lived boom in the tourism industry during the 1990s but that has not yet fully recovered from the after effects of 9/11 and persistent regional turmoil. Nevertheless, modern day Jordan maintains its strategic and tactical importance as a vital link of trade and communication in the Middle East region and as the major transportation route to Iraq which provides numerous lucrative opportunities.

As can be seen in Figure 4.3, most of Jordan is semi-arid desert with less than 3.5% arable land (2011)that is further complicated by chronic water shortages, droughts and polluted water sources. Figure 4.3 reveals the percentage for each type of ecosystem in Jordan for the year 2000. The Food and Agricultural Organization (FAO)of the United Nations (UN) estimates that forest area as a percent of total land area was 0%, savannahs and grasslands were 52% and sparse, barren land was 43%.
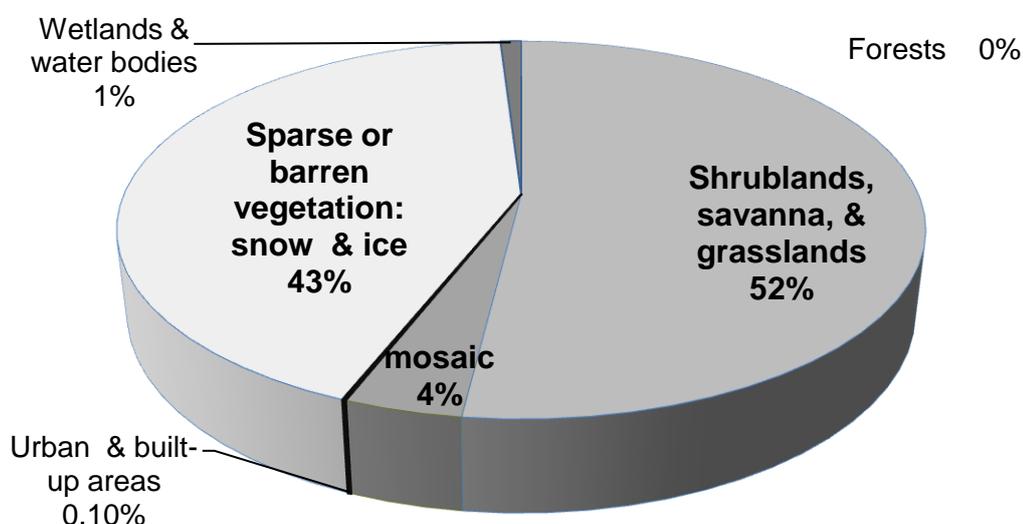
Figure 4.3: Type of ecosystems in Jordan, 2000
Source: Adapted from (FAO, 2011; World Resources Institute, 2012).

Agricultural land (shown in darker grey in Figure 4.4) includes irrigated and rained cropland, managed pastures, orchards vineyards and plantations. Sparsely vegetated (grey areas) includes desert, semi-desert and tundra (FAO, 2011). It

was not much better in the rest of the Middle East and North Africa (MENA) region with forest area only 1% of total land area.

Sparsely Vegetated
Undetermined (0 - 30)
30 – 40
40 – 60
> 60
Water
No Data
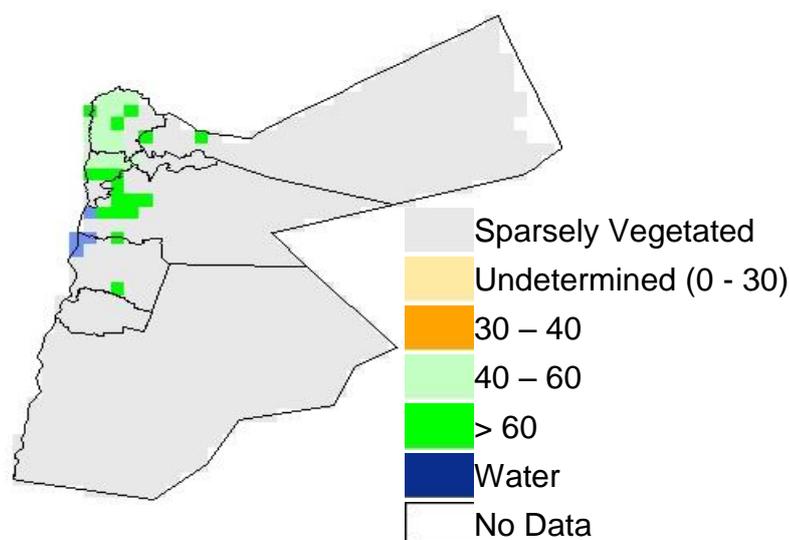
Figure 4.4: Permanent crops & arable land (percentage intensity)
Source: (FAO, 2011).

The loss of forest area in Jordan accelerated during the decade 1990-2000. The percent change in forest area was 15% for Jordan compared to zero for the MENA region and negative 3% for the rest of the world. Figure 4.5 reveals this trend and Table 4.1 presents the data.
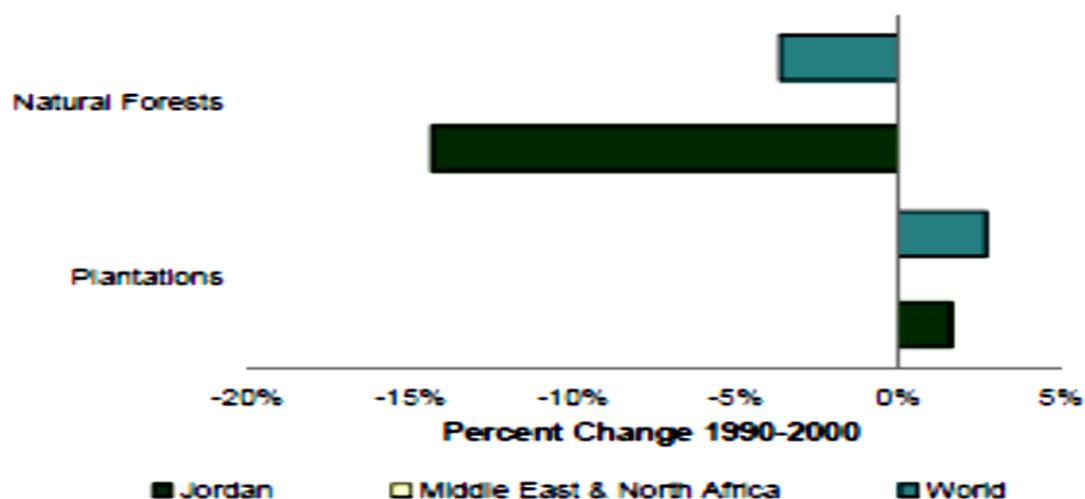
Figure 4.5: Percent change in forest area by type, 1990-2000
Source: (FAO, 2011).

Table 4.1: Ecosystem areas by type for Jordan, MENA and the World, 2000

	Jordan	MENA	World
Total land area	8,921	1,256,964	13,328,979
Percent of total land area covered by:			
Forests	0%	1%	24%
Shrub lands, savannah, and grasslands	52%	25%	37%
Mosaic	4%	7%	20%
Urban and built-up areas	0.1%	0.1%	0.2%
Sparse or barren vegetation; snow & ice	43%	66%	16%
Wetlands and water bodies	1%	0%	3%
Change in forest area during 1990-2000	15%	0%	-3%

Source: (FAO, 2011; World Resources Institute, 2012)

Figure 4.6 shows the map of precipitation for Jordan. A narrow strip of fertile land is revealed that contains 1% sparse forest and woodland (darker grey areas) but as previously noted, by the year 2000, forest areas had dwindled to 0%. This is in stark contrast with the vast desert regions in the south and eastern governates where scattered nomadic tribes predominately flourish. In fact, over 82% of Jordan's territory is under severe water stress (CIESIN, 2007).
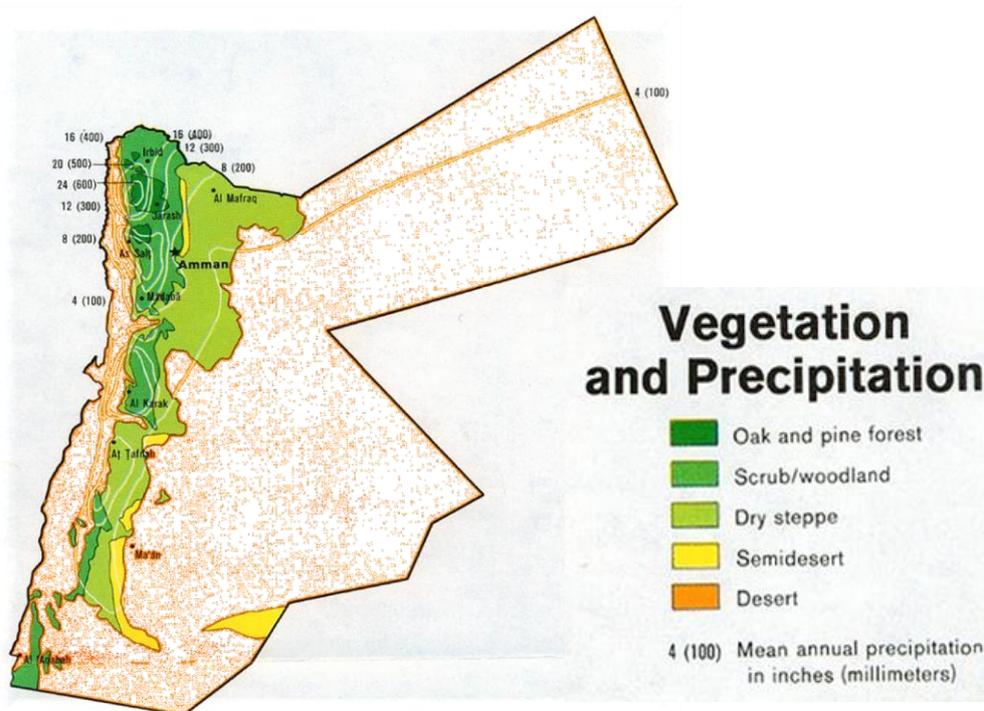
Figure 4.6: Map of precipitation for Jordan, 1986
Source: (University of Texas Library, 1986).

Meanwhile, growing urbanization in the Jordan Valley and the northern highlands account for severe soil degradation as can be seen in Figure 4.7. But the most severe human induced soil degradation lies in the south where large areas of dry, barren areas predominate (darker grey areas). Jordan's current environmental issues include: limited fresh water resources, deforestation, overgrazing, soil erosion, and desertification (2011).
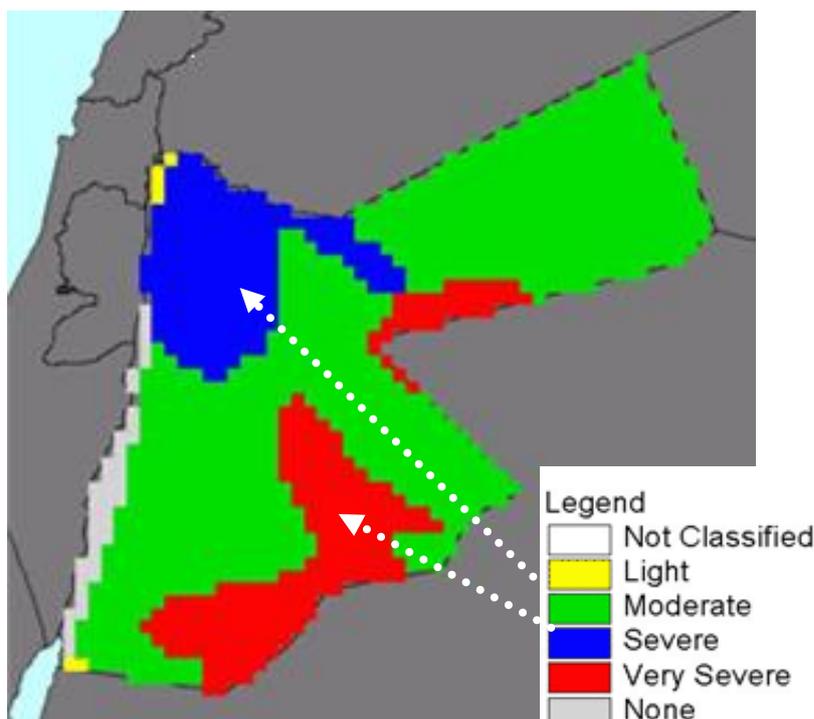
Figure 4.7: Severity of human induced soil degradation in Jordan
Source: (FAO, 2011).

Due to the above-mentioned conditions, it is not surprising that Jordan is among one of the water scarcest countries on the planet. The FAO regards water as a severe constraint on socio-economic development and environmental protection at levels of internal renewable water availability of less than 1000 m^3/capita/year. In fact, much of the region suffers from water shortages. Water-scarce countries are those with less than 1,000 cubic meters of renewable fresh water per person per year. Compared to the rest of the world for water availability, Jordan is near the bottom with a water poverty index of 46 and a rank of 121 of 147 countries

which measures, for a given country, the impact of water scarcity and water provision on human populations (World Resources Institute, 2012).An efficient water management system and a concrete water policy need to be developed in order to prevent a debilitating water crisis before it derails any meaningful economic recovery. While the government has already implemented some improvement, these may not be sufficient to avert a debilitating water crisis.

Jordan, a land that dates back to antiquity; however, is a relatively young nation of 60 years old. It gained full independence from the League of Nations in 1946. Thus the Trans-Jordan, a mandate under British administration, officially became the Hashemite Kingdom of Jordan so named after the governing royal family. It is a constitutional monarchy with a weak representative government. The ruling monarch is the head of state and the commander in chief of the armed forces with the power to declare war, conclude peace, and ratify treaties and agreements. The current monarch, King Abdullah II ascended to the throne after his father, King Hussein, the 'Father of Modern Jordan', died in 1999 after a 46-year reign. There are no elections for the executive branch which is hereditary but the monarchy exercises his executive authority through the prime minister and the Council of Ministers or cabinet of which the monarch appoints both. The legislative branch of the Jordanian government consists of a bicameral parliament, House of Notables, a 55-member body also appointed by the king and the House of Representatives or Lower House, a 104-member body elected by popular vote based on proportional representation (2011). Both houses serve four-year terms (UNDP-POGAR, 2012). The ruling sovereign may suspend the Chamber of Deputies and has done so several times since 1973. The judicial branch of the government is an independent court system consisting of civil, religious, and special courts based on Islamic or Shari'a law and the French commercial codes (2011). Judges, who are appointed by the Minister of Justice, decide matters of law and fact without the use of a jury system. While the government officially abolished tribal law in 1976 (King Abdullah II Website, 2011), many traditional Bedouins still follow customary tribal practices especially in rural communities and desert regions.

The kingdom, politically and socially, has remained remarkably stable for decades despite a strong and omnipresent monarch, several regional wars, long-term unresolved regional conflicts, waves of refugees from neighbouring countries, and the loss of the West Bank. However, in late 1989, years of political stability came to a temporary halt when the government took strict economic measures to alleviate the country's deteriorating financial situation. Consequently, Jordan experienced outbreaks of popular unrest when calls for parliamentary elections and riots destabilized Jordan and the region.

For Jordan, 1989 was an important year as it marked a turning point with respect to managing economic crisis and social change. "The King used political liberalization as a means to diffuse the economic pressures. Needing new sources of aid - the World Bank and the International Monetary Fund (IMF) - the government knew that it had to make wide-ranging economic changes: privatization, liberalization, etc." (Sayigh, 1996). A new era of democratic political development had evolved as King Hussein lifted the ban on political parties in the kingdom. The government issued licenses to a large number of political parties thereby granting them legitimate status (King Abdullah II Website, 2011). These parties included the Islamic Action Front (IAF) or the political wing of the Muslim Brotherhood, which unlike other Brotherhoods, the Jordanian branch has had a rather effective cooperation with the kings of Jordan (Kjeilen, 2007). As a result, a nation-wide election for members of the General National Assembly was held in November 1989 for the first time in 22 years followed by second and third elections in November 1993 and 1997. While elections are supposed to be held every four years, the King postponed the 2001 election after he had dissolved Parliament in June 2001. The exact reason for this postponement was never revealed to the public. Parliamentary elections, however, were eventually held in June 2003 after the second Iraqi War, in November 2007 and most recently in November 2010 (UNDP-POGAR, 2012). Nevertheless, the Jordanian government is embarking on further political reforms through its wide-ranging Reform Agenda of 2004 as not only a way to encourage female and youth participation in the political process but as a means to prevent any single party from becoming too powerful in Parliament. The Ministry of Political Development and Parliamentary

Affairs was established to fulfil these goals by implementing measures to build and strengthen the over 20 political parties in Jordan that lack a solid base of support and viable platform. The IAF is an exception in that it already has a strong political base since its strong opposition to government policies, most notably, in relation to the Jordan-Israel Peace Treaty of 1994. Along with the new Elections Law 2001, the reforms ensure the establishment of new political parties and a more dynamic representative political body (King Abdullah II Website, 2011). Additionally, a royal decree was issued in 2002 approving the National Centre for Human Rights Temporary Law, No. 75 to promote the principle of human, religious, and gender rights as ascertained by Islamic heritage and international conventions and charters (King Abdullah II Website, 2011). However, the more recent Political Parties Law was passed in 2007 that changed two previous amendments making the formation of political parties more stringent by reassigning political parties' activities from the ministry of political development to the ministry of interior and increasing the number of founding members required from 50 to 500 that should be from 5 governates which resulted in 22 political parties having their licenses revoked (UNDP-POGAR, 2012). Reaction from the Jordanian political parties was unanimous as they declared their rejection of the new law (UNDP-POGAR, 2012).During 2011, the 'Arab Spring' extended across the Arab World from Tunisia to Yemen spreading popular uprisings against established governments *en masse*. Jordan has witnessed periodic anti-government protests from the IAF and others, but for the most part these have been small and contained with heightened security measures. However, the King has appointed a new government replacing the prime minister, the cabinet and the Director of the General Intelligence Directorate (GID), Jordan's national security intelligence agency, with instructions to uphold "public freedoms, bolster democracy and respect human rights" (GID, 2012).

Since the sweeping reforms of 1989, the Jordanian government had taken steps to divest from media institutions and to promote a national independent media rather than a government media. In 1993 the Press and Publications Law was passed that "established for the first time in the Kingdom the individual's right to own and publish newspapers, the right to contest government's decisions that are

in contradiction with general ethics of press freedoms and most importantly, it abolished the government's claim to suspend and close down newspapers as had been the case throughout Jordan's history"(Kilani, 2002). Over a dozen new privately-owned newspapers were established and published editorials opposing the official government line, reports on corruption scandals involving government officials, articles on social taboos and other sensitive issues. The government had to control the press which signalled the end of semi-press freedom and the era of liberalisation in Jordan. From 1997-2001 a series of amendments and new press laws were enacted to silence the press and any voice of opposition. Most private newspapers were suspended, heavily fined and/or subsequently closed and journalists were intimidated and jailed. Since then, the King has royally decreed a ban on incarceration of journalists (Jordan Times, 2008).

Jordan ranks 114 out of 196 countries in the press freedom rank according to Freedom House, an expert nongovernmental organisation. Press freedom rankings represent freedom of the press with values 0-30 ranked as free; 31-60 as partly free and 60-100 as not free. Since 2003, Jordan has been rated as 'not free' using a total score from the country's legal, political and economic environments (Freedom House, 2011). Figure 4.8illustrates the trend for the press freedom rank in Jordan from 1994-2010.
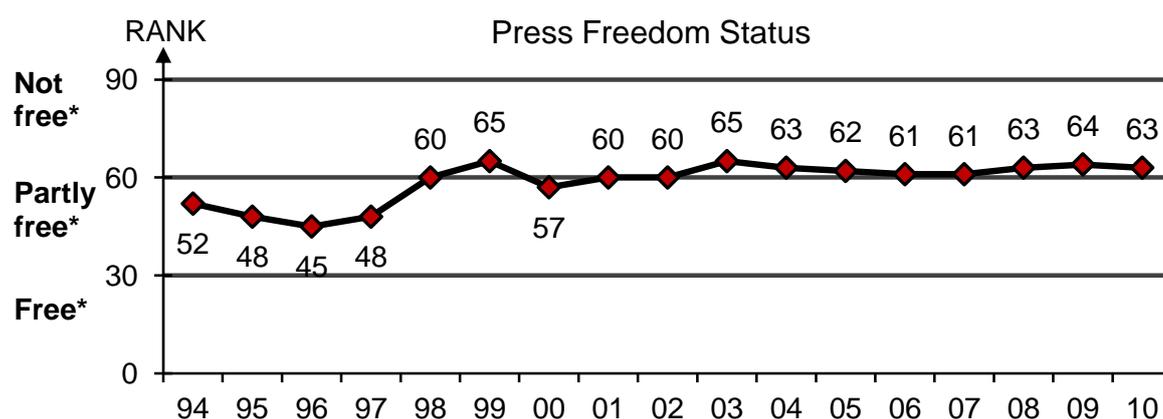
Values : 0-30 = Free; 31-60 = Partly Free; 61 – 100 = Not Free

Figure 4.8: Press Freedom Rank for Jordan, 1994-2010
Source: Adapted from (Freedom House, 2011).

An example of a violation against press freedom came on 30 June 2011 when a peaceful mass demonstration in downtown Amman turned violent and about a dozen domestic and foreign journalists were attacked by riot police (Freedom House, 2011). It is widely believed that journalists are still under surveillance by the GID, known as the *Mukhabarat*, and have been harassed by state security services. When compared to the rest of the world, Jordan belongs to the 40% globally and 75% within MENA that is rated as not having freedom of the press as illustrated in Figure 4.9.For 2011, Jordan is also 'not free' in the area of political freedom and civil liberties, meaning that "basic political rights are absent, and basic civil liberties are widely and systematically denied" along with the majority of the MENA population (85%) as illustrated as the Freedom Rating in Figure 4.9 (Freedom House, 2011).

Freedom status by population for each area

*Freedom Rank = political freedom + civil liberties   ☐ Free   ☐ Partly free   ■ Not free
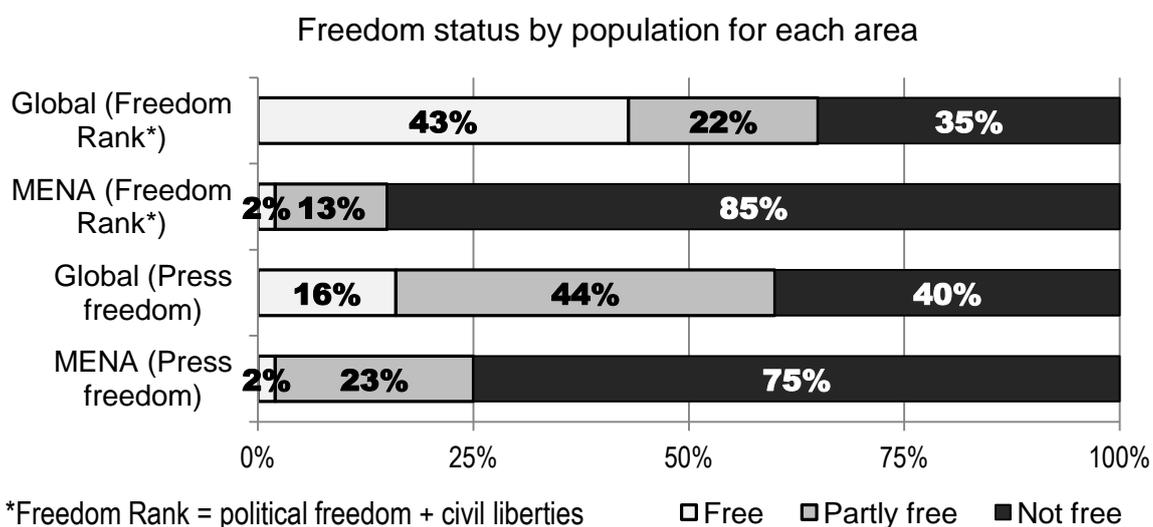
Figure 4.9: Comparative Press & Freedom Rank by population, 2011
Source: (Freedom House, 2011).

Even before independence, Jordan depended on foreign aid to survive; primarily this came from the United States and from its Arab neighbours. Nonetheless, since independence, lack of regional peace and high levels of foreign debt have hindered the development of the country's economy. In order to entice further aid from seemingly opposing sides during the 1980s, Jordan has had to implement double-edged foreign policy positions. On the one hand, Jordan is the region's 'key to peace,' thus a government that needs to be stable and strong. While on the other, staunchly committed to pan-Arabism, Jordan has tried to be for its Arab

neighbours, a 'confrontation state'- always at the centre of conflict. Political currency is gained from either stance allowing it to garner financial and political support, whether internationally for stability, or regionally for its confrontational military role (Sayigh, 1996). However, as the decade ended and the typical sources of aid dried up, Jordan needed to devise a new foreign policy to access desperately needed funds.

In the wake of the 1990 Gulf War, Jordan continued to suffer from a severe economic crisis complicated by an ineffective dual foreign policy that failed to please any side; therefore, the country was left isolated. The 1993 Oslo Accord marked a milestone for Jordan as it could now seek its own destiny without being tied directly to the Palestinian struggle. So, in 1994, Jordan signed its own peace treaty with Israel. Despite the restoration of a tiny area of occupied Jordanian land (approximately 380 sq. km^2) (King Hussein Website, 2007) as well as an equitable share of water from the Yarmouk and Jordan rivers, there was a lack of any meaningful peace dividend to the large number of Palestinian refugees living in Jordan who expected some sort of financial recompense from the State of Israel. On another level, the peace treaty did deliver significant political currency. Jordan had tried in 1988 to end the dispute that Jordan was not Palestine by severing ties to the West bank and relinquishing sovereignty and control to the Palestine Liberation Organization (PLO) (King Abdullah II Website, 2011). On the surface the 1994 Jordan-Israel Peace Treaty delivered a major political victory by clearly defining (Article 3) an international border between Jordan and Israel and so simultaneously ending the Israeli claim that 'Jordan is Palestine' so commonly referred to by then Defence Minister Ariel Sharon (Howe, 1982). But a further look reveals a bigger reality as Jordan's border became an extension of Israel through Article 4 of the treaty which states 'the Parties agree to take necessary and effective measures to prevent the entry, stationing and operating on their territory, or through it, of military forces, personnel or material of a third party, and in circumstances which may adversely prejudice the security of the other Party' (King Hussein Website, 2007). In effect, the treaty provided Israel with the strategic security it long needed, as its eastern land and air space could only be vulnerable only after Jordanian military defences had been deployed. The dramatic change in Jordanian-Israeli affairs would enable Jordan to cement relations with Washington and become part of the US strategic umbrella.

Jordan's long-term internal stability may be due to several factors, including the political reforms initiated in 1989 and the lifting of bans on political parties that allowed Jordanians to enjoy limited democratic freedoms. Yet several corruption scandals during the 1980s, 1990s and 2000s have damaged the country's business image. Transparency International's (TI) Corruption Perception Index (CPI) ranked Jordan 47 of 180 countries in 2010 with a 5.1 corruption score, on a scale from 0 (highly clean) to 10 (highly corrupt) taken from multiple surveys by business people, academics, and risk analysts (Transparency International, 2011). Dr Eigen, TI chairman, views the CPI as a measure of lost development opportunities since an empirical link had been established between the level of corruption and foreign direct investment by a Harvard University study based on the findings of the CPI 1996. The study showed that a rise in corruption levels from a low level in Singapore to a high level in Mexico is equivalent to raising the marginal tax rate by over 20%. A one-percentage point increase in the marginal tax rate reduces inward foreign direct investment by about 5% (Shang Jin, 1997). According to TI's data, the level of corruption in Jordan has averaged score of 5.0 from 10.0. Meanwhile its rank has worsened significantly from 25 to 47 during the period 1980-2010 which is due partly to the increase in the number of countries included in the index. Figure 4.10 illustrates Jordan's corruption level during the same period 1980 to 2010.
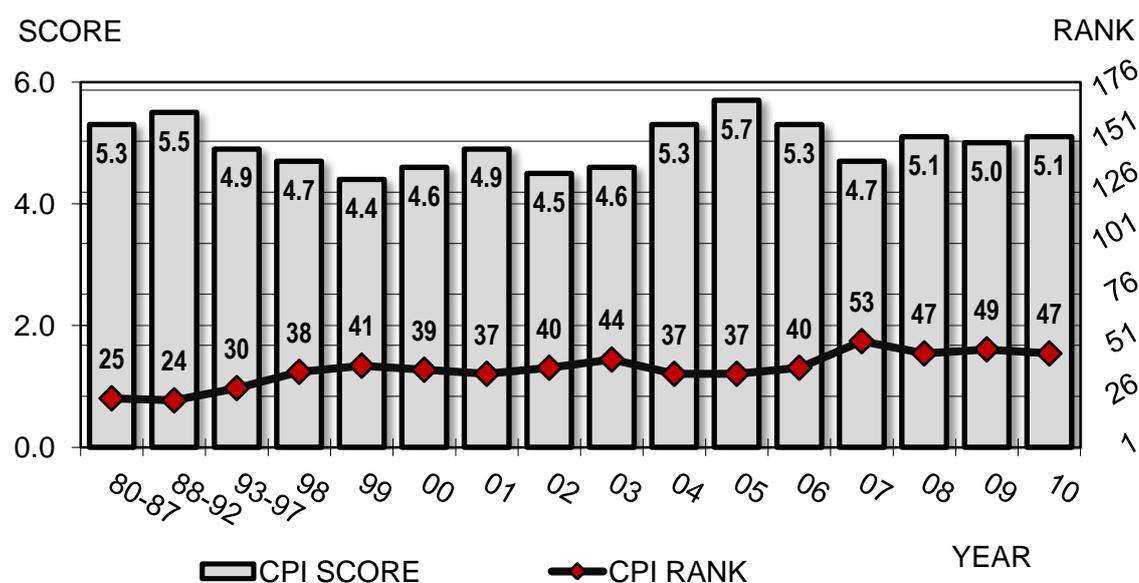
Figure 4.10: Trend in Corruption Perceptions Index for Jordan, 1980-2010
Source: Adapted from (Transparency International, 2011)

Generally corruption, real or perceived, has serious consequences for a country's economic development because any kind of corruption, whether political, police and/or business bribery, only increases concerns that the investment atmosphere is not equitable and therefore, is not worth the risk of investing time and capital. Jordan has had several corruption scandals and in response, the government has passed the Anti-Corruption Commission Law in 2006 and established the Jordan Anti-Corruption Commission (JACC) to mitigate the damage to its international reputation. The GID is solely responsible to enforce this law; if successful, it will go a long way in allaying investor anxiety if dealings in trading practices are fair. But first, the GID must tackle the issues of influence peddling and a lack of transparency in government procurement and dispute settlement as well as discourage the pervasive cultural practice of '*wasta*' which is the use of family, business, and other personal connections to advance personal and business interests(US Department of State, 2012). The United Nations Development Program (UNDP) has an on-going project to support the JACC in its efforts to stem corruption (UNDP-Jordan, 2011).

The World Bank has several Worldwide Governance Indictors (WGI) to measure the quality of governance that is aggregated from multiple expert organisations. Governance is defined as "the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them" (World Bank Group, 2012). Three WGIs are discussed here, the Voice and Accountability Indicator (VA), Political Stability and Absence of Violence Indictor (PS) and the Control of Corruption Indicator (CC). Figure 4.11 presents three of the WGIs and the concepts they measure.

WGIs are measures on a scale from -2.5, the lowest score, to 2.5, the highest score during the period 1996-2010. The percentile rank from (0-100) measures the percentage of countries that rank below Jordan. The WGI show a deteriorating trend for the VA and PS indicators. The VA and PS indicators report a negative score for every year during the 1996-2010 period.

Voice and Accountability Governance Indicator	•Captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.
Political Stability and Absence of Violence Indictor	•"Measures the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism.
Control of Corruption Indicator	•Captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests.

Figure 4.11: Worldwide Governance Indicators
Source: Adapted from (World Bank Group, 2012).

The VA score indicates that Jordan is doing worse at providing its citizens with a voice in governance with a range in the reported score of (-.22) in 1996 to a (-.82) in 2010. This represents a decline in VA of 273% and places Jordan in the 25-50th percentile rank which indicates that 50-75% of countries have more 'freedoms' than Jordan. The PS rank declined from (-.13) in 1996 to (-.27) in 2010 which is a 100% deterioration in the political stability score for the period. This indicates that there is a medium to high likelihood that the government faces challenges to its legitimacy. Overall, Jordan has improved in corruption control during the entire period from (-.13) score in 1996 to a positive score of .43 in 2008 but then the score declines again to .04 in 2010 indicating a 70% deterioration in corruption control. Jordan remained in the 50-75th percentile rank throughout 1996-2010 for corruption control. Nevertheless, perceived corruption at this level casts a negative shadow on the investment climate which influences the performance of Jordan's capital market discussed in section 4.4. Figure 4.12 illustrates the governance indictors, scores and ranks, for Jordan during the period 1996-2010.
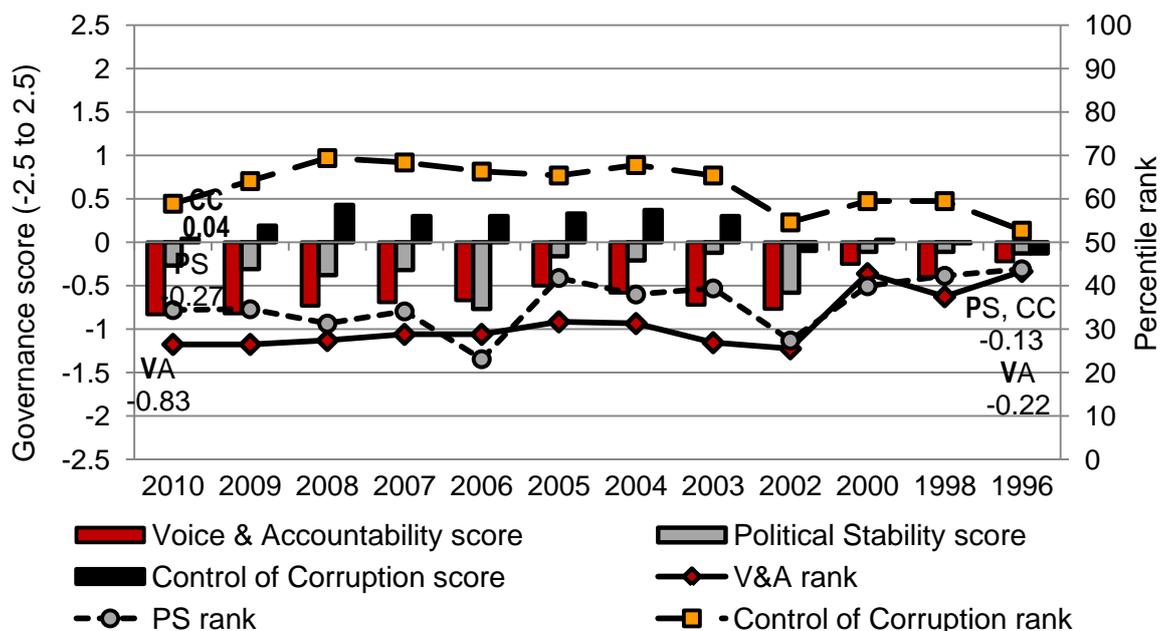
Figure 4.12: Trend in the Worldwide Governance Indictors, 1996-2010
Source: Adapted from (World Bank Group, 2012).

In effect the 'Arab Spring' movement of popular protest has been the widespread response to these negative perceptions. In Jordan, demonstrations across the country have been held to protest political, social and economic problems such as government corruption, growing poverty, high inflation and unemployment. This has implications for investors, local or foreign, who very wary of political and social unrest. Investors are generally risk adverse and may decide to divest or not to invest at all in the country. The government must implement political reforms to prevent further deterioration of public perceptions that could endanger the safety and security of the country. Effective corruption management coupled with political liberalization and civil rights reform may have positive implications for attracting new foreign investment, an essential factor in the development of dynamic financial markets especially for a struggling emerging market.

4.2   SOCIO-DEMOGRAPHIC PROFILE

For the most part, Jordanian society is homogenous in terms of language, religion and culture. Jordan is predominately a Sunni Muslim state, 92%, with the remainder Christian 6%, and other faiths 2%. Arabic is the official language and

English, the second language, is mandatory from primary until graduation in the twelfth grade (2011). English is also commonly understood between the upper and middle classes and is widely used within the business community. Actually, within the Middle East context, Jordan prides itself as having a highly developed educational system that has been compulsory and free since 1952 for children from 6-15 years of age (King Abdullah II Website, 2011). As the government recognizes the need to fill the gap between education and training and the country's employment requirements, education has become a greater priority receiving an increasing percentage of the national budget. During the period 1990-1999, UNESCO ranked Jordan 21 of 130 countries ahead of France (27), the UK (46) and the US (47) for government expenditure on public education at 6.4% of gross domestic product (GDP).Conversely, it ranked third last in the world for public spending on private educational institutions in 1999 (UNESCO, 2007). Meanwhile, literacy rates still lag at 89.9% that placed Jordan in the mid range of all countries during 2011(2011). However, earning an educational degree, once a near certain vehicle for upward mobility, no longer guarantees employment (Mapzones, 2007). The government had passed the Vocational Training Establishment Act of 1985 as a first step to fill the gap between education and employment needs. Since then, the government has built several applied and technical universities, some as joint ventures with European governments and/or western universities that cater to the changing needs of the labour market. While education, especially applied education remains a top priority for the country a more concrete strategy must be developed and implemented to prepare the next generation for globalization and workforce diversity with suitable educational, technical and vocational training.

There are, moreover, some internal pressures along socio-economic lines caused by the prevalent ethnic or tribal mix in Jordan. The majority of the population is almost evenly divided between indigenous Bedouins or 'pure' Trans-Jordanians belonging to a tribal system and Palestinian refugees that immigrated into the country in four waves since 1948 (1967, 1973, and 1991 being the others) from Israel, the occupied West Bank and more recently from the Gulf states (Sayigh, 1996). September 1970, also known as Black September, was a dark period in

Jordanian history as King Hussein's crown was at risk from an uprising by the PLO's creation of a state within a state. Eventually, the Jordanian army crushed the PLO whose fighters were forced to flee to Lebanon. It was a turning point for Jordanian identity, as the king embarked on the program of 'Jordanization' of the society that led to mistrust between Jordanians and Palestinians. For the most part, the Jordanian labour market remains divided; 82% of the private sector is in Palestinian hands, while the government - and particularly the higher-level bureaucracy – as well as the armed forces and Foreign Service are dominated by Jordanians and statistics show that not one refugee moved up in these sectors (PASSIA, 2007). Unofficial yet generally accepted figures are that the population is divided about evenly between the two. In 2006, The United Nations Relief and Works Agency for Palestinian Refugees in the Near East (UNRWA) accounted for over 1.8 million registered Palestinian refugees and another 400,000 Palestinian refugees who were not registered with UNWRA but received UN assistance. Nearly one half of the total population depend on assistance (2011). This, though, does not include the segment of Palestinians who are not registered and do not receive direct aid from UN agencies. In the meantime, the government is creating civil servant and underemployment jobs by expanding ministries, building new regional universities, and schools with the aim to guard against social discord. Nonetheless, the Jordanian-Palestinian schism may cause social unease down the road especially if production capacity does not increase and the labour market fails to meet demand.

Further complicating the socio-ethnic dichotomy is Jordan's demographic profile, which poses serious challenges for the country's economic development due to its high population growth rate and skewed age distribution. With an estimated total population of 6.5 million in 2011 and ranking 103 of 238 countries in population size (2011), figures from Jordan's Department of Statistics (DOS) reveal that nearly 70% of the country's population is under the age of 29 and approximately 68% are under the age of 29 (DOS Jordan, 2012). Figure 4.13 below shows the structure of Jordan's total population distribution according to age for the year 2010. Table A-3 in Appendix A presents the data for the population figures.
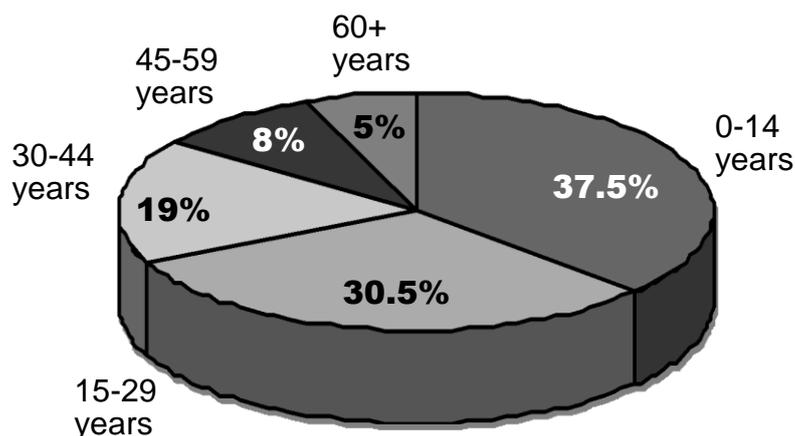
Figure 4.13: Jordan's population age structure, 2010 (percent)
Sources: Adapted from (DOS Jordan, 2012; UNDP, 2011, p. 31)

The World Bank estimates that the population growth rate will continue to decline from 3.7% during the period from 1975-2002 to 2.1% during the 2002-2015 period. This is a liberal estimate given the age structure above; nevertheless, it remains about double the estimated world's rate of 1.1% (World Bank, 2011). Figure 4.14 shows the population by age and sex for 2010. As can be seen, the current population is quite young with half of the total population for males and females under 19 years, meanwhile a small percentage of Jordanians are 60 years or older. Resources, however limited, must therefore be channelled into creating a growing and dynamic labour market fuelled by sustainable economic growth.
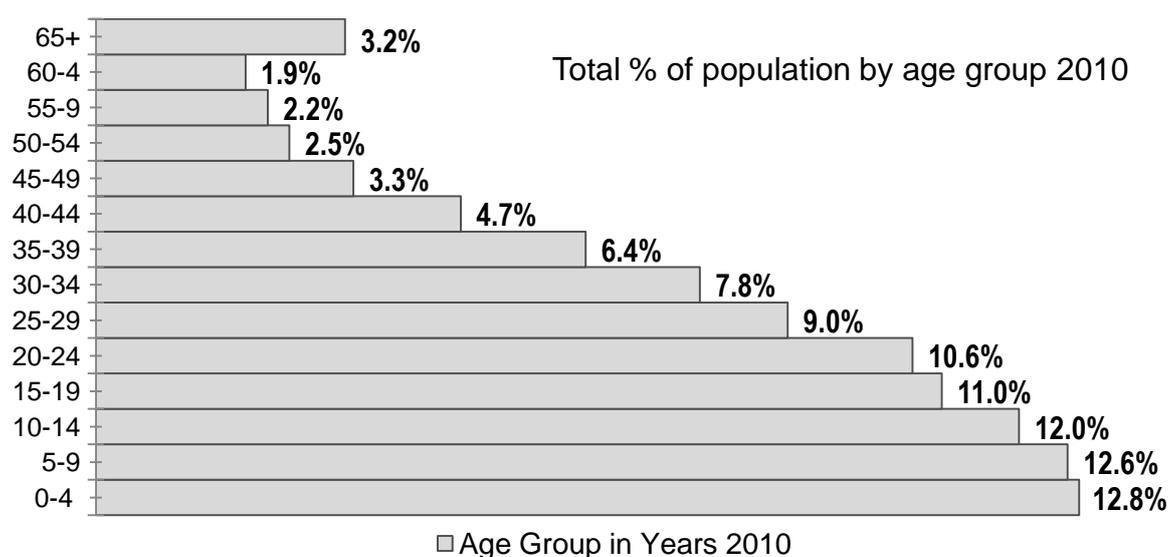
Figure 4.14: Population pyramid by age distribution, 2010 (percent)
Source: (FAO, 2011; DOS Jordan, 2012)

As the population matures, a host of worrisome conditions may develop when almost half of the population reaches the age of employment. A crisis point may result if the labour market remains saturated and unable to accommodate the millions of new entrants into the marketplace that are competing for jobs. According to the US Census Bureau, the projected population distribution after 20 years by age and sex for the year 2025 is shown in Figure 4.15. The pyramid shows a significant increase in the middle, employable portion of the population, while at the same time those under the age of 15 remain a significant percentage of the total population. This disproportionate increase may create serious implications for Jordan's future outlook in the areas of poverty and unemployment that places further strains on the country's industrial capacity and limited resources.
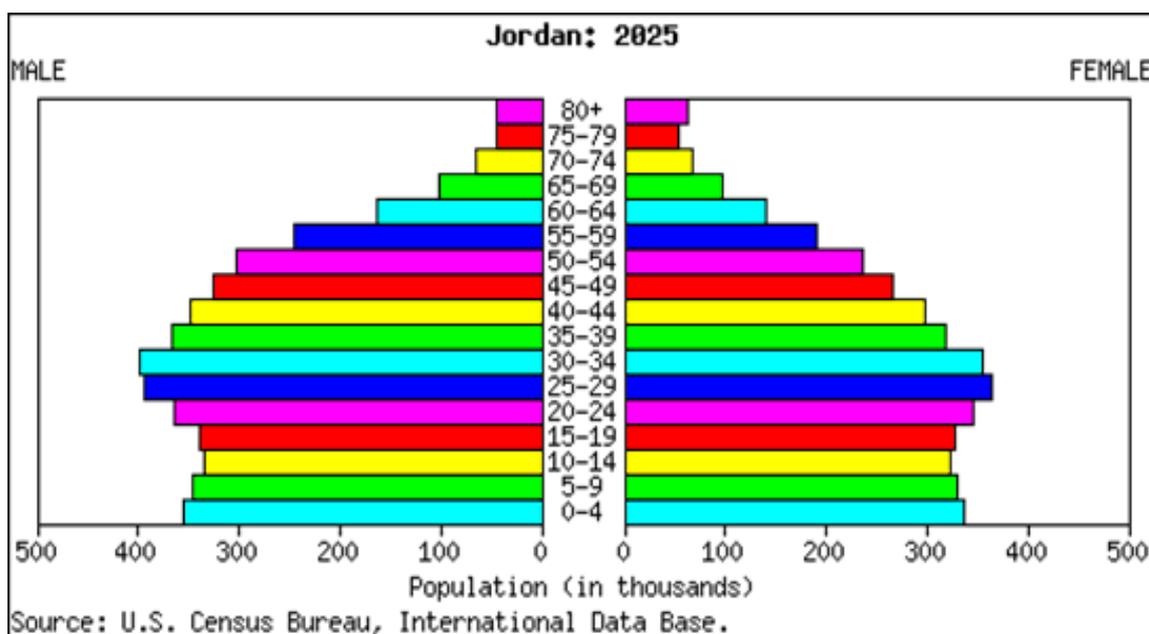
Figure 4.15: Population pyramid by age & sex distribution projected, 2025
Source: (US Census Bureau, 2007).

On the other hand, there are some recent signs of improvement in the standard of living as measured by the World Bank's human development index (HDI). According to the UN, the HDI is a composite index measuring average achievement in three basic dimensions of human development - a long and healthy life, knowledge and a decent standard of living and four indicators, life

108

expectancy at birth, mean years in schooling, expected years of schooling and gross national income per capita (World Bank, 2011, p. 29). Jordan's HDI has had an unstable climb from .509 in 1980 to .698 in 2011 on a scale of zero to one, which represents a 17% improvement over the past 30 years. In 2011, Jordan's HDI ranked 95 among 187 countries in the world with a rank classification of a medium human development index on a scale from very high to low human development (UNDP-HDI, 2011). Jordan ranked above the Arab States region that had a 43% increase in HDI from 0.44 in 1980 to 0.63 in 2011 (UNDP-HDI, 2011). Jordan also ranked well above other middle human development countries. On a comparative basis Jordan ranks even above the world rank of 6.82 in 2011. Figure 4.16 illustrates the HDI trend from 1980 through 2011.
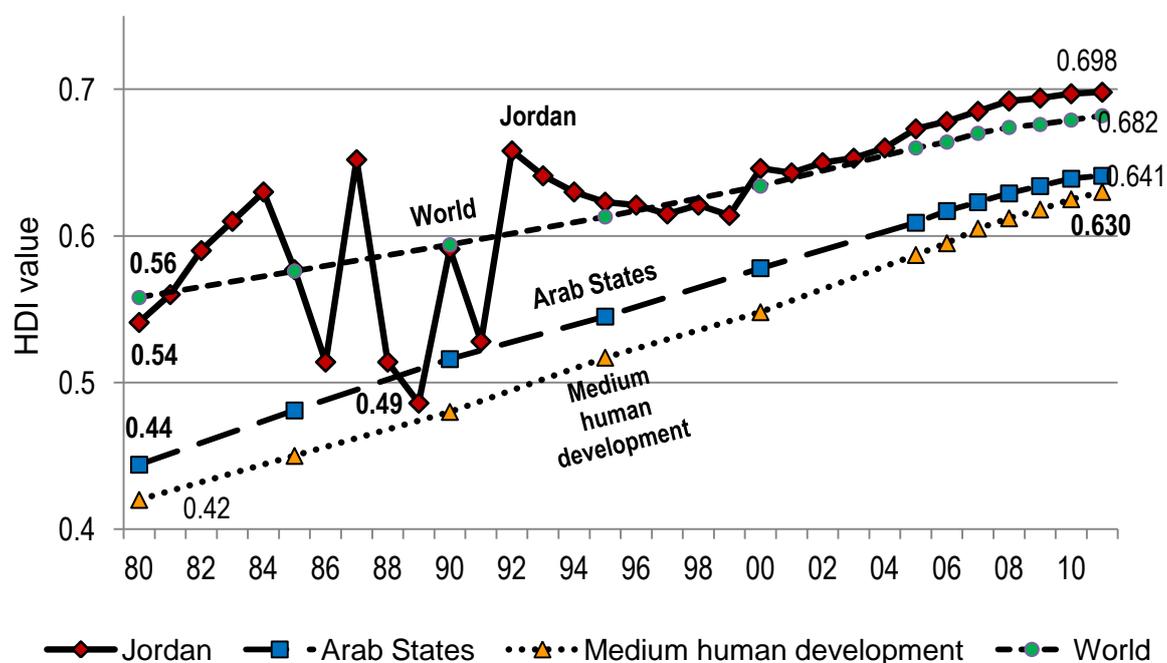
Figure 4.16: Trend of Human Development Index, 1980-2010
Sources: (UNDP, 2011, p. 32; World Bank Group, 2012; UNDP-HDI, 2011)

The HDI is relevant because a closer look at the human development factors shows that Jordan still has to overcome challenges with national poverty and unemployment levels. In 2000, Jordan made the pledge with the UN to reach the 8 millennium goals by the year 2015. Jordan is on track in most goals which are presented in Figure 4.17.

Goal 1	Eradicate extreme poverty and hunger
Goal 2	Achieve universal primary education
Goal 3	Promote gender equality and empower women
Goal 4	Reduce child mortality
Goal 5	Improve maternal health
Goal 6	Combat HIV/AIDS, malaria and other diseases
Goal 7	Ensure environmental sustainability
Goal 8	Develop a global partnership for development

Figure 4.17: UN Millennium Development Goals, 2000
Source: Adapted from (UN, 2011)

Jordan has achieved mixed results in reducing national poverty. During the eighties, Jordan had little poverty concerns as only 1% of the population were at the international poverty line at $2 per day and 3% at the national poverty line (World Bank, 2011). By 1990, however, poverty had become a national crisis as more Jordanians feel below the national poverty line. The percent of population in poverty depends on which unit of measure is used. Poverty levels have improved based on the percent of the population living on less than $1 per day but has worsened based on national poverty lines. In 1990, 11.7% were at or below the national poverty line and that has increased to 13.3% in 2009 or an increase of 13.6% of the population. Using the more stringent measure, the population living on less than $1 per day in 1990 was 2.13% and in 2009 it was reduced to 1.4% or a 60% improvement in poverty levels. In real terms, there has been little change during the period 1990-2009 based on $1 in constant price (1993) Purchasing Power Parity converted to Jordanian Dinars (JDs). In 1990 it was .46 and in 2009 it went up to .57% of the population. Moreover according to the UN the intensity of deprivation for those at the poverty line is 34.4% with a further 1.3% vulnerable to poverty. Figure 4.18 illustrates the trend in poverty during the period 1990-2009.
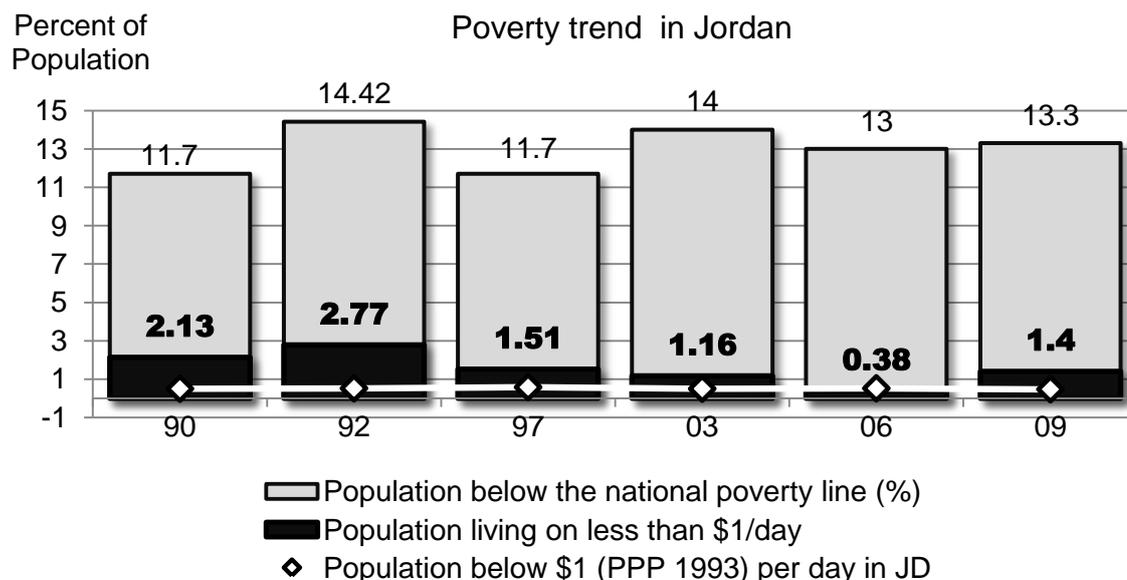
Figure 4.18: Poverty trend in Jordan, 1990-2009
Source: Adapted from (UN Statistics Div, 2011; World Bank Group, 2012).

Given that the social ills of poverty are difficult to eradicate, in 1998, the government developed a six-year Social Productivity Package through a multi-track strategy to reduce poverty levels and increase productivity in the poverty stricken segments of society. The Ministry of Planning, Ministry of Labour and Ministry of Social Development implemented and coordinated the Social Package including; expanding the cash transfers and other benefits of the National Assistance Fund to cover beneficiaries that are more eligible, developing or upgrading the physical and social infrastructure facilities in disadvantaged areas, training and rehabilitation of the unemployed; and providing micro financing for small enterprises to generate sustained income in poor regions (King Hussein Website, 2007). Another poverty strategy programme, the Social and Economic Transformation was also implemented.

Unemployment is another concern. Official figures record unemployment at 12.5% in 2011. However, there is a significant gap between male and female unemployment. The average unemployment fort males between 1986 and 2004 is 14%, whereas its 23% for females. During this period there were on average 64% more unemployed females than males. Unofficial unemployment figures, however,

estimated by the CIA ranged between 25-30% for the period 1991-2008(CIA, 2011). Figure 4.19 illustrates the trend in unemployment for the period 1983-2010.

Figure 4.19: Total unemployment, male/female unemployment, 1983-2010
Source: Adapted from (DOS Jordan, 2012; World Bank Group, 2012).

Reducing the unemployment especially for women and the youth is an area of concern for achieving the first and third millennium goals by 2015. The Jordanian government is facing these persistent socio-economic problems head on by implementing plans to reduce poverty and unemployment to more acceptable rates. Targeting unemployment with plans such as vocational training and rehabilitation and adaptation of a National Training project to be conducted in cooperation with the Jordanian army to train 10,000 job seekers will aim to eliminate the mismatch in the labour market between jobs generated and skills formed (King Hussein Website, 2007). An education computerization plan aims at linking education output with labour market needs.

Another key factor affecting Jordan's socio-economic fabric is the influx of refugees that have fled neighbouring countries seeking asylum during the past 2 decades. Regional conflicts have strained Jordan's limited resources and infrastructure. Regional wars and major popular uprisings such as the first Palestinian *Intifada* in 1988, the Gulf War in 1990, the second Palestinian *Intifada*

in 2000, the Iraq War in 2003, the Second Lebanon War in 2006 and the 'Arab Spring' in 2011 have resulted in waves of refugees into Jordan. It is difficult to determine the exact number of refugees in Jordan, but Palestinians account for estimated 2.2 million (UNHCR, 2012). As of May 2007, Iraqis living in Jordan are estimated at between 450,000-500,000 of which 70% had arrived between 2003-2005 mainly from Baghdad (FAFO, 2012, p. 3; UNHCR, 2012). Most are Sunni Muslims with 56% older than 25 years of age, 18% between 15-25 and 26% are below 15 years of age with access to Jordanian educational system (FAFO, 2012, pp. 3-5). More recently, popular uprisings from the 'Arab Spring" and in particular the internal political war in Syria has caused thousands of Syrians to flee into neighbouring countries. As of 28 February 2013, The UN Refugee Agency reported the total number of Syrians registered as refugees as 765,209 with 306,356 refugees registered in Jordan. The largest economic strain would come from the commercial ties between Jordan and Syria should the Arab League trade sanctions take effect. Since 2000, total bilateral trade between Jordan and Syria is estimated at $7 billion and in the first nine months of 2010 trade accounted for $550 million (The Daily Star, 2011).

With the difficult demographic and economic situation affecting the country's employment and disparate wealth distribution levels, social conditions remain challenging. Moreover, vulnerability to external shocks and regional unrest has serious implications for Jordan's emerging economy. The next section highlights the main economic developments pertaining to Jordan and its relations with the rest of the world during the period 1980-2009 with an emphasis on the main macroeconomic stabilization and structural reforms implemented during the study period 1980-2009.

4.3   THE MACRO-ECONOMY

An understanding of macroeconomic activity, especially for emerging market economies such as Jordan, is essential in order to formulate appropriate economic policy responses that will, among other goals, result in increased

production capacity and efficient resource allocation for sustainable economic growth, thus providing an impetus for a privately-led export driven economy that will boost capital market investment and development. As a small open market-oriented economy in the middle-income range (World Bank Group, 2012) with poor natural resources, prone to water scarcity and droughts, little arable land and limited production capacity, it is ever more crucial to implement socio-economic programs and reforms to address these complicated challenges. This section presents the macroeconomic environment during the period 1980-2010.

Jordan has inadequate supplies of water and basic natural resources such as oil and coal. However, it is a major exporter of the natural resources phosphate and potash being the world's fifth and sixth largest producer for both minerals respectively (Taylor, et al., 2004, pp. 63, 65). Jordan is also the eleventh largest producer of bromine and the fourteenth largest producer of gypsum (Taylor, et al., 2004, pp. 18, 36). Additionally, it is the world's second largest exporter of fertilizers crude at 27% (UN Statistics Div, 2011). While Jordan has very limited gas resources, according to the World Energy Council (WEC), it does have nearly 40 billion tons of shale oil reserves that can be exploited using open pit methods. But for the present, Jordan still depends on the import of energy to meet its domestic needs. Cost of imported oil has constituted between 6-10% of GDP, depending on the prevailing world prices of oil (World Energy Council, 2011). Jordan's other major imports include: capital goods, machinery, consumer durables, live animals and food (2011). The United States Department of Agriculture reports that Jordan was the third largest importer per capita of barley and fourth largest per capita of wheat. However, during the period 1992-1998, Jordan was ranked number three in the world for agricultural production (FAO, 2011), and during the years 2000-2005 was ranked number three in the world for cereal production (World Resources Institute, 2012). Since then there has been a deteriorating trend in cereal production. Cereal production declined from a high of 172,193 metric tons in 1980 to 114,722 in 2002 to 50,367 in 2009 which shows a total decrease of 242% from the 1980 level to a decrease of 128% from the 2002 level. The dramatic shift in cereal production emphasises the severity of the water

scarcity crisis and the need for immediate solutions to avert further damage to the economy. Figure 4.20 illustrates the declining trend in cereal production during the period 1980-2009.
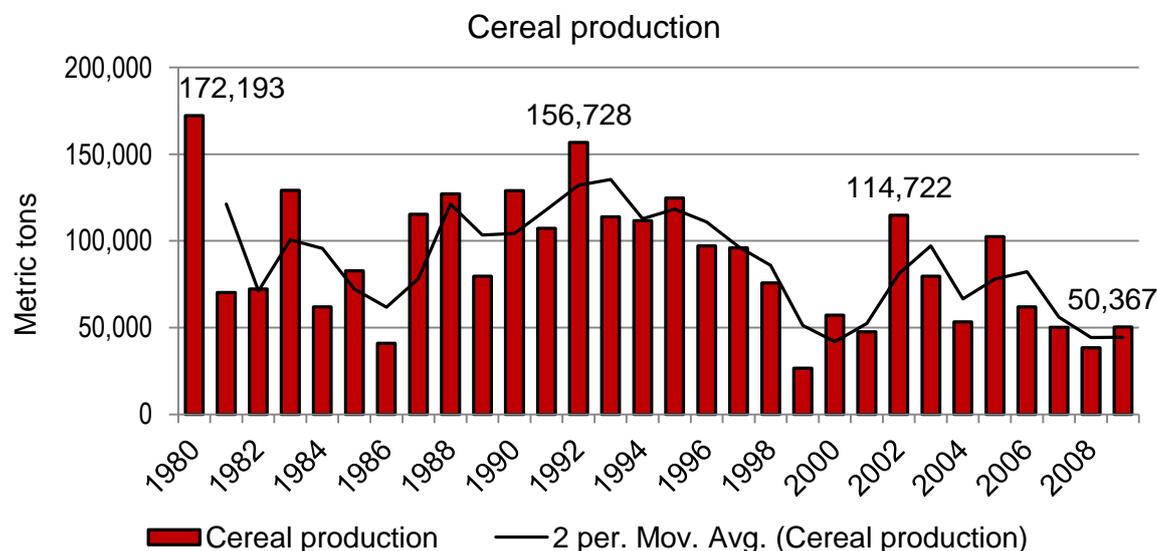
Cereal production

Figure 4.20: Trend in cereal production, 1998-2000
Source: Adapted from (World Bank Group, 2012).

The nation's fragile economy is highly vulnerable to oil price shocks and to long-standing regional conflicts and instability. For instance, the loss of the West Bank in 1967 meant that Jordan lost half of its arable land and subsequently the 1970 civil war with the Palestinian Liberation Organization caused a deep economic slowdown. In addition, the first Persian Gulf War in 1991 derailed economic and structural reforms that had only just started to be implemented as per the IMF recommendations. Moreover, the country's largest trading partner and main supplier of oil at below market prices, Iraq, was subjected to international sanctions that caused a significant setback to any viable economic recovery. Furthermore, the lack of any tangible peace dividends from the 1994 Peace Agreement with Israel and the death of the former ruler, King Hussein, contributed to low future expectations for the ailing economy and concerns over currency devaluations due to capital flight. This time, the Jordanian authorities responded with confidence building measures (IMF, 2004) that stabilized the situation and allowed the economy to rebound without resulting in the devastating crisis that occurred in 1989. The second Palestinian *Intifada* and the Iraq War have had a

deep adverse impact on the Jordanian economy. Nevertheless, Jordan has survived overwhelming odds and its economy continues a bumpy but gradual upswing despite all the negative events that have unfolded during the past thirty years.

During the 1980s, Jordan experienced a period of economic prosperity. However, this was in large part fuelled by external sources that came either from increased Arab aid and subsidies due to the thriving oil boom of the 1970s and 1980s or from expatriate remittances rather than by the country's internal production capacity. Heavy dependence on foreign aid and remittances from expatriates working in the Persian Gulf region and to a lesser extent, tourism which accounts for 30% of exports, are major sources of income supporting the Jordanian economy.

Hindered by poor management and corruption, the Jordanian government deferred the adjustment of its macroeconomic policies (Transparency International, 2011). By 1988, the delay in immediate action placed the economy in a severe crisis. The government was forced to devalue the JD by 33% to the U.S. dollar in an effort to improve the terms of trade and to counter the rapidly insidious growth of the black market. Furthermore, in order to comply with IMF requirements as a precondition for rescheduling outstanding loans and obtaining new loans worth US $79.3 million in IMF credit, the government reduced subsidies on many basic commodities (IMF, 2005).

By the end of the eighties, the economic prosperity of the 1980s had come to a sudden halt that threatened a financial collapse due to several factors. Internationally, the global slump in oil prices caused the return of thousands of Jordanian workers from the Persian Gulf thus deceasing remittances and significantly increasing unemployment and poverty. Meanwhile, regionally, the end of the Iran-Iraq War in 1988 put significant pressure on the Jordanian economy because during the war Jordan had served as the primary transhipment point for goods destined for Iraq and as such, had reaped lucrative profits. Furthermore, total aid to Jordan fell sharply from ÜS$1.3 billion including US $750 billion in Arab subsidies in 1980 to US $474 million in 1988 (Library of Congress,

1989). The country's soaring external debt, estimated in early 1990 at between US $6-8 billion, combined with a growing budget deficit caused a deepening economic crisis. The crisis reached its peak when the Jordanian government was unable to meet payments on its debt balance or service interest payments. Desperate economic measures had to be taken that spilled over into social and political unrest.

To mitigate the financial damage, in mid-1989, the Jordanian authorities began negotiations with the IMF to reschedule its debt. By 1989, Jordan had signed a five-year structural readjustment package with the IMF with the goal of restoring sustainable growth, curbing inflation, stabilizing the Jordanian dinar's exchange rate, and reducing internal and external financial imbalances (King Hussein Website, 2007). Jordan's economic performance began a strong positive turnaround in the first phase of the economic reform program. However, economic recovery was short-lived mainly because the Persian Gulf War of 1991 resulted in deepening Jordan's already serious economic problems. Almost immediately, the implementation of the IMF program was delayed resulting in a suspension of most debt payments and negotiation of future repayment programmes.

Moreover, the war resulted in strained relations with other Arab Gulf states who suddenly viewed Jordan with suspicious eyes for openly siding with the Iraqi leader, Saddam Hussein. Arab Gulf states had traditionally provided generous aid and subsidies to Jordan, but that abruptly changed and this badly needed source of revenue dried up. Leaders in the Gulf States turned resentment into action with the deportation of hundreds of thousands of Jordanian expatriates working in the Gulf region.

Meanwhile, as the expatriates returned home, the Jordanian economy took a plunge. During 1990 and 1991 worker remittances to Jordan dwindled to meagre levels (King Abdullah II Website, 2011). Exacerbating the problem, Iraqi refugees by the thousands flooded the country during and after the First Gulf War, thus dragging the domestic economy in a downward spiral causing serious problems in the balance of payments, stunting GDP growth, straining government resources, increasing unemployment and creating social tensions.

In the post-Gulf War era, Jordan has been able to achieve a debt write-off and re-scheduling through its peace with Israel. Because there is a limit to how much aid money Jordan can receive, it has been forced to reach additional agreements with the World Bank and the IMF. To meet their requirements, Jordan has had to cut its state budget and restructure the economy; this has caused widespread social dissatisfaction. Any economic restructuring, such as budget cuts and privatisation, would affect the local population, which relies on subsidies and public sector employment. Jordanians would interpret these changes as undermining the pact between the Hashemite and the Hijazi family which fear the Palestinian presence in Jordan, and see all policies as related to the Palestinian link (Sayigh, 1996). This would deepen socio-economic challenges.

Figure 4.21 illustrates the trend in the percent of foreign aid and worker's remittances that contribute to GDP annually. Since 2006, approximately 20% of GDP comes from worker's remittances, mostly from the Gulf region. Foreign grants have averaged around 7% of GDP for the period between 1980-2003. However foreign grants represent a substantial share of government revenues.
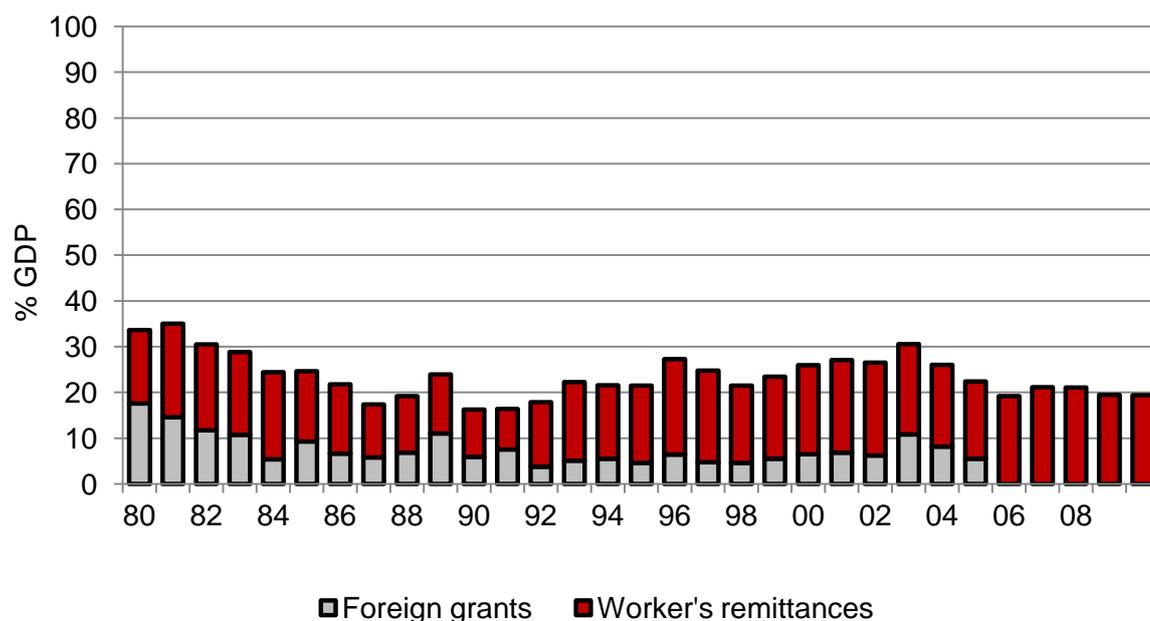
Figure 4.21: Foreign grants & worker's remittances (% of GDP), 1980-2009
Source: Adapted from (World Bank Group, 2012).

Cash inflows from foreign grants represent an average of about 36% of revenues during the period1990-2009. Average tax revenue for the same period represent the remanding 65% which is composed of 28% taxes from goods and services, 10% from taxes on income profits and capital gains, 17% on taxes from international trade, 9% from other taxes and 0.25% from social contributions. Figure 4.22 illustrates the percent each revenue item contributes to total government revenue.
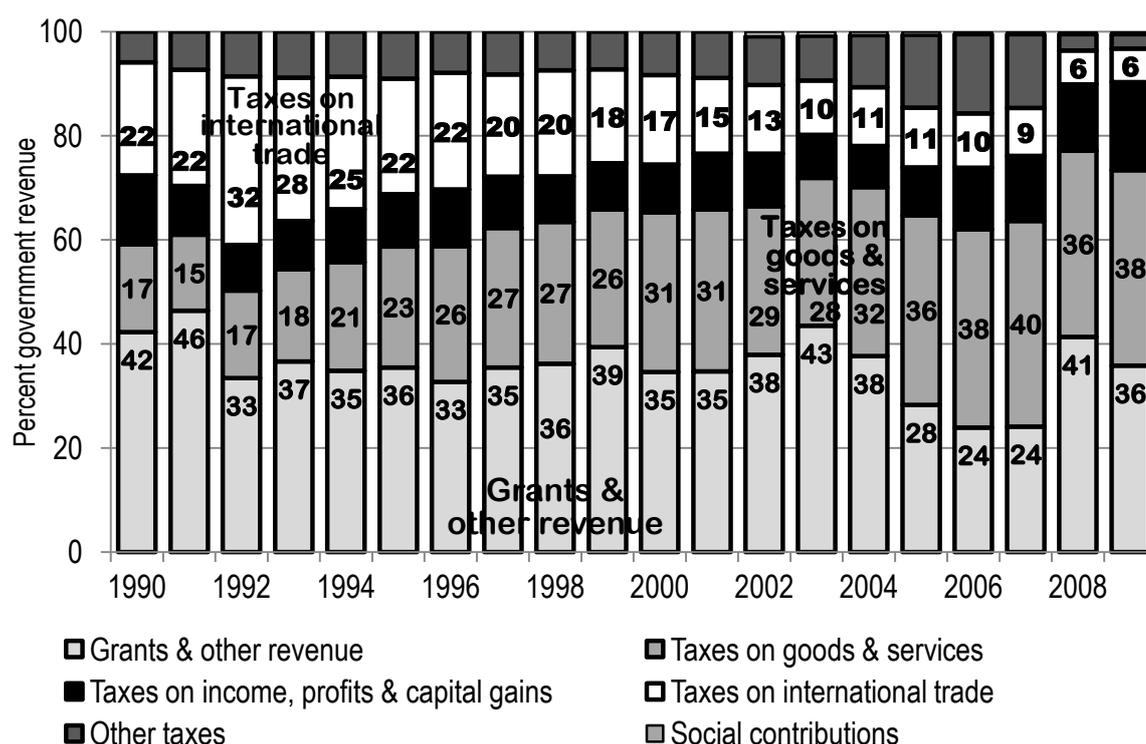
Figure 4.22: Revenue items as a percent of total government revenue
Source: Adapted from (World Bank Group, 2012).

Jordan's official currency is the Jordanian dinar (JD) with an approximate rate of exchange of $1.42 US dollars (USD) to one JD or JD0.709 to one USD. Since May 1989, the JD has been pegged to a group of currencies in an effort to stabilize and maintain its value. At the current exchange rate, the JD has been very stable and strong since 1996. Jordan ranks 90 among 176 countries in GDP size (World Bank Group, 2012), which is considered relatively small. The 2010 income per capita was US $4525 annually and according to the World Bank Jordan is classified in the middle-income range.

In general, the GDP per capita reflect a steady growth for most of the 1980s until the debt crisis during the period 1989-1991 when GDP per capita declined by 44% in 1989 from the1986 level. The government implemented the economic adjustment policies and structural reforms during the 1990s. In 1991, the government adopted a seven-year Economic Adjustment Program (EAP) that was established in cooperation with the IMF and the World Bank. The objective of the EAP was to adjust the Jordanian economy to the changing economic circumstances by establishing the necessary foundations for economic growth, removing distortions, achieving optimal allocation of economic resources and increasing domestic revenues and fiscal control (King Hussein Website, 2007). More specifically, the EAP aimed at increasing steadily the real economic growth while maintaining low inflation thus helping to solve the problems of poverty and unemployment. It also aimed at enhancing the net international reserve position and reducing the balance of outstanding external debt. The effect of the EAPs was that during the 1990s, GDP was stable with an average of JD1067 per capita.

During the period 2000-2010, GDP rose to 1,622 per capita and averaged JD1,378. This represents a constant per capita increase of just over 30% for the 3 decades from 1980-2010.Figure 4.23 depicts the long-term trend in the GDP per capita at constant prices.
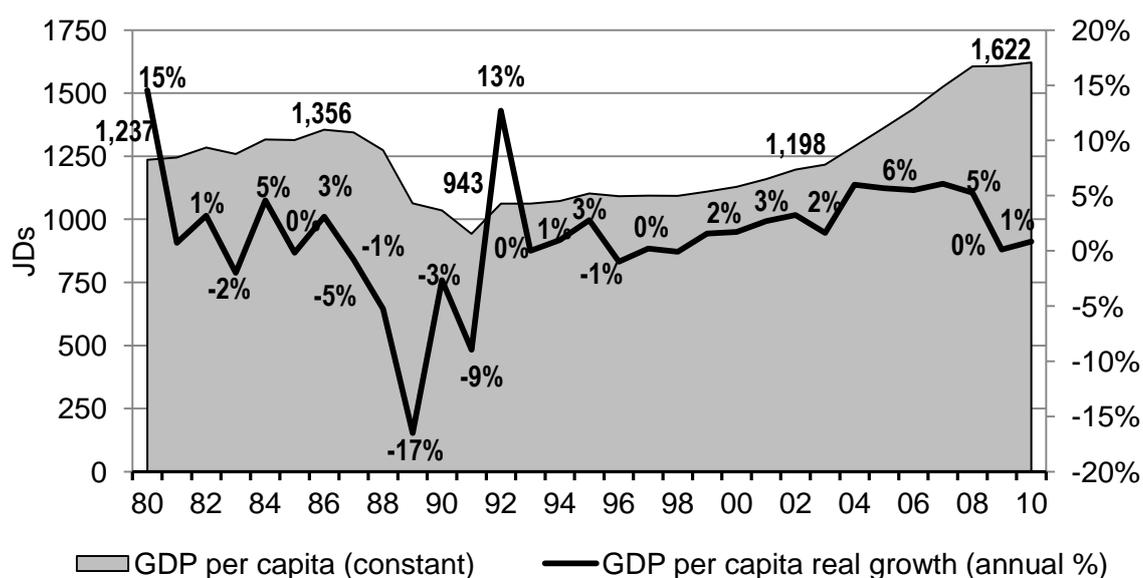
Figure 4.23: GDP per capita & real growth rate at constant prices, 1980-2010
Source: Adapted from (World Bank Group, 2012; DOS Jordan, 2012).

Economic growth and progress have not come easy, as Jordan has had to follow austere IMF prescriptions in order to have access to international loans, foreign aid primarily from the US which has given Jordan the 'most favoured nation' status, and extended various other forms of debt relief. Despite substantial international assistance, Jordan's real GDP growth rate for the past two years has not been higher than 1% (Figure 4.23). This underscores the serious impact of the global financial crisis and long-term regional political instability on the economic growth rates for Jordan. The trend for GDP per capita real growth rate from 1980 to 2010 is illustrated in Figure 4.23. The real growth rate was very unstable from 1980-1992. Growth rates declined significantly from 15% in 1980 to (-17%) in 1989, but averaged at 2% for the period. The real growth rate stagnated from 1993-2003 with an average real growth rate of 1.6%. Growth rates rose again during the 2004-2008 period averaging 5.7% until the global financial crisis affected Jordan during 2009-2010 when real GDP growth rates decreased to less than 1%.

Jordan continues to suffer from a high debt burden as it experiences both chronic trade and current account deficits for the past three decades, with the debt burden inadequately covered through borrowing and international aid. The trade deficit narrowed between 1980-1989 from (-65.8%) of GDP to (-18.8%) which represents a decline in the deficit of 65%. Between 1990-1999 the average trade deficit was (-24.4%) and (-28%) for the 2000-2010 period. The current account began and ended with a surplus during the period 1980-1989. The average was (-2.3%) deficit. During 1990-1999, the current account balance deficit widened to an average of (-6.4%) and for the period 2000-2009 the deficit averaged (-4.2%). In general, the trend in the trade deficit as a percent of GDP has been decreasing but the trend remains negative and unstable for the current account for the 1980-2010 period. Figure 4.24 illustrates the trend in the trade balance on goods and services and the current account balance as a percent of GDP during the period 1980-2010.
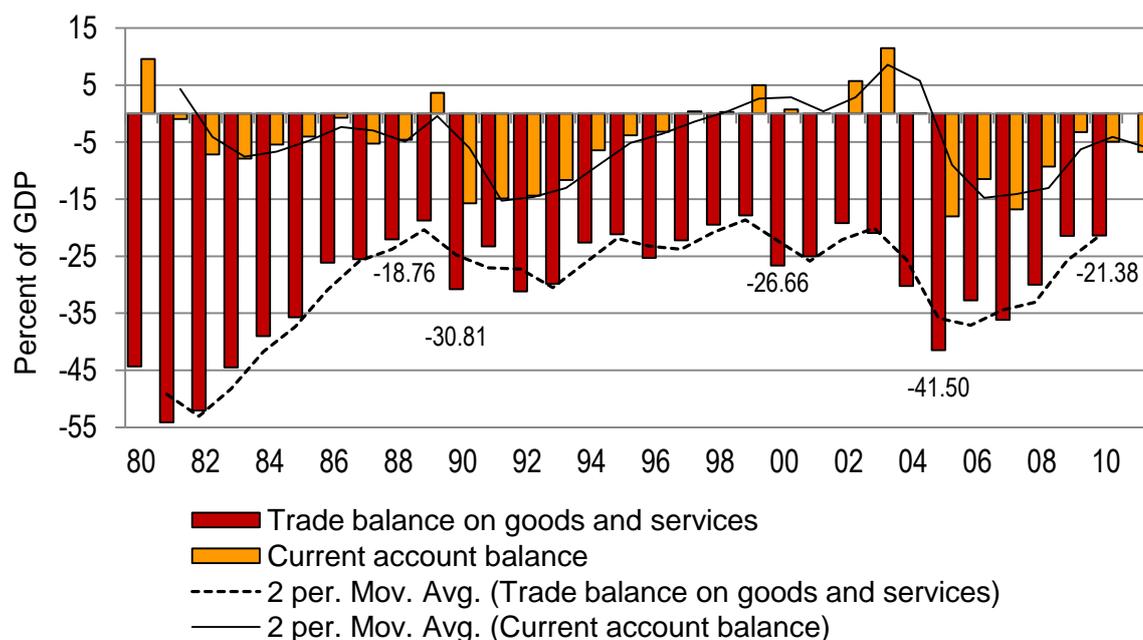
Figure 4.24: Trend in trade & current account balances (% GDP), 1980-2010
Source: Adapted from (World Bank Group, 2012).

Government expenses exceeded revenues in most years with the cash deficit averaging around 2% for the period 1990-2009. Central government debt was reduced significantly from 219% of GDP in 1990 to 68% in 2011. This is due to the austerity measures implemented during the 1990s and early 2000s. Figure 4.25 illustrates the trend in government revenues and expenses during the period 1990-2010 and the cash deficit during the period 1990-2011.
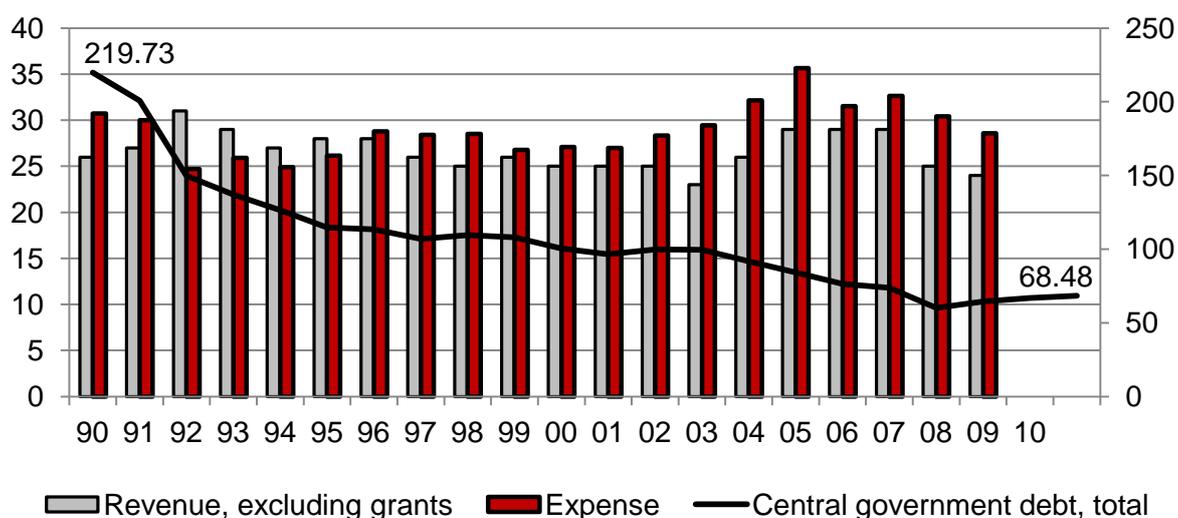
Figure 4.25: Government revenues, expenses & cash deficit, 1990-2010
Source: Adapted from (World Bank Group, 2012).

122

	1990	**1995**	**1999**
Fuel Oil			
Industry	14.50	-	-
Electricity	14.50	13.90	11.20
LPG (Location Specific)		70.00	70.00
Jet Fuel			
Army	29.30	15.00	17.00
Royal Jordanian Airline	29.30	-	-
Foreign Airlines	29.30	59.00	22.00
Gas Oil	16.54	-	-
Kerosene	33.59	-	-
Regular Gasoline (Location Specific)	0.156	0.100	-

Figure 4.26: Subsidies for oil products in Jordan (fils/litre, ton or cylinder)
Sources: (Ministry of Energy and Resouces, 2000)

In order to harness Jordan's greater revenue potential, the IMF urged Jordanian authorities to overhaul the income tax system in a more equitable and efficient manner. To increase federal revenues, a new Public Debt Management law was enacted in 2001. An amendment of the tax law was added to extend the tax base and reduce the tax exemption beginning in 2002. The sales tax went up in gradual increments from 10% in 1999 to 13% in 2002 and to 16% in 2004 (King Hussein Website, 2007). In the banking sector, new banking and deposit insurance laws were established and risk management regulations were passed to control risk resulting from credit exposures. The government reduced customs tariffs while the prices of oil products were increased and government subsidies for oil products have been slowly phased out as shown in Figure 4.26. In 2008 oil subsidies were eliminated completely. However, some basic food subsidies remain.

During the 1980s, inflation fluctuated greatly from a high of 25% to a low of (-1%) with an average inflation rate of 7% during the 1980-1989 period. Inflation rates averaged 5% during 1990-1999. Inflation peaked to 15% in 2008 as a result of the elimination of fuel subsidies and increasing world oil prices. During the global financial crisis, inflation plummeted to (-0.7%) in 2009. The average inflation rate was 4% during the 2000-2010 period. Figure 4.27 illustrates the trend in inflation rates during the period 1980-2010. Table 4.2 contains the data for basic macro-

economic indicators for Jordan during the period 1980-2010. Data for all years were not available for some indicators.
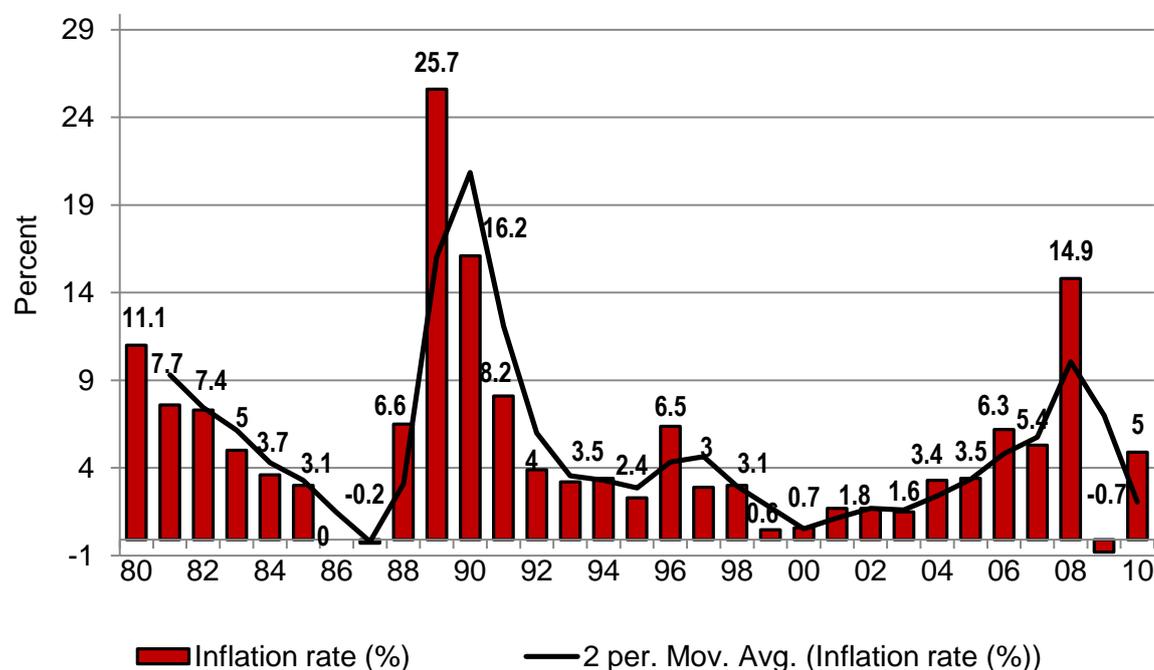
Figure 4.27: Trend of inflation rate, 1980-2010
Source: Adapted from (World Bank Group, 2012; UN Statistics Div, 2011; DOS Jordan, 2012).

In an attempt to become more independent, Jordan has further integrated its economy into the regional and global economies. In total, Jordan has membership in over 50 international organizations; a complete list can be seen in Appendix A. In 1999, the country entered the Jordan-European Union Free Trade Agreement that signalled a major shift in trade policy. The agreement calls for the gradual removal of trade barriers and an establishment of a free trade zone with the European Community over a twelve-year period (King Hussein Website, 2007). In an effort to globalise its economy, Jordan entered the World Trade Organization (WTO) in 2000, a move that may have caused some negative side effects, since it has led to the closing of local factories and the bankruptcy of local businesses.

Table 4.2: Basic macroeconomic indicators as percent of GDP, 1980–2010

YEAR	Central government debt, total (%GDP)	Cash surplus/ deficit (%GDP)	Expense (%GDP)	Revenue, excluding grants (%GDP)	Foreign Grants (%GDP)	Workers' remittances (%GDP)	Current account balance (%GDP)	Trade balance (%GDP)
1980	-44.33				11.73	16.02	9.58	
1981	-54.13				10.77	20.43	-0.946	
1982	-52.05				5.35	18.78	-7.169	
1983	-44.49				9.30	18.05	-7.914	
1984	-39.00				6.64	19.05	-5.451	
1985	-35.70				5.78	15.34	-4.006	
1986	-26.13				6.86	15.16	-0.719	
1987	-25.51				11.03	11.56	-5.255	
1988	-22.03				5.95	12.3	-4.569	
1989	-18.76				7.53	12.91	3.65	
1990	-30.81	-0.035	30.72	26	3.76	10.32	-15.71	219.7
1991	-23.29	-0.022	30.00	27	5.09	8.85	-14.864	200.6
1992	-31.18	0.046	24.69	31	5.53	14.1	-14.407	149.7
1993	-29.82	0.012	25.90	29	4.58	17.16	-11.643	137.0
1994	-22.61	0.006	24.92	27	6.45	16.03	-6.447	126.3
1995	-21.14	0.009	26.14	28	4.72	16.9	-3.813	114.8
1996	-25.30	-0.016	28.80	28	4.59	20.85	-3.205	113.5
1997	-22.24	-0.003	28.41	26	5.52	20.08	0.403	106.9
1998	-19.46	-0.050	28.51	25	6.52	16.88	0.276	109.6
1999	-17.85	-0.013	26.77	26	6.81	17.92	4.967	108.0
2000	-26.66	-0.020	27.11	25	6.18	19.47	0.704	100.5
2001	-25.00	-0.031	26.97	25	10.78	20.26	0.051	96.5
2002	-19.19	-0.031	28.33	25	8.17	20.3	5.689	99.7
2003	-20.96	-0.003	29.46	23	5.48	19.77	11.495	99.6
2004	-30.24	-0.014	32.14	26		17.88	0.068	91.8
2005	-41.50	-0.051	35.65	29		16.9	-18.043	84.3
2006	-32.72	-0.035	31.52	29		19.2	-11.466	76.3
2007	-36.14	-0.045	32.64	29		21.1	-16.796	73.8
2008	-30.01	-0.021	30.42	25		21.0	-9.273	60.2
2009	-21.46	-0.085	28.57	24		19.5	-3.262	64.5
2010	-21.38					19.4	-4.901	66.8

Sources: (Central Bank of Jordan, 2012; DOS Jordan, 2012; World Bank Group, 2012; UN Statistics Div, 2011).

Jordan was the 136th country allowed into the WTO on April 11, 2000 (Jordan MoFA, 2011). In 2001, a bi-lateral free-trade agreement with the US became effective. Jordan also entered into several other bilateral agreements with European and Arab countries. Regionally, Jordan signed a bi-lateral agreement with Israel in 1998 that allows Qualifying Industrial Zones (QIZs) to attract foreign investment with incentives such as duty-free access to US markets for any goods produced within the zones.

While improvement in the country's overall economy from extensive economic stabilization and structural reforms is evident, steady sustainable growth in real GDP remains elusive. The World Bank has identified several factors as major constraints to faster growth and development including external volatility and adverse regional neighbourhood effects; slow response of private investment, both in its level and in terms of productivity; and significant export competitiveness problems.

"In general, research shows that to benefit the poor most, economic growth must be coupled with policies that reduce inequalities and improve how income is distributed in a society" (Kakwani, 2004, p. 6). Without sustainable growth, serious challenges in the areas of population growth, poverty, unemployment, and efficient delivery of public services such as education, health and the water sectors become more difficult to tackle. Jordan is receiving substantial support, both technically and financially, from the US and other international donors in an attempt to successfully implement plans to improve the general welfare of the Jordanian population and specifically for women, underprivileged individuals and the resource-poor segments of society.

The importance of capital markets is well noted as inputs into the economy. Have trade liberalization measures, extensive multi-sector structural reforms and tight fiscal policies stimulated the private sector to lead economic activity? The next section takes a closer look at Jordan's emerging capital market and its development.

4.4   DEVELOPMENT OF THE ASE

The global financial crisis has shifted high growth potential from developed markets, Organization for Economic Cooperation and Development (OECD) to emerging markets. Both investors and investment capital abound with emerging markets forecasted to grow to 41% of global GDP, compared to an estimated 31% in 2011 and 16% in 1987 (Economist Intelligence Unit, 2012, p. 5). This represents a potential global GDP growth of 156%. Figure 4.28 illustrates the trend in market growth in percent of global nominal GDP since 1987.
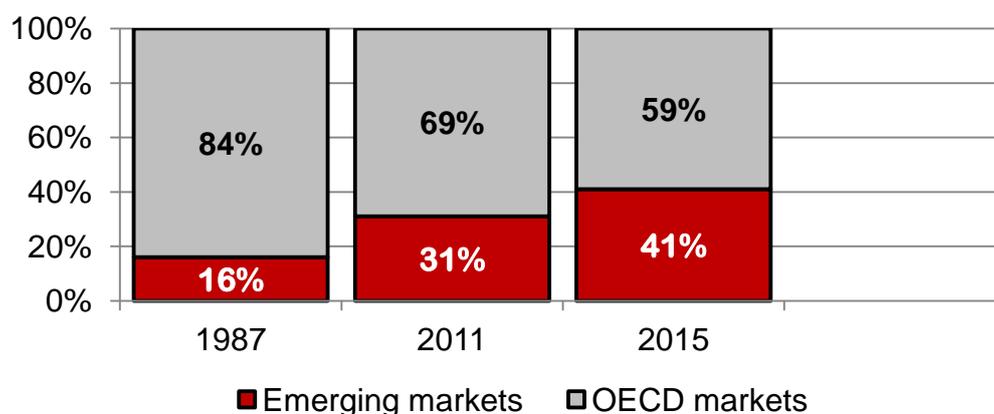
Figure 4.28: Trend of total emerging market growth of global nominal GDP (%)
Source: Adapted from (Economist Intelligence Unit, 2012, p. 5).

As developing nations enter the international financial market place in great force, emerging economies will gain a larger piece of the global 'pie'. Jordan is no exception. As was outlined previously in the economic section 4.4 there is an urgent need for an infusion of new investment capital into the country. This investment pipeline would almost certainly have to come from external channels. In an effort to attract those foreign investors, private or governmental, searching to improve their risk-return payoff, the Jordanian government along with World Bank and IMF guidance, implemented the required reforms that were necessary to transform an outmoded capital market into a first rate modern stock exchange equipped with the latest technology.

The perception that small emerging capital markets have weak regulatory and contractual enforcement deters foreign investors and in particular small investors from participating in the stock market. As investors see it, poor business

127

management leads to tunnelling and revenue hiding which would leave them vulnerable to unscrupulous share price manipulators and insider traders (Khwaja & Mian, 2002).

In order to ease the fears of foreign investors, the need for small emerging markets to truly reform becomes imperative to survive and sustain any viable economic growth. Therefore, this section describes the development of the capital market and the areas of reform. Firstly, it presents the formation of the AFM and the major developments that gave birth to the ASE and the regulatory security exchange commissions. Secondly, it lists the institutional, structural and legal reforms required for good capital markets. Thirdly, it discusses the thrust for privatisation, a process that when completed would create a more investor friendly environment where the large percentage of equity ownership rests in private hands as opposed to an overwhelming government presence. While productive efficiency would improve, corporate management compliance issues remain a concern that only oversight and self-regulation may solve. Only in an atmosphere of fair play and easing of restrictions will foreign financiers enter the ASE. Fourthly, within this framework, the performance of the AFM/ASE since inception is shown with an analysis of current trends for signs of increased growth prospects.

4.4.1 AMMAN STOCK EXCHANGE

Before The Hashemite Kingdom of Jordan even existed, public companies were trading their shares in the Transjordan. The first public shareholding firm to trade was the Arab Bank in 1930 which still trades today. Other companies began to trade such as Jordan Tobacco and Cigarettes in 1931, Jordan Electric Power in 1938, Jordan Cement Factories in 1951 (ASE, 2012) until more firms were publicly traded in a growing but unorganised securities market. By the 1970s, private sector growth in the economy had increased substantially and warranted the formation of an official securities market. This prompted the government to establish a formal market to regulate issuance of and dealing in securities in order to ensure safe trading practices to protect investors among other concerns. With the help of the World Bank, the Temporary Law No. 31 was issued in 1976

establishing the AFM. Operations in the AFM started in 1978 in accordance to the Temporary Law, gave the AFM a "dual task, the role of Securities and Exchange Commission and the role of a traditional stock exchange" (ASE, 2012). The Law set the objectives of the AFM as illustrated in Figure 4.29.

To mobilize savings by encouraging investment in securities; thereby channelling savings to serve the interests of the national economy.

To regulate issuance of and dealing in securities in a manner that would ensure the soundness, ease & speed of transactions to safeguard national financial interests & to protect small investors.

To provide the necessary data & statistics to achieve the AFM objectives.

Figure 4.29: Objectives of the AFM
Source: (ASE, 2012).

During the 1990s, as part of the IMF structural reform prescriptions, the Jordanian government set out to reorganize its capital market. Specifically the government needed to "make institutional changes in the capital market, use of international electronic trading, settlement and clearance systems, eliminate obstacles to investment, and strengthen capital market supervision to reach optimum transparency and safe trading in securities, in line with globalization and openness to the external world" (ASE, 2012).

In 1996, the enactment of the Temporary Securities Law No. 23, later replaced by the Securities Law No. 76 of 2002, in effect, created a new securities market and two supporting institutions to replace the AFM. The aim was to separate the supervisory roles from the executive roles with different organizational bodies. Thus, Articles 6, 23, and 29 of the Securities Law No. 23 declared three

institutions: the Jordan Securities Commission (JSC), the ASE and the Securities Depository Centre (SDC) which all began officially in 1999. Both the JSC and SDC are autonomous bodies but the JSC is directly responsible to the Prime Minister while the SDC is managed by private sector (ASE, 2012). The SDC oversees the settlements of securities, custody and ownership investors' records on the ASE while the JSC has monitoring, regulatory powers over the SDC and ASE. and enforcement powers over regulation breaches, trading abuses or misconduct. The ASE is a private sector, non-profit organization with legal and financial independence. It is the only authorized entity allowed to operate as a formal market for trading securities in the Kingdom. The law defined financial securities to include: shares, bonds, investment funds, options, future contracts; purchase and sale options contracts and any other local or foreign generally accepted financial securities approved by the securities commission (ASE, 2012). The ASE is governed by a seven-member board of directors (BOD). The executive management is headed by a chief executive officer who manages the day-to-day running of the exchange and reports to the board. The ASE has 65 licensed broker-members and "is an active member of the Union of Arab Stock Exchanges, Federation of Euro-Asian Stock Exchanges, a full member of the World Federation of Exchanges and an affiliate member of the International Organization for Securities Commissions" (ASE, 2012). Article 7 sets the ASE's objectives as regulating and monitoring the issuance of and dealing in securities, regulating and monitoring the activities and operations of those organisations falling under its supervision, and regulating and supervising the disclosure of information related to securities, issuers, insider trading, and major shareholders and investors in securities. Furthermore, "the ASE is committed to the principles of fairness, transparency, efficiency, and liquidity and seeks to provide a strong and secure environment for its listed securities while protecting and guaranteeing the rights of its investors" (ASE, 2012). To ensure fulfilment of these goals, the Jordanian government instituted several wide ranging reforms that included structural reforms of the capital market, legal and regulatory reforms to ensure transparency and fairness and a privatisation program to foster foreign and domestic investment. Article 3 of the Securities Law sets forth the organizational structure of the ASE as illustrated in Figure 4.30.
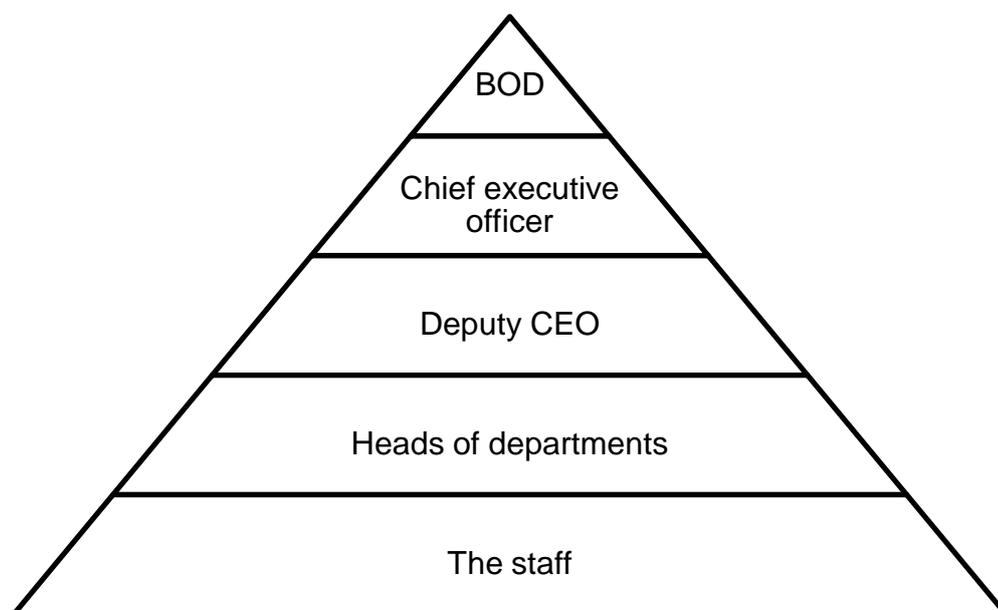
Figure 4.30: ASE's organizational structure

The ASE must publicly disclose the names of issuers of securities, suspended issuers, broker members, trading activity and financial statements of members with immediate disclosure of any information that would affect a security's price. Disclosure and data dissemination are provided through circulars or through its website in Arabic and English. All trades go through broker members. Modern trading systems are available, such as an electronic trading system, remote trading and internet trading provided by brokers. This has facilitated trading for brokers and investors who have only 3 hours to make trades per day. The cost of each transaction is between .0054-.0074 of the value traded for the shares. The equity market is open for 3 hours daily from Sunday-Thursday where broker members can trade between 10am-1pm.

The capital market is comprised of the secondary market which is divided into market segments: the equity market, the bond market and the transactions off the trading floor. The ASE has a two-tier equity market: the first and second markets. The first market lists issuers that meet strict financial requirements whereas the second market lists primary issues and/or issuers that meet less stringent listing requirements. The bond market is for trading of development bonds and corporate bonds. Transactions off the trading floor are for trading of inter-family and inheritance transactions (ASE, 2012). In addition, the equity market is composed

of four major industry classifications: banking, insurance, services and industrial sectors. Figure 4.31 illustrates the organization of the secondary market for securities listed on the ASE.

ASE: Secondary market
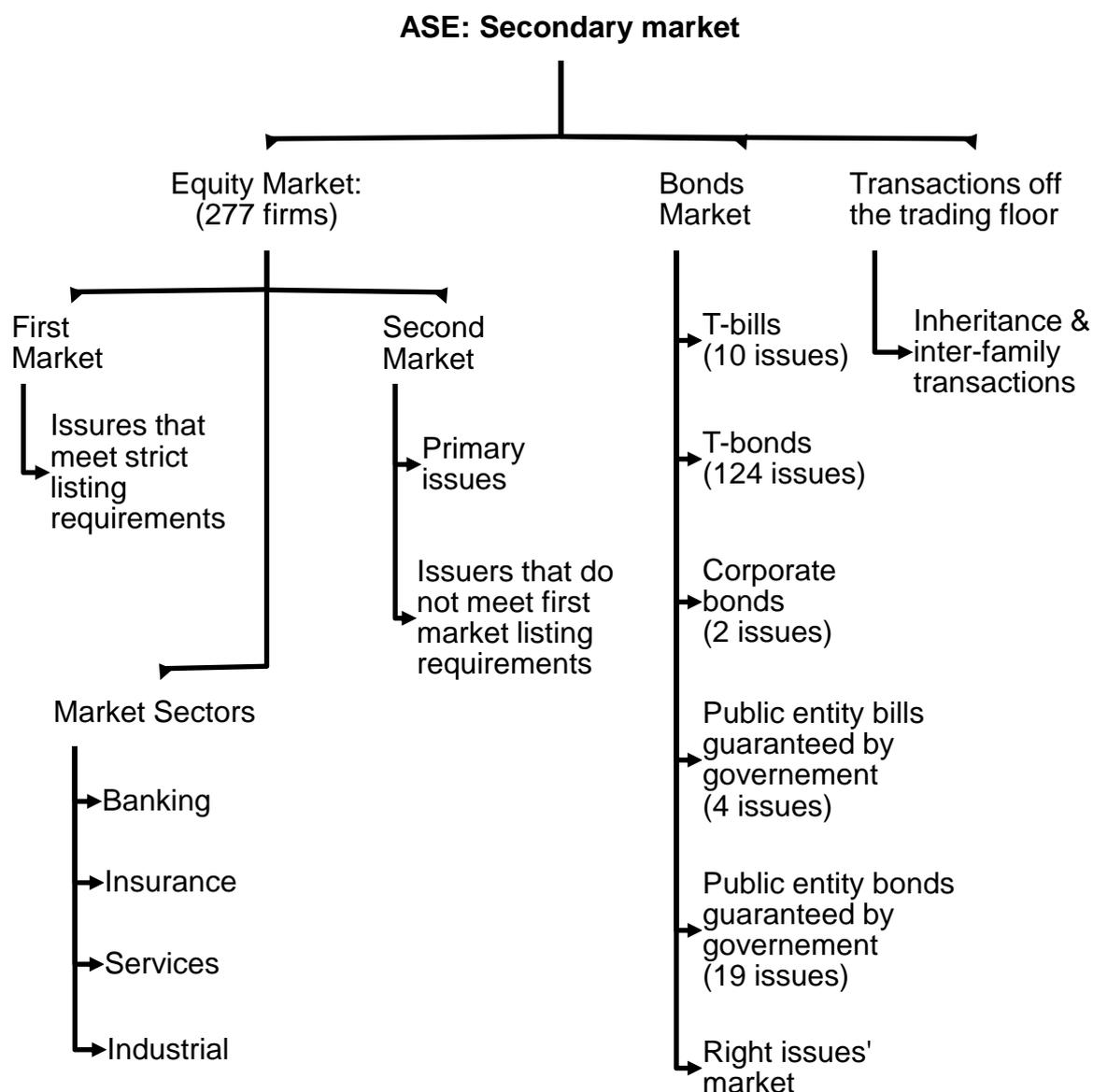
Figure 4.31: Capital market profile of the ASE during 2011
Source: Figure adapted from (ASE, 2012).

4.4.2 FINANCIAL INVESTMENT COMMUNITY

The financial investment community in Jordan is composed of two types, natural individual and institutional legal entities. Figure 4.32 illustrates all the investor categories identified by the Securities Depository Center. The financial investment

132

community includes: individuals, companies, governments, municipalities, institutions, funds, associations, organizations, waqf (charitable trust), and religious sects. The ASE has approximately 800,000 shareholders, almost half of the shares are held by Arab and foreign investors, 43.5% are held by Jordanian corporate and individual investors and 6.9% by the government through the Jordan Investment Corporation (ASE, 2012).
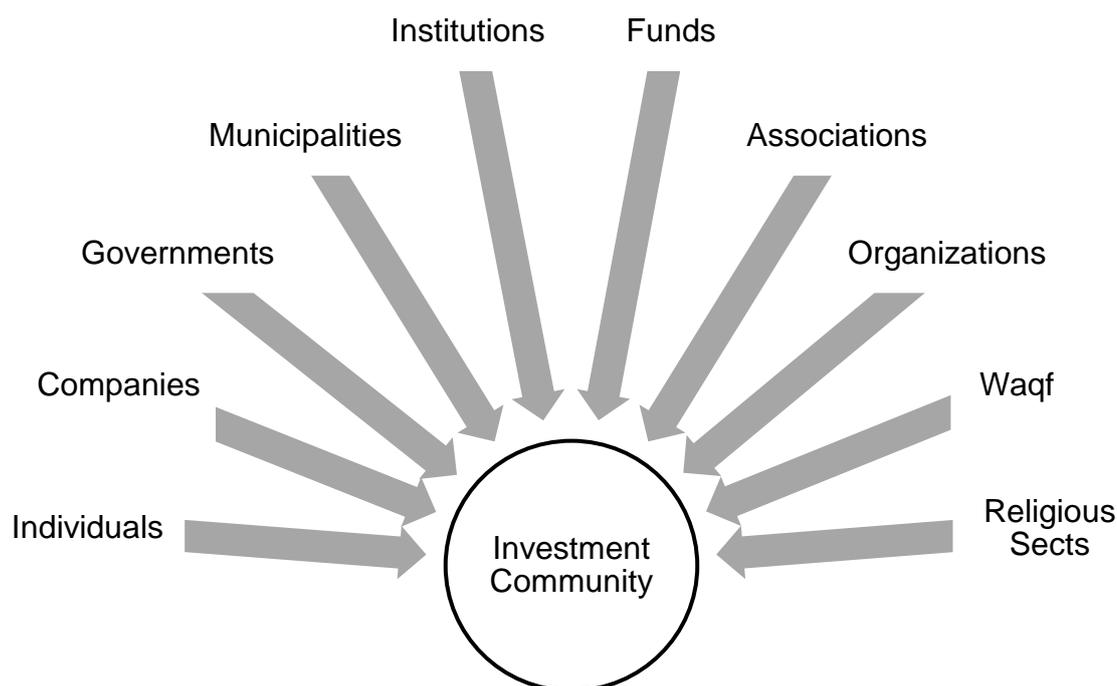
Figure 4.32: Investor profile of the ASE during 2011
Source: Figure adapted from (SDC, 2012).

In order to enhance the investment climate in Jordan a privatisation program was needed to increase the efficiency of the allocation of the nation's resources, to increase saving and give the foreign and domestic investors a greater share in the ownership of equity capital of the ASE.

4.4.3   PRIVATISATION PROGRAM

In order to increase domestic and foreign investment, the IMF recommended decreasing the public sector's share of GDP by reducing the governments' share of ownership in publicly held companies (World Bank Group, 2012). As a result, the government started the process of privatisation to reduce the share of public

sector ownership of main service and industrial institutions. During the period 1982-1990, the government's share averaged 54.8% (King Hussein Website, 2007). The aim was to reduce monopolistic concentration and increase the productivity and efficiency in the allocation of resources in the national economy. Figure 4.33 illustrates the multi-purpose plan of the privatisation program as detailed by the Jordanian government.

Objectives of privatisation in Jordan

- Optimizing project efficiency, productivity and competitiveness by activating the forces of the market and eliminating economic imbalances and distortions.

- Mobilizing domestic savings and attracting more private domestic, Arab and foreign investments by opening up the markets and abolishing state monopoly.

- Stemming the flow of public funds by way of assistance or loans to private projects, in order to alleviate the financial burden of the Treasury.

- Reducing the need to turn to external lending for the purposes of covering the deficit of existing projects or financing of new projects.

- Deepening the local capital market and directing private savings to long-term investments.

- Facilitating access to technology and modern management techniques much needed to foster competitiveness on the global markets and access to new and stable markets.

Figure 4.33: Objectives of privatisation program in Jordan
Source: (ASE, 2012).

In 1990 the government owned a 60% share in firms listed on the ASE and it suffered from bureaucratic inefficiencies and abuse of public funds (ASE, 2012).

The government needed to divest its majority stake in the ASE into the private sector. Since then, a major part of the privatisation process has been completed with some areas remaining. The government currently owns 6% of the shares in the firms listed on the ASE (ASE, 2012). The Executive Privatization Unit was established in 1996 to supervise the process and in 2000 the Privatization Law No. 25 was promulgated to regulate the implementation of privatisation projects under transparency and control (ASE, 2012).

Although the country's privatisation program has generated positive gains, the Jordanian government has implemented the program slower than projected and it still owns considerable portions of state-owned enterprises, most notably the National Electric Power Company and Jordan Phosphate Mines among others (ASE, 2012). The government could, therefore accelerate its privatisation program in order to use funds to address the most significant challenges such as debt repayment, unemployment and poverty reduction. Additionally, the government will eventually begin to exploit its only fossil fuel resource, oil shale, with proved recoverable reserves of 40 billion tonnes and estimated additional reserves of 20 billion tonnes as reported by the WEC. The Jordanian Ministry of Energy and Mineral Resources has encouraged domestic and foreign private investment with projects that include power generation, refining capacity expansion, oil and gas exploration and production and, investment for exploiting renewable sources of energy (World Energy Council, 2011). On the expenditure side, Jordan needs to reduce current outlays by containing the wage bill and unproductive spending, and increase the efficiency of health and education provision (IMF, 2005, p. 15).

4.4.4 LEGISLATIVE AND REGULATORY REFORMS

The Securities Law No. 76 and subsequent amendments set out several provisions to regulate the administration of the ASE. These include: the Internal By-Law, Administrative Internal By-Law, Listing Securities Directives, Trading Directives, Directives for Internet Trading, Disclosure Directives, By-Laws for

Fees, Charges and Commissions, Dispute Resolution Directives and the Code of Ethics (ASE, 2012). A Corporate Governance Code for shareholding companies of the ASE was prepared based on Jordanian laws, the Securities Law and the Companies Law, and on the international principles established by the OECD. The Corporate Governance Code is meant to be sufficiently flexible for companies to adhere to. "The application of these rules would initially be through 'compliance or explain' approach, which means that companies must comply with the rules of the guide, and in case of noncompliance with any of these rules, other than those based on a legal provision that is binding under responsibility, it would be necessary to explain clearly the reason for noncompliance in the company's annual report" (Jordan Securities Commission, 2011). Therefore, companies are allowed to deviate from applying the rules as long as they disclose the noncompliance.

In order to provide the confidence needed to attract foreign investment as well as domestic investment, the Jordanian authorities have passed a series of investment inducing laws to support development strategies and policies. "Enforcement of clear and effective laws and regulations will be crucial for transforming sustainable development strategies and policies into action" (ASE, 2012). Table 4.3 below lists the Jordanian legislative package to foster a more efficient and transparent business environment.

Furthermore, the government has recently cancelled all customs duties on nearly 500 capital imports and has taken steps to improve competition for national industries in international markets.

Table 4.3: Regulatory reforms to promote investment

The Income Tax Law No 28, 2009	Tax rate for individuals for income over 1000JDs. companies pay 24% of taxable income.
Law of Development and Free Zones No.2, 2008	Aimed at the development areas and free zones to promote the economic capacity in Jordan & to attract investments & create investment environment for economic activities.
Anti-Corruption Commission Act No. 62, 2006	Fight against corruption: financial & administrative corruption, nepotism, cronyism, public funds abuse, abused of power
Competition Law (Antitrust) No 33, 2004	Encourage competition & regulate issues related to entry barriers to trade and to prohibit anti-competition practices, price-setting, collusion, monopolistic behaviour of market leaders.
Investment Law No. 68, 2003	Provides domestic & foreign investors with investment incentives & tax exemptions ranging from 25-75% "tax holiday" of 10 years. Allows non-Jordanians to entirely own & operate any project in Jordan with the exception of 3 sectors: construction contracting, trade & trade services & mining.
Law Regulating the Legal Profession of Accounting No 73, 2003	Aims to upgrade & organize profession, to ensure compliance with the standards of accounting & auditing standards adopted
Law Chambers of Commerce No. 70, 2003	Aims to develop policy, planning and strategy for trade and coordinate between business and trade unions. Look after the interests of small businesses.
Law of Statistics No. 8, 2003	Aims to organize the collection, classification, storage, analysis & dissemination of official statistics, including surveys in the areas of social, demographic, economic, agricultural, environmental, cultural &to conduct a census every ten years
Securities Law No. 76, 2002 and 2004	Superseded the 1997 Securities Law that created the ASE and set out regulatory provisions for the ASE.
The Companies Law 1997	Amends previous law to simplify company registration requirements, to eliminate duplicating license requirements, and to improve corporate governance and finance.
The Customs Law 1998	Consistent with WTO requirements for invoice-based valuation of goods combined with a post-auditing system. Delivery of goods and services are enhanced via efficient techniques that reduce costs to importers and exporters.
Privatization Law No.25, 2000	Regulates privatization process to enable its implementation, in with transparent and clear implementation procedures subject to government control.
Insurance Regulatory Act 1999	Creates a new independent insurance supervisory agency and adopt European Union solvency margins.
Secured Financing and Leasing Law	A proposed law that allows lease financing and asset-backed lending using movable property as collateral.

Source: (Legal and Opinion Bureau, 2011).

4.4.5 Trading performance of the ASE

Since 1978, the ASE has had enormous growth. Trading "rose from JD286 million in 1978 to JD6.7 billion in 2010; market capitalization (MC) of subscribed shares is currently around JD22 billion, as compared to around JD286 million by the end of 1978; and the number of listed companies went up from 66 in 1978 to 277 at present" (ASE, 2012). This represents a growth of 320% in the number of listed companies and a growth of 2,243% in MC.

In 1992 the AFM began to calculate a Market Capitalization Price Index for 50 shares of firms then increased to 60 in 1994 and to 70 firms in 2001 from companies listed in the first and second markets. ASE indices are calculated using the latest closing prices and published on a daily basis. The selection of these companies is based on the following five criteria, which represent the companies' size and liquidity: MC, days traded, turnover ratio, value traded and the number of shares traded. A base value of 1000 points as of 1991 was stipulated for the Weighted Price Index (WPI). Figures 4.34-4.37 illustrate the trend for the number of companies in the ASE, the WPI, the MC and the MC in percent of GDP, the average trading volume, the percentage of foreign investment and the P/E and P/B ratios during the period 1978-2010.

The total number of listed companies grew by 320% from 1978 to 2010. The average growth for the pre-IAS/IFRS period (1982-89) was 23%, for the IAS period (1991-2001) was 70%, for the IFRS period (2002-2009) was 72% and for the global financial crisis period (2008-2009) was 5.7%. Statistics indicate that the period with the greatest growth in the number of firms on the ASE was the IFRS period. Figure 4.34 illustrates the growth trend in the number of companies listed on the ASE since 1978.
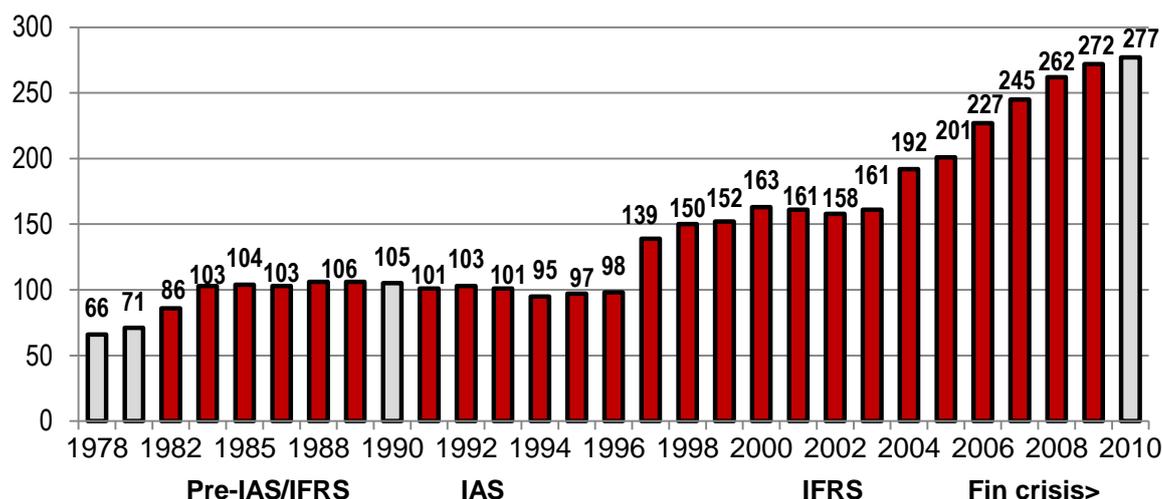
Figure 4.34: Trend in number of listed firms on the ASE, 1978-2010
Source: Adapted from (ASE, 2012).

The total average WPI increased from 585.6 in 1978 to 5318 in 2010 which represents an increase in growth of 808%. Figure 4.35 illustrates the average WPI and percent change in WPI during 1978-2010. The average WPI growth for the pre-IAS/IFRS period was negative and fell by (-48%). During the IAS period, the WPI grew 727% and by 225% during the IFRS period. However, the WPI fell during the global financial crisis period by 17%. The period that reflected the most significant WPI growth was during the IAS period. Figure 4.35 illustrates the average WPI for the ASE during the period 1978-2009.
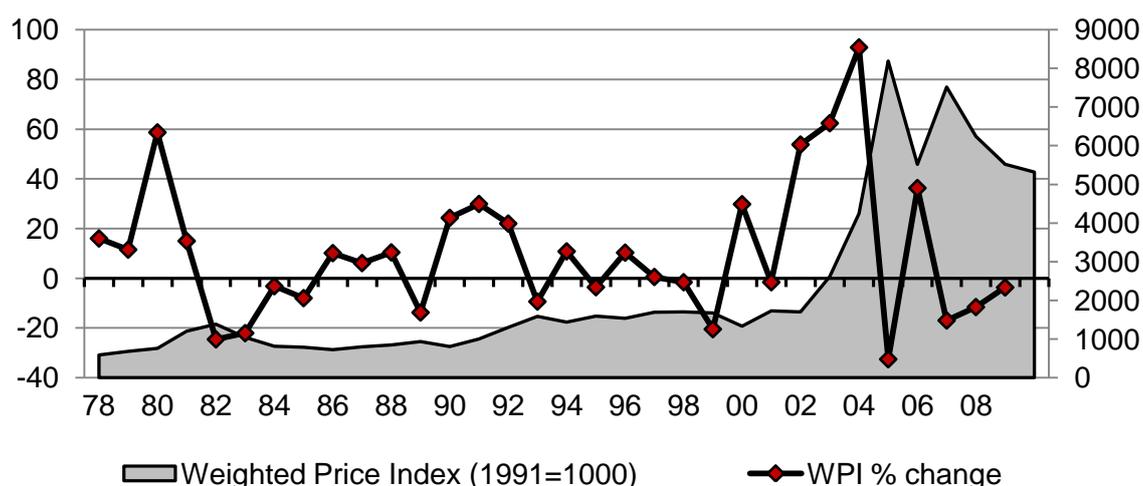
Figure 4.35: Average Weighted Price Index on the ASE, 1978-2010
Source: Adapted from (ASE, 2012).

The average MC increased from JD286 million for 1978 to JD21,858 million for 2010, which reflects a growth of 754%. The average MC growth for the pre-IAS/IFRS period was 35%. MC growth during the IAS period was 162%, 348% during the IFRS period and was 14% during the financial crisis period. The IFRS period had the greatest growth in MC.

The average annual trading volume for the total period 1978-2010 was 1,086 million shares and volume grew by 2,916%. During the pre-IAS/IFRS period, trading volume averaged 80 million shares and volume grew by 327%. Trading volume averaged 234 million shares and volume grew by 110% during the IAS period. During the IFRS period, trading volume averaged 3180 million share and grew by 1,204%. Trading volume averaged 6155 million shares and grew by 28.6% during the global financial crisis period. Trading volume increased the greatest during the IFRS period. Figure 4.36 illustrates the MC and percent change in MC and the average annual trading volume and percent change in trading volume.
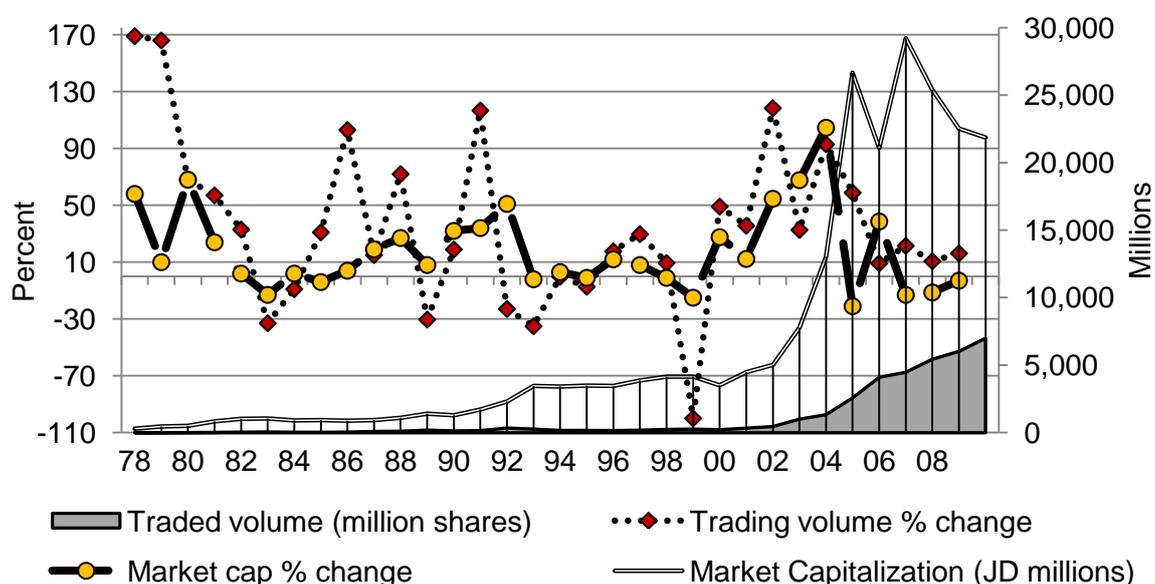
Figure 4.36: Market capitalisation & average trading volume, 1978-2010
Source: Adapted from (ASE, 2012).

The MC as a percent of GDP grew from 37% in 1988% to 112% of GDP in 2010 or a total increase in growth of 203%. During the IAS period MC as a percent of

GDP grew by 91% and during the IFRS period grew by 72%. However, in 2005, MC was 300% of GDP. During the global financial crisis MC decreased by 30%. The total value of shares traded on the ASE closely reflects the MC figures. Figure 4.37 illustrates the MC and total value of shares traded as a percent of GDP.
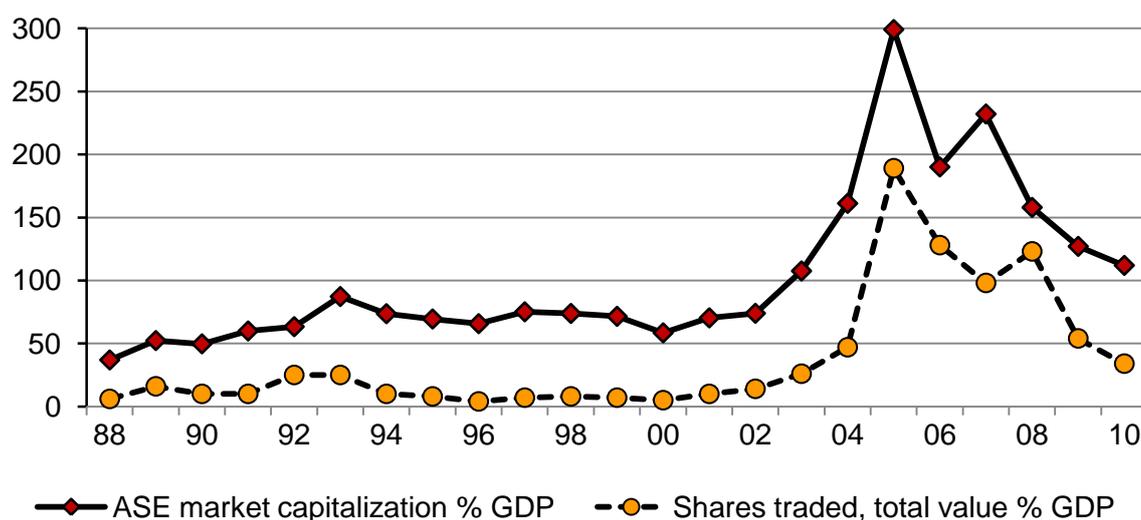
Figure 4.37: Market capitalisation & value shares traded (% GDP), 1988-2010
Source: Adapted from (ASE, 2012).

A major potential source of capital inflows for the economy is from foreign investment which has been steadily increasing since 1990. The total percent of non-Jordanian ownership of the ASE equity market grew by 174% between 1990-2010. The average non-Jordanian investment growth during the IAS period was 24%, during the IFRS period it was 31% and 8% during the financial crisis period. The period with the greatest growth in non-Jordanian percent of investment was during the IFRS period. Figure 4.38 illustrates the percentage of non-Jordanian ownership for all companies in the ASE during the period 1990-2010.

The percent of foreign ownership for each major sector during the period 1994-2009 is illustrated in Figure 4.39. The banking sector has the highest percentage with an average 52% foreign ownership of shares. The percent of foreign investors has more than doubled for the industrial sector since 1994 from 24% to 52% in 2009 and averages 34% for the period. The services sector averages 26% and the insurance sector averages 17% foreign ownership for the period.
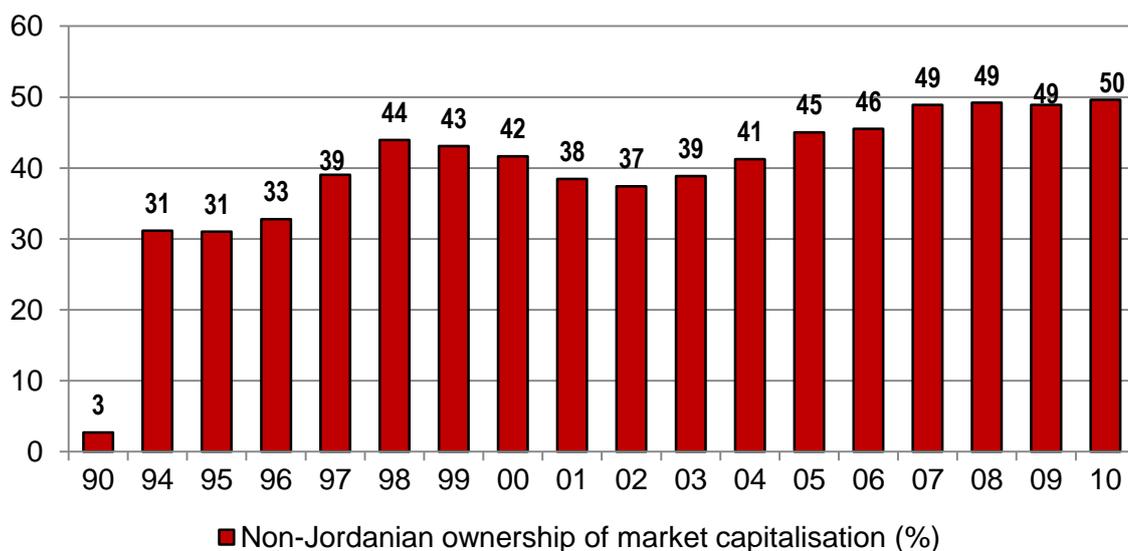
Figure 4.38: Average percentage of foreign investment in the ASE, 1990-2010
Source: Adapted from (Securities Depository Center, 2012).

Percentage of non-Jordanian ownership in firms listed on the ASE by sector
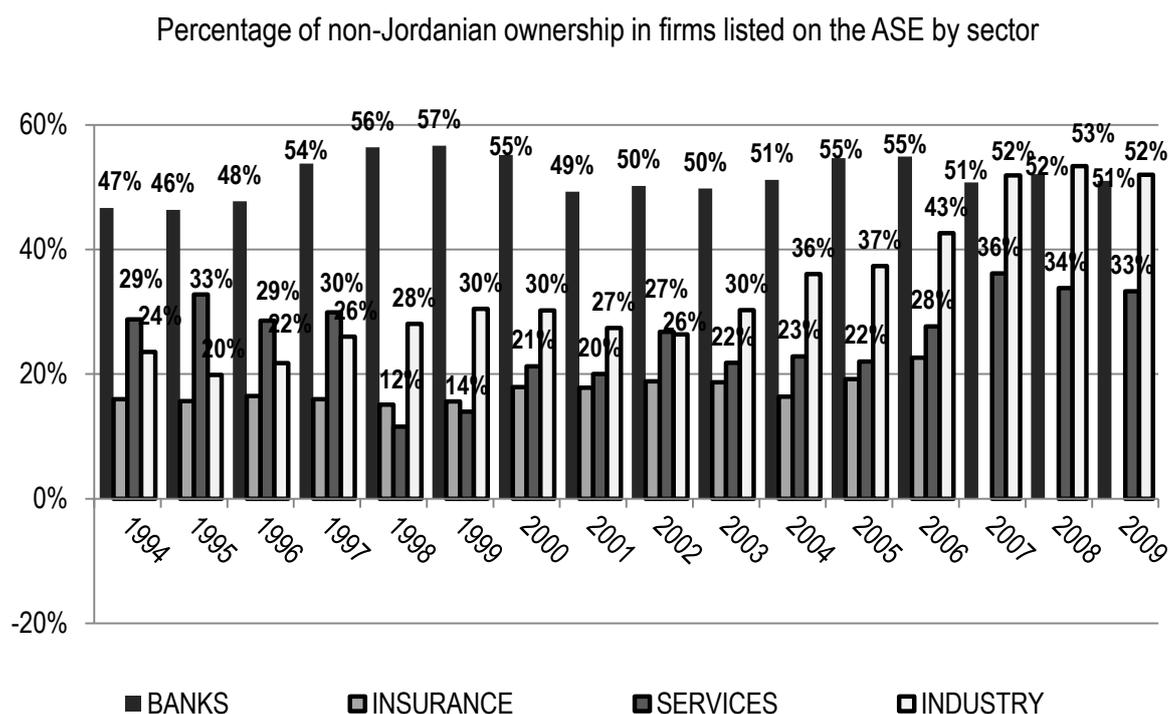
Figure 4.39: Percentage of non-Jordanian ownership by sector, 1994-2009
Source: Adapted from (ASE, 2012).

Table 4.4 present the statistical data for selected statistics of the ASE during the period 1978-2010. Not all data is available for the entire period.

Table 4.4: ASE main indicators and selected financial data, 1978-2010

Year	Number of listed firms	Weighted Price Index (1991=100)	Market capitalisation (JD million)	Market capitalisation as % of GDP	Non-Jordanian ownership of market capitalisation (%)	Trading volume (million shares)	P/E ratio (times)	P/B (times)
1978	66	585.6	286.1			2,429	10.8	1.2
1979		679.3	452.3			6,535	12.4	1.4
1980	71	757.5	495.5			17,398	11.1	1.3
1981		1201.8	834.6			29,231	15.8	1.8
1982	86	1382.5	1,034.80			45,839	17.0	1.7
1983		1042.1	1,053.40			61,139	20.9	1.6
1984	103	811.8	911.7			40,819	25.5	1.3
1985	104	786	926.9			37,298	18.7	1.7
1986	103	723.5	891.8			48,898	14.6	1.2
1987		796.9	929.4			99,130	15.2	1.2
1988	106	845.1	1,104.70			113,793	12.0	1.3
1989	106	932.7	1,400.40			195,620	7.2	1.5
1990	105	804.3	1,293.20			136,054	7.3	1.2
1991	101	1000	1,707.10			161,777	11.1	1.4
1992	103	1299	2,295.60			350,650	14.8	1.6
1993	101	1585	3,463.90			270,439	24.1	2.2
1994	95	1436.0	3,409.30		31.148	175,476	19.5	1.9
1995	97	1591.7	3,495.40		31.048	175,205	17.6	1.7
1996	98	1534.6	3,461.20		32.795	162,489	17.5	1.7
1997	139	1692.4	3,862.00	74.4	39.059	191,064	14.3	1.6
1998	150	1701.3	4,156.60	73.6	43.931	247,857	16.3	1.6
1999	152	1673.5	4,137.70	72.3	43.099	271,109	14.3	1.4
2000	163	1330.5	3,509.60	58.4	41.672	228.4	14.8	1.1
2001	161	1727.2	4,476.70	75.7	38.474	340.6	15.3	1.4
2002	158	1700.2	5029.0	80.4	37.429	461.8	13.0	1.2
2003	161	2615.0	7772.8	116.8	38.844	1008.6	21.7	1.9
2004	192	4245.6	13033.8	184.7	41.264	1338.7	31.1	2.7
2005	201	8191.5	26667.1	326.6	45.043	2582.6	44.2	3.2
2006	227	5518.1	21078.2	233.9	45.531	4104.3	16.7	2.9
2007	245	7519.3	29214.2	289.0	48.9	4479.4	28.0	3.0
2008	262	6243.1	25406.3	216.7	49.2	5442.3	18.8	2.2
2009	272	5520.1	22526.9	149.6	48.9	6022.5	14.4	1.8
2010	277	5318.0	21858.2	122.7	49.6	6999.8	26.3	1.7

Source: (ASE, 2012).

4.5   DEVELOPMENT OF THE ACCOUNTING AND AUDITING PROFESSION

The need for a relevant and faithfully represented accounting system is crucial for users of externally reported financial statements. It is the responsibility of the accounting and auditing profession to deliver and implement such a system if it is to earn the respect and confidence of all who use externally reported financial information, including foreign or domestic investors, both private and governmental. Unfortunately, rampant misconduct permeates this discipline. Many emerging markets and even developed markets, such as the US market, are marred by infamous accounting scandals, i.e. Enron 2001, Tyco 2002, Parmalat 2003, Bernard Madoff 2008 and Lehman Brothers 2010, among others. During the past three decades, Jordan has witnessed major banking scandals that destabilized the financial system. This does little to promote trust among users of financial accounting information. Therefore, all economies regardless of their stage of development must depend on the accounting and auditing profession to report verifiably accurate and reliable financial information in order to transact with full confidence and foster the proper investment environment.

The accounting and auditing profession in Jordan was officially recognized in 1961 when the first public accounting and auditing law was issued. Prior to 1961, the country's economy was rudimentary and mainly composed of agricultural business trade. Commerce was limited and mainly linked to Palestine and Syria. Modern communications were virtually non-existent and roads were mostly primitive. The only law that existed before 1961 was the Palestine Company Law of 1929 that was derived from British law. There were very few auditing establishments in existence and they were practising auditing without any laws or governmental regulations.

The 1961 law was very limited in scope. It focused on regulating the accounting and auditing profession but it did not establish any accounting or auditing standards to guide professionals in practising accounting or auditing. The law regulated entry into the auditing profession and restricted unethical or illegal behaviour. In 1964, another law was issued, the Company Law No. 12, requiring obligatory audits by all corporations. This law, likewise, determined the relationship between auditors and third parties. However, it fell short in providing

the badly needed auditing and accounting standards for Jordan's accounting and auditing profession. A Jordanian board of accountancy was established with the main responsibilities of issuing licences to practice accounting and with the power to take disciplinary actions for illegal or unethical conduct.

The loss of the West Bank to Israel in 1967 resulted in a severe jolt to the emerging kingdom and its economy. Nevertheless, the country was able to make a speedy adjustment to this devastating loss and continue its economic development. During the 1970s and the 1980s, Jordan's population (now only the East Bank) was 12 times the GDP. All sectors of the economy and society witnessed significant advances and changes that brought Jordan closer to modern times.

In 1985, due to the great economic growth spurts and increase in the private sector, a new law, the Public Accountant Profession Law No. 32, was passed that allowed the establishment of the Jordanian Association of Auditors (JAA) (Legal and Opinion Bureau, 2011). This law superseded the 1961 law. In 1987, in accordance with the Law No. 32, the Jordanian Association of Certified Public Accountants (JACPA) was born through the promulgation of Law No. 42 (Legal and Opinion Bureau, 2011). A 12-member high council was also established to regulate the accounting and auditing profession. The council was given the power to issue new licenses to auditors and impose disciplinary action against any unethical conduct. The law also established the minimum educational requirement for entry into the accounting and auditing profession to be a university degree. Furthermore, any person wanting to practice public accounting had to pass a written examination established by the 12 council members. The council members would define the content of the examination. However, the task of developing accounting and auditing standards and rules of conduct was given to the JAA. The Jordanian board of accountancy has issued more than500 licences to public accountants during its 26 years of existence (JACPA, 2012).

Prior to 1988, Jordanian accountants usually applied Generally Accepted Accounting Principles (GAAP). However, GAAP was not uniformly applied as some accountants implemented British standards, some used American

standards and others just applied skills learnt during their university education, in addition to compliance with the regulations of the Companies Law and local tax law requirements. As a result, the information produced was not comparable across firms or across industries (Al-Rai & Dahmash, 1998, p. 180).

Before 1990, Jordan did not have a well-defined or a consistent set of external accounting standards to be applied by publicly listed companies. This implies that there was no association between accounting information and share market valuation. Given the role of the accounting discipline which is the production and dissemination of relevant and reliable and therefore useful information to economic decision makers, it can be concluded in the case of Jordan that until 1990, in effect, Jordan's accounting profession lacked the proper structure to be efficient enough to achieve the goals of accounting which is the production of useful financial information to investors.

Therefore, the information content from the statements prepared by the Jordanian accounting profession was neither reliable nor a relevant source of financial information for investors to make efficient investment decisions. The lack of usefulness of financial information to investors did not provide the necessary support for the development of the Jordanian economy whereby useful financial information is the most powerful investment tool. For the most part, there are two reasons for this inefficiency, firstly, the lack of an enforceable and coherent set of accounting and auditing standards during the 1960s, 1970s, and 1980s, and secondly, the accounting departments at Jordanian universities did not produce well educated graduates in accounting due to the lack of a comprehensive and rigorous curriculum which covers all areas of external financial reporting.

Several factors led to the need for adopting a uniform set of accounting standards in Jordan. The growth of the AFM meant that there were an increased number of domestic and foreign investors that required useful financial information to make investment decisions (Al-Rai & Dahmash, 1998). This required among other factors a comparable set of accounting standards. The soaring external debt and economic crisis during the late 1980s culminated in a major devaluation of the JD against the US dollar. Most accountants were at a loss as to which accounting

standards to follow in treating the foreign exchange losses that resulted from the devaluation. The JACPA recognised the need for adopting uniform accounting and auditing standards to guide the accounting profession in external disclosure requirements as well as to provide users of external financial reports reliable financial information. In 1988, the JACPA convinced the Jordanian government of the urgency for a consistent and unified framework of accounting and auditing standards. In 1990, the Amman Financial Market Law was promulgated and in January 1991 (Legal and Opinion Bureau, 2011), adoption of the IAS and the International Auditing Standards became effective for all Jordanian companies listed on the ASE.

From 1991 to the present, Jordan has adopted the IAS as guidelines for external financial reporting. Therefore, from 1991 onwards, it is assumed that the financial information produced is uniformly applied from international standards. Thus, Jordanian firms can be comparable across firms and across industries due to the application of the same standards, thereby achieving the main objectives of the accounting discipline. It is also assumed that certain accounting procedures are followed such as clean surplus accounting for the period 1991 onwards.

Another milestone for the accounting profession came in 2003 when the Regulatory Law of Chartered Accounting Profession No. 73 was passed with the aim to organize and upgrade the accounting profession (JACPA, 2012). The law also aimed to ensure that accountants complied with the international accounting standards in effect which at this time were the IFRS. It was recognised that compliance with the IFRS would contribute to the national economy. Other aims of Law No. 73 were to maintain the professional knowledge of accountants through annual continuing professional education, to ensure ethical behaviour and to maintain impartiality and independence. To ensure enforcement of the accounting law, a 12-member high commission including the Minister of Industry and Commerce, the Minister of Finance, the Governor of the Central Bank, the Chairman of the Audit Bureau, the Chairman of Commissioners of the Securities Commission, the Director General of the Securities Commission, the Controller General of Companies, the Chairman of the Assembly, someone with experience in accounting, a member of the faculty of any university and 3 certified public

accountants to oversee the regulatory administration of the profession, to conduct examination of accountants, to issue licenses to practice public auditing and to maintain the ethical standards of the profession (JACPA, 2012). An association of chartered accountants was also established to enhance the neutrality and independence of the profession (JACPA, 2012).

4.6   SUMMARY

Chapter 4 presented Jordan's background environment, including the geo-political, socio-demographic and the macroeconomic development. If Jordan is to survive in the new millennium, it must become more and export driven. With the Jordanian economy on the mend for 2012 and a positive outlook near-term, economic growth and the debt burden should competitive improve thus speeding up the government's goal towards fiscal independence and a dynamic market economy that will foster investment and confidence. These are the necessary ingredients to boost a sluggish emerging financial market. The development of the ASE was discussed along with the major restructuring and legal and regulatory reforms. The ASE has modernised and it aims to be in line with major world stock exchanges. The government's privatisation and structural reform programs to open the economy to the private sector and international trade are were also discussed. Relevant data was presented to reveal the market trends of the ASE. The development of the accounting and auditing profession was discussed. To what extent has the accounting profession fulfilled their assumed role in providing relevant, faithfully represented, timely, comparable, understandable and verifiable financial information after 1989? Was the implementation of the IAS/IFRS a rational decision by the Jordanian government? The answer to this question is the subject of a long-standing debate relating to the harmonization of accounting standards. Conclusions of this research may help to determine this. The next section details the methodology, empirical tools and hypothesis which enable the answering of these questions.

Chapter 5 RESEARCH METHODOLOGY

Research as a formal investigative process for the purpose of gaining knowledge can take many shapes depending on the main research question and how the question will be answered. Before an appropriate and suitable research design can be constructed a number of factors need to be considered. Firstly, it is imperative to clarify the purpose for undertaking the research study by stating the main research question, sub-questions, and the objectives of the study. Secondly, it is essential to understand the researcher's philosophy, ontology, epistemology and the research approach that will be adopted because this influences the way the research questions will be addressed and therefore the selection of an appropriate research design (Saunders, et al., 2009). Thirdly, it is important to plan a research design that will explain how the research will be conducted in order to have greater confidence in the findings of the study. Fourthly, the types of data that will be employed in conducting the investigation, whether quantitative or qualitative are crucial in formulating a research design. Lastly, how the data will be accessed, treated and analysed will require suitable research methods and appropriate research techniques that can be explained and justified.

The main purpose of this study is to examine if accounting numbers produced by implementing IAS/IFRS reflect useful information that investors of the ASE use as part of their investment decision-making process. The decision-usefulness of accounting information can be examined by investigating the association of accounting amounts and share market prices (Barth, et al., 2000). Specifically, this can be accomplished by finding the association between accounting amounts such as earnings and book value, and share market prices. This study employs mixed methods to measure and explain the association between accounting

numbers and share market prices. The residual earnings model is employed to test for the usefulness of accounting information produced from the implementation of IAS/IFRS in Jordan. Additionally, two sets of questionnaires were administered to individual and institutional equity investors of the ASE to complement the quantitative research investigation. Furthermore, qualitative research is employed in the form of interviews to members of the ASE and to experts in the accounting profession in Jordan.

This chapter identifies, explains, and validates the research methods employed by the study and includes the justification for each step in the research process. The chapter includes six sections. Section 5.1 describes the research process and the steps taken to complete this study. Section 5.2 discusses the researcher's philosophy and research approach which influences the construction of a suitable research design. Section 5.3 explains the research design and techniques employed in the investigation explaining the choice of research strategies, methods and types of time horizons. Section 5.4 details the methodology for the quantitative research method including the definition of key variables, derivation of theoretical models that form the basis of the study, the construction of the hypotheses and the operational forms of the model to be tested. Included are the sample parameters, measurement procedures, data handling criteria, and the time horizon for the period of study. The section explains the secondary data availability and treatment and the limitations of the quantitative research method. Section 5.5 details the survey research design and strategy, data sources, access and treatment, and the limitations of the survey research method. Section 5.6 describes the qualitative research method and strategy, the data availability and treatment and the limitations of the interview research method. Section 5.7 summarises and concludes the chapter. Figure 5.1 displays the structure of chapter 5.

Chapter 5: Research methodology

⬇

5.1 Research process

⬇

5.2 Research philosophy & research approach

⬇

5.3 Research design and techniques

5.3.1 Research strategies	5.3.2 Research methods
5.3.3 Research choices	5.3.4 Time horizon
5.3.5 Research design for study	

5.4 Quantitative research methodology

5.4.1 Theoretical model	5.4.2 Operational forms for the REM
5.4.3 The variables	5.4.4 Measurement procedures
5.4.5 Hypotheses	5.4.6 Time horizon
5.4.7 Population & sample parameters	5.4.8 Secondary data availability & treatment
5.4.9 Data handling criteria	5.4.10 Limitations of quantitative research

5.5 Survey research methodology

5.5.1 Description of questionnaires	5.5.2 Primary data availability & treatment
5.5.3 Limitations of survey research	

5.6 Qualitative research methodology

5.6.1 Description of interviews	5.5.2 Primary data availability & treatment
5.6.3 Limitations of interview research	

↳ **5.7 Summary**

Figure 5.1: Structure of chapter 5

5.1   RESEARCH PROCESS

In general, research is undertaken to gain knowledge. Research is a systematic, formal, rigorous and precise process employed to gain solutions to problems and/or to discover and interpret new facts and relationships (Waltz & Bausell, 1981, p. 1). The purpose of research is to identify a problem that can be answered in a systematic investigation through analysis and for which appropriate conclusions can be drawn (Royal College of Nursing, 2000). Thus, a research undertaking is a process that organizes and facilitates analysis of a complicated research investigation.

In any research undertaking, it is important to understand the entire research process in order to plan effectively through all the stages of the research. The stages may vary from one research project to another and between researchers and type of research, but most formal research follows a general process. Saunders, Lewis and Thornhill (SLT) (2009) created a flow chart for the research process. This study follows a systematic process similar to the one taken by SLT 2009 in order to examine and assess the research problem stated in the introductory chapter. Specifically, the stages in the research process for the study are illustrated in Figure 5. that includes the relevant chapters for each stage.

The first stage of the research process begins with identification of the research problem, which is a formal statement of the objective of the study and a clarification of what is to be investigated. The main research question is restated from chapter 1 as follows:

> 'Is publicly available accounting information produced by implementing the IAS/IFRS useful to equity investors in the ASE as inputs into their investment decision-making process?'

| **Title** |
| **Decision-usefulness of accounting information to equity investors of firms listed on the Amman Stock Exchange: an empirical investigation** |

1) Formulate & clarify the research topic in its context	chapters 1 & 4

2) Critically review the literature	chapters 2 & 3

3) Understand the research philosophy and approach	chapter 5

4) Formulate the research design	chapter 5

5) Access to the data and ethical issues	chapter 5

6) Plan the data collection & collect data using one or more of :	chapter 5
Sampling	Archival data	Questionnaires	Interviews

7) Analyse the data using:	chapter 6
Quantitative methods	Qualitative methods

8) Conclusions, implications and recommendations	chapter 7

Figure 5.2: The research process for this research study
Source: Adapted from (Saunders, et al., 2009).

For convenience, certain terms in the main research topic were explained previously in chapters 1 and 2 but are provided here briefly. Firstly, '*publicly available*' refers to information that is freely obtainable to the general public; that is, users and non-users of information. '*Accounting information*' are the numbers contained in the financial statements of a company such as the income statement, balance sheet, and cash flow statement as a result of implementation of IAS/IFRS. As discussed in chapter 2, '*useful*' means that the financial information is both relevant and faithfully represented to equity investors and other users of financial statements according to the IFRS Conceptual Framework. The '*investment decision-making process*' is the process investors use to decide whether to buy, sell, or hold assets such as equity securities. Therefore, the

purpose of this research is to investigate whether equity investors of the ASE find financial information that is produced from implementation of IAS/IFRS useful in making their investment decisions.

A major factor in choosing an appropriate research design depends on how the main research question will be answered. In order to answer the main research question more effectively, sub-questions (SQ) were formulated to give focus and direction to the research and to clarify and support the main question. SQs concentrate on areas that are essential to the understanding and development of the study, such as country specific background, prior research methods employed and model specifics, to name a few. Each SQ is answered in specific corresponding chapters with comprehensive research, statistical, and or descriptive analysis as appropriate throughout the progression of the thesis. Figure 5.3 illustrates the overall link between the main research question and the SQs with the relevant chapters where each question is addressed.

MAIN RESEARCH QUESTION

Is publicly available accounting information produced by implementing IAS/IFRS useful to equity investors in the ASE as inputs into their investment decision making process?

1st sub question:	*2nd sub question:*	*3rd sub question:*
Do equity investors in the ASE use the accounting information-based models, REM, P/E and P/B, as inputs into their investment decision-making process?	How have the developments within the ASE and the Jordanian accounting profession influenced the usefulness of accounting information produced from the implementation IAS/IFRS?	What models have been used to examine decision-usefulness of accounting information as a result of implementing IAS/IFRS?
↳ Chapter 6	↳ Chapter 4 & 6	↳ Chapter3 & 6

Figure 5.3: Main research question, sub-questions & corresponding chapters

Research questions provide focus and direction for the researcher to undertake the investigation (Onwuegbuzie & Leech, 2006).The form of the research question is very important because it will indicate which research methods are better suited to answering the questions. The type of research questions will determine which research strategy, approach, methods, data collection and analysis techniques to employ. "Most quantitative questions fall into three categories: (a) descriptive. (b) comparative and (c) relationship (Onwuegbuzie & Leech, 2006, p. 481). Figure 5.4 below displays the three types of quantitative research questions.
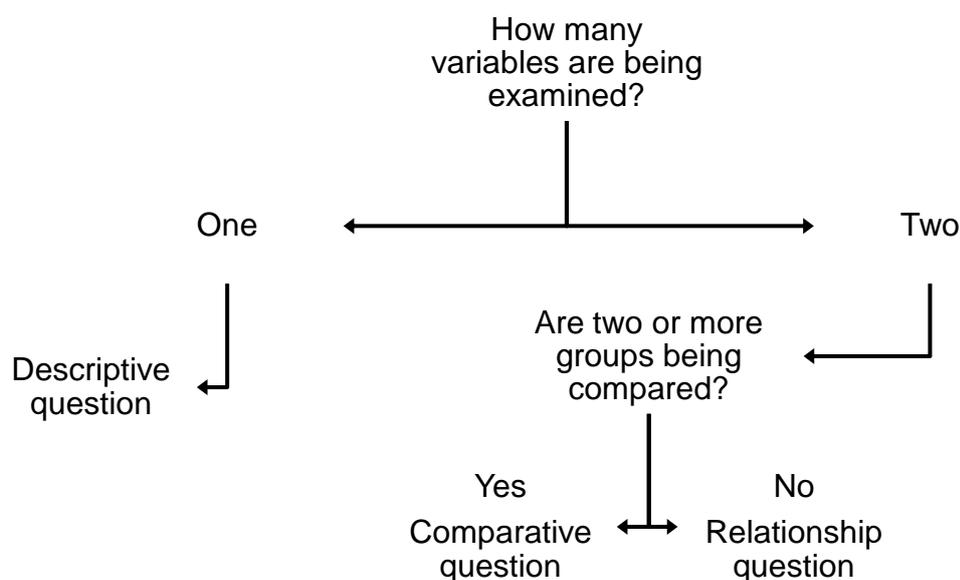
Figure 5.4: Typology of quantitative research questions
Source: (Onwuegbuzie & Leech, 2006, p. 481).

This study examines two variables in order to compare three study groups. Therefore, the main research question and SQ1 take the form of comparative questions. Section 5.4.1 defines and explains the dependent and independent variables being examined in order to answer the main research question.

In contrast, qualitative research questions are non-numerical and tend to address 'what' and 'how' questions" (Onwuegbuzie & Leech, 2006, p. 482). Accordingly, SQ2 and SQ3 are more descriptive questions. However, both quantitative questions and qualitative questions will need to be answered using a different but suitable research design. The fourth stage in the research process will address

which research design and methods are most appropriate to answer the research questions listed in Figure 5.4. This study asks both quantitative and qualitative questions and employs a mixed method of research design to answer them.

SQ1 is presented in Figure 5.5 that illustrates the research methodology, the research strategy and type of data needed to answer both the qualitative and quantitative forms of the question. Full details of the research methodology for SQ1 are discussed in Sections 5.4 and 5.5.

Do equity investors in the ASE use the accounting information-based models, P/E and P/B, as inputs into their investment decision-making process?

METHODOLOGY

Qualitative research

Quantitative research

Interviews & Questionnaires*

Cross-sectional Questionnaires*

Longitudinal analysis

Primary data collected from *open ended* questions administered to individual & institutional equity investors of the ASE

Primary data collected from *closed ended* questions administered to individual & institutional equity investors of the ASE

Parametric statistics of secondary data collected from the ASE during the period from 1980-2009

Primary data from interviews to members of the accounting profession in Jordan

Non parametric statistics

ASE annual data of historical year end closing share prices & selected accounting data

Qualitative descriptive analysis

Inferential statistics: hypotheses testing of variables: share price and market-based ratios

Figure 5.5: First sub-question for the study
*The questionnaires are the same.

156

SQ2 is addressed with quantitative and qualitative research methods. The quantitative method employs parametric and non-parametric statistics to examine the data and analyse the results. The qualitative method uses descriptive analysis to address the question. Figure 5.6 illustrates the research methodology, the research strategy and type of data needed to answer SQ2.
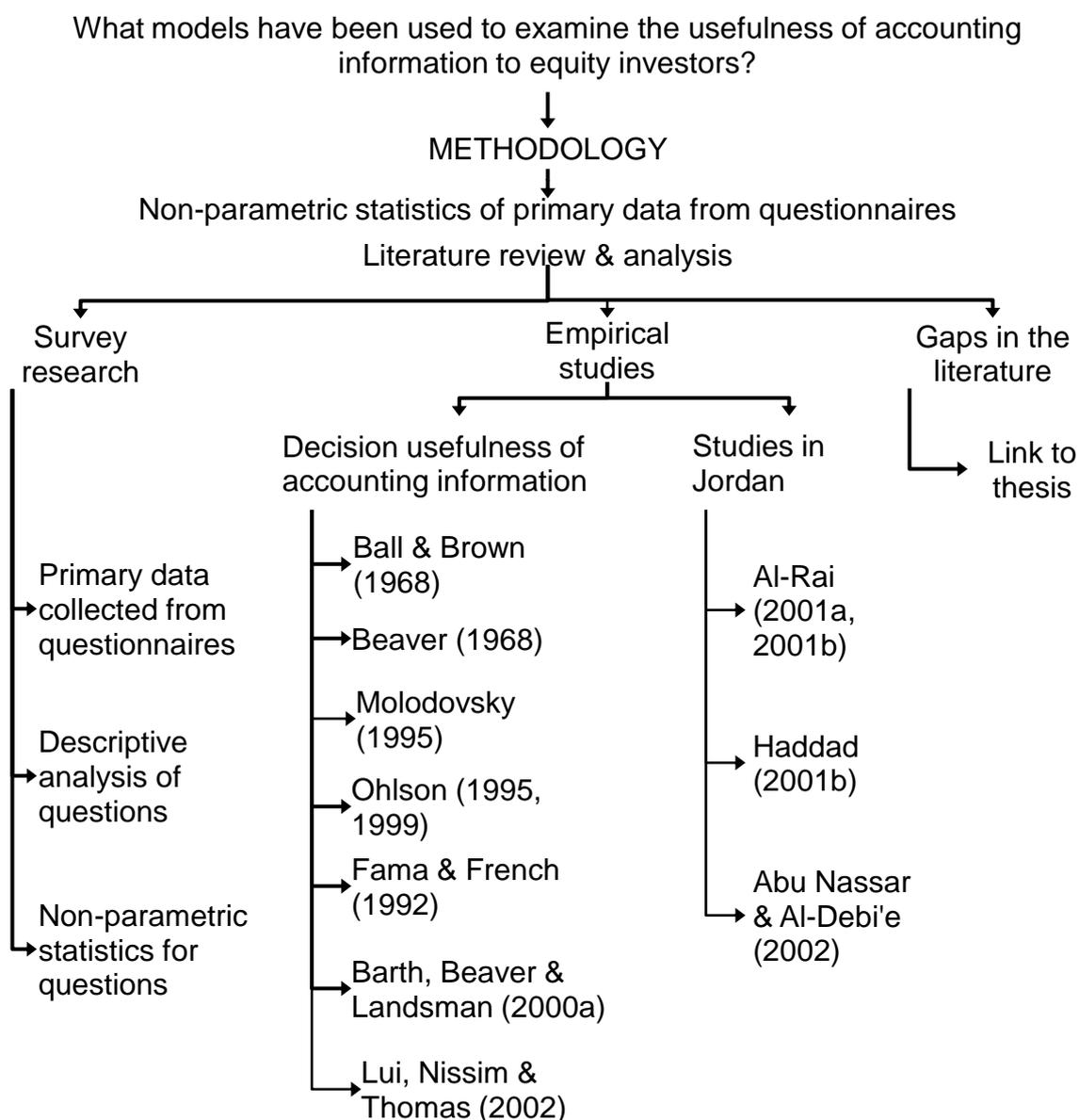
Figure 5.6: Second sub-question for the study

Qualitative data is needed to answer SQ3; therefore, descriptive analysis is used to address the question. Figure 5.7 illustrates the research methodology, the research strategy and type of data needed to answer SQ3. Descriptive analysis

from chapter 4 that discussed the developments within the ASE and the accounting profession are used to answer SQ3. Also, section 5.5 contains the details of the research methodology for this sub-question.

How have the developments within the ASE & the Jordanian accounting profession influenced the decision-usefulness of accounting information produced by implementing IAS/IFRS?

↓

METHODOLOGY

↓

Descriptive analysis of environmental influences
Qualitative analysis of primary data collected from questionnaires
Qualitative analysis of primary data gathered from interviews

Qualitative research

- Interviews
  - ASE member
  - Accounting profession
  - Primary data from open-ended questions
- Questionnaires
  - Institutional investors
  - Primary data from open-ended questions

Amman Stock Exchange

- Development of ASE
- Legislative & regulatory reforms
- Influence on decision-useful accounting information

Accounting profession

- Development of accounting profession
- Implementation of IAS/IFRS
- Influence on decision-useful accounting information

Figure 5.7: Third sub-question for the study

The second stage in this research is to critically review the prior literature and identify gaps in the research that will contribute to knowledge. Primarily, capital markets provide an efficient means to exchange excess funds into the most productive investment projects through the forces of supply and demand for assets. Essential to the investment process are the investors, who rely on information to make these investment decisions. Key concepts, theoretical and empirical literature review, and relevant country background were discussed at length in chapters 2, 3, and 4.

5.2   RESEARCH PHILOSOPHY AND RESEARCH APPROACH

The third stage in designing an appropriate research methodology relates to the researcher's belief system and views on what is considered acceptable knowledge. The researcher's point of view regarding her research philosophy and research approach is an influencing factor in the selection and design of the research methodology that will be employed to answer the research questions because these predispositions contain important assumptions for the direction of the research. Figure 5.8 depicts the research 'onion' that contains the layers for choosing a research methodology, including the research strategies, research choices, time horizons and the data collection techniques and procedures (Saunders, et al., 2009, p. 108).
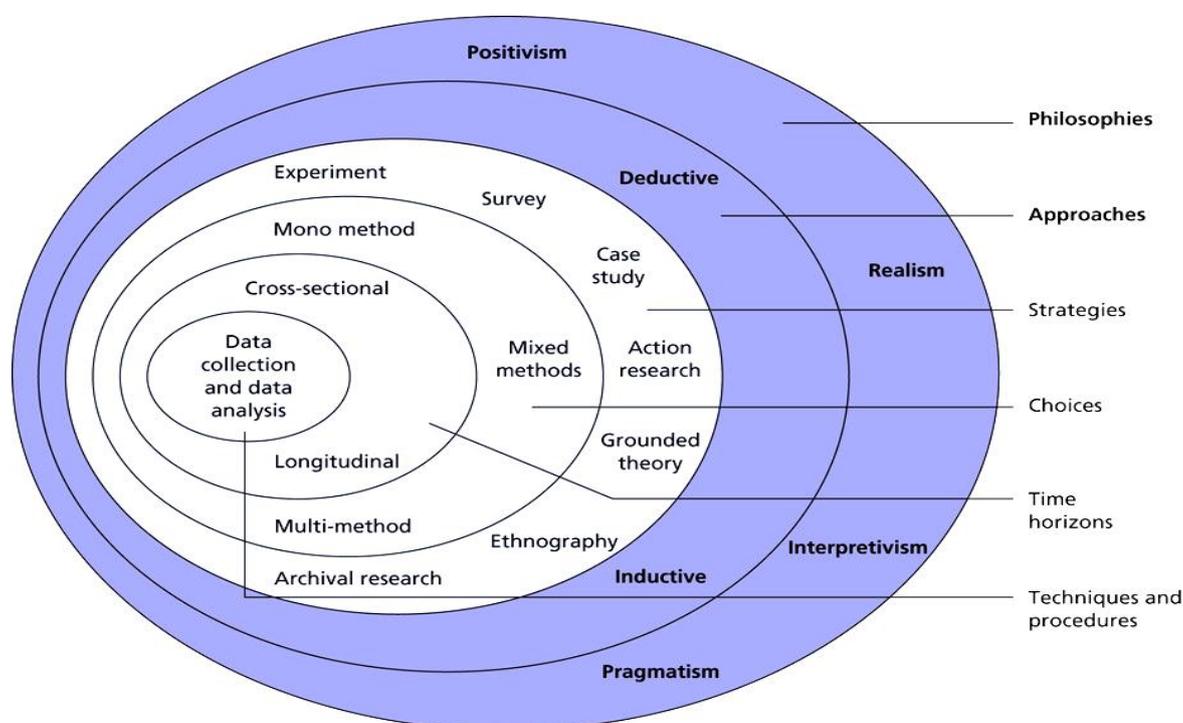
Figure 5.8: The research 'onion'
Source: (Saunders, et al., 2009).

There are four basic research philosophies, positivism, realism, interpretivism and pragmatism. Each research philosophy must be viewed in context with the relevant branch of philosophy. Epistemology is "a branch of philosophy that studies the nature of knowledge and what constitutes knowledge in a field of

study" (Saunders, et al., 2009, p. 591). It focuses on what the researcher considers to be acceptable knowledge whereby she uses objective, observable phenomena, subjective interpretations of people or somewhere in between to undertake value free or value-laden research. On one end of the spectrum is the positivist researcher who is objective and independent of the research investigation. Positivism focuses on external, objective and observable phenomena to provide credible data and facts (Saunders, et al., 2009, p. 119). The positivist researcher generally uses quantitative data collection techniques.

In contrast, the interpretivist researcher is subjective, becomes part of the research to explain differences in humans and tends to use qualitative data collection techniques. Realism has two forms: direct realism and critical realism. Direct realism says, "What we experience through our senses portrays the world accurately, while critical realism says, "what we experience are sensations, the images of the things in the real world, not the things directly" (Saunders, et al., 2009, pp. 590-591). The realist may use either quantitative or qualitative methods. Pragmatism is a cross between positivism and interpretivism. The pragmatist researcher answers the research question using either objective observable data or subjective meanings or both because each has value in interpreting the results (Saunders, et al., 2009, p. 119). Pragmatists often use a combination of quantitative and qualitative data collection techniques. This researcher is a pragmatist with regard to value position and what constitutes acceptable knowledge. Furthermore, this researcher identifies with aspects of the positivism and interpretivism philosophies depending on which research question needs to be answered. Consequently, the research design, research strategies, data collection and analysis techniques for the study are influenced by the pragmatist research point of view.

Another key influence in the selection of research methods and design is the particular research approach that the researcher takes. There are two approaches to research: deduction and induction. The inductive approach focuses on the development of theory from the collection and analysis of empirical data where the researcher is part of the research process, whereas the deductive approach focuses on the testing of operationalised hypotheses from theory to explain the

relationship between variables in order to generalise results and where the researcher is independent of the research process (Saunders, et al., 2009, pp. 124-127). The most appropriate approach to answer the main research question for this study is the deductive approach. However, since qualitative research is employed an inductive approach is used for qualitative questions.

5.3   RESEARCH DESIGN AND TECHNIQUES

Essential to achieving valid results is the construction of an appropriate research design that defines a methodology, provides the methods used for gathering, measuring and analysing the data, and allows for the interpretation of results in order to draw general conclusions. This research seeks to examine the usefulness of accounting information produced from applying IAS/IFRS in Jordan. An appropriate research design is required to investigate the research question such that accurate measurement of the relationship between the variables is achieved. Furthermore, the research design should identify the variables and control for extraneous factors to enhance internal validity and allow for generalisation or external validity (Smith, 2003). Research designs can be classified in several ways depending on the nature of the research. Figure 5.9 illustrates the different classification of research methods and designs.

Type	Numerical	Purpose	Time horizon
basic or "pure" research	quantitative research method • numerical data	exploratory research	cross-sectional
applied research	qualitative research method • non numerical data	descriptive research explanatory research	longitudinal
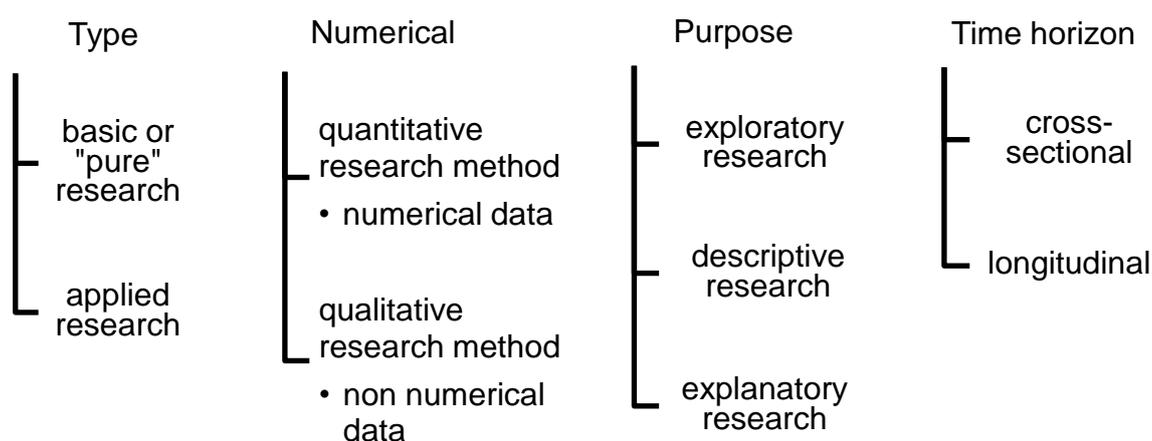
Figure 5.9: Classification of research design, type, numerical, purpose & time
Source: Adapted from (Gabel, 2007).

There are two types of research, basic or pure research and applied research. Basic research is research that advances knowledge of the fundamentals of how the social world works and develops general theoretical explanations (Gabel, 2007). The purpose of basic research is to expand knowledge in business and management in general within an academic context (Saunders, et al., 2009, p. 6). Applied research attempts to solve a concrete problem or address a specific policy question. It has a direct, practical application and is generally used to support decision-making (Gabel, 2007). Therefore, this research study can be classified as an applied research.

There are three classifications of research purpose: exploratory, descriptive and explanatory. Exploratory research "aims to seek new insights into phenomena, to ask questions, and to assess the phenomena in new light" (Saunders, et al., 2009, p. 592). This type of research focuses on interviewing experts or focus group interviews. Descriptive research "paints a picture" with words or numbers, presents a profile, outlines stages, or classifies types. It describes the status at a given time and can use qualitative research, such as data collection via questionnaire, case reports & case series, survey research or quantitative research methods (Gabel, 2007). Exploratory or analytical research tries to find causal relationships such as in experimental clinical trials, whereas the non-experimental method focuses on observational primary research. The purpose of this study is to examine the association between variables using explanatory and descriptive research.

There are two types of research methods, the quantitative research method and the qualitative research method. Quantitative research uses numerical data to answer the research questions, whereas qualitative research uses non numerical such as, information in the form of words, pictures, sounds, visual images, or objects. This study employs a mixed method research using quantitative and qualitative research methods.

5.3.1 RESEARCH STRATEGIES

Constructing an appropriate research design includes deciding on which research strategies for collecting data will best allow for the testing and analysis of variables as well as for the interpretation and generalization of results. Explaining how the data are obtained is important because different research strategies produce different results. For example, data collected from direct in-depth interviews would produce different results from data collected from an online survey. Depending on the research objective, research strategies should be consistent with accepted practices in that particular field. Figure 5.10 illustrates different types of research strategies available to the researcher.
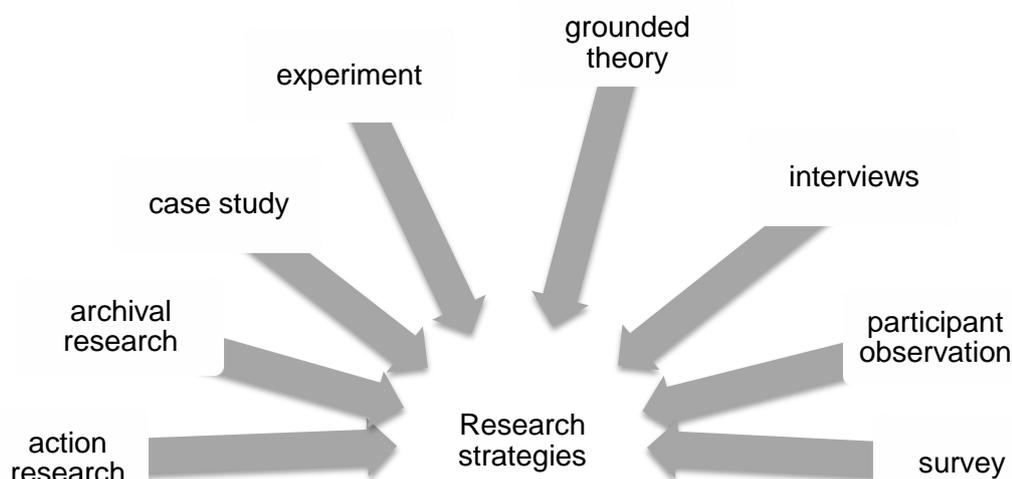
Figure 5.10: Research strategies
Source: Adapted from (Gabel, 2007).

As can be seen in Figure 5.10, there are many research strategies that could be employed. The most appropriate strategies will allow the research questions to be answered more comprehensively. Strategies should also be consistent with the type of research being undertaken. This study is classified as an applied research in business with a pragmatic view and an emphasis on the deductive approach. Some of the strategies are appropriate and others are not appropriate to employ in this research.

5.3.2   RESEARCH METHODS

Yin (2009) states that three conditions are needed in order to decide which research method will be used in the research study. The three conditions are, (a) the type of research question posed, (b) the extent of control an investigator has over actual behavioural events, and (c) the degree of focus on contemporary as opposed to historical events (Yin, 2009, p. 8). Figure 5.11 displays the five major research strategies and the three conditions needed to select the most appropriate research method(s).

Method	(1) Form of research question	(2)Requires control of behavioural events?	(3) Focuses on contemporary events?
Experiment	how, why?	yes	yes
Survey	who, what, where, how many, how much?	no	yes
Archival analysis	who, what, where, how many, how much?	no	yes
History	how, why?	no	yes/no
Case study	how, why?	no	no

Figure 5.11: Relevant situations for five major research methods
Source: Adapted from Cosmos Corporation in Yin, 2009, p. 8.

The form of the research questions "can provide an important clue regarding the appropriate research method to be used" (Yin, 2009, p. 11).This research study asks 'what' and 'how' type of questions based on the main research question and secondary questions listed in Figure 5.3. Therefore, any of the research strategies can be employed. The case study research strategy focuses on answering 'how' and 'why' questions in a contextual situation and is well suited for this study because Jordan is used as a case to investigate the decision-usefulness of financial information produced from implementation of IAS/IFRS to equity investors of the ASE. Case studies allow examination of the influence of contextual factors, economic, political, social, legal, historical and cultural factors (Yin, 2009).

Also, the survey and archival research strategies that answer 'what' type of questions are well suited for this research. The survey research method is employed to address SQ1 and SQ2 in order to gain a deeper understanding of the decision-usefulness of accounting information to the primary users of financial information, the equity investors. Results of two questionnaires administered to equity investors of the ASE are used. Archival research employs secondary data such as administrative records, historical records and legal documents; this type of strategy is well suited to answer the research questions that require analysis of company annual reports, legal documents, financial records and academic literature. Another research strategy that may be employed is the interview method (Figure 5.12). Interview type questions can provide answers to questions that need further explanation. Interviews use qualitative data or non-numeric data that needs to be classified and categorised and is best suited to answering 'why' questions which enable greater explanatory power. Interviews to members of the ASE and the accounting profession in Jordan are conducted to enhance the analysis for SQ3.

The experiment design requires control of and access to behavioural events that is difficult to achieve in this study. This strategy is designed to answer 'how' and 'why' questions. It is not "feasible for many business and management research questions" (Saunders, et al., 2009, p. 144)such as the questions asked in this study (Figure 5.3). Therefore, the experiment strategy is not well suited for this study. Grounded theory is generally an inductive approach that focuses on building theory from the data. This strategy is not well suited to answer the research questions because the approach is not consistent with the approach taken by this research. Participant observation is a strategy whereby the researcher is part of the research being undertaken. This researcher is not part of the study therefore it is not a suitable strategy for this research. According to SLT (2009) action research is "concerned with the management of change and involving close collaboration between practitioners and researchers." This research does not focus on the management of change issues and therefore this not an appropriate research strategy.

Research strategies suitable to answer the main and secondary research questions include case study, surveys, interviews and archival strategies. This research study employs each of these research strategies and the next sections will explain how they are employed. The use of multiple sources of evidence provides the researcher with greater confidence in the interpretation and analysis of results and enables the findings of the research to be as robust as possible (Yin, 2009). The mixed research method is holistic because a wider net can be cast that enables the use of a multi-data-gathering strategy to examine the same research questions.

5.3.3   RESEARCH CHOICES

The next layer of the onion is related to the choice of which research method to employ. Figure 5.12 displays the different research choices and their combinations.
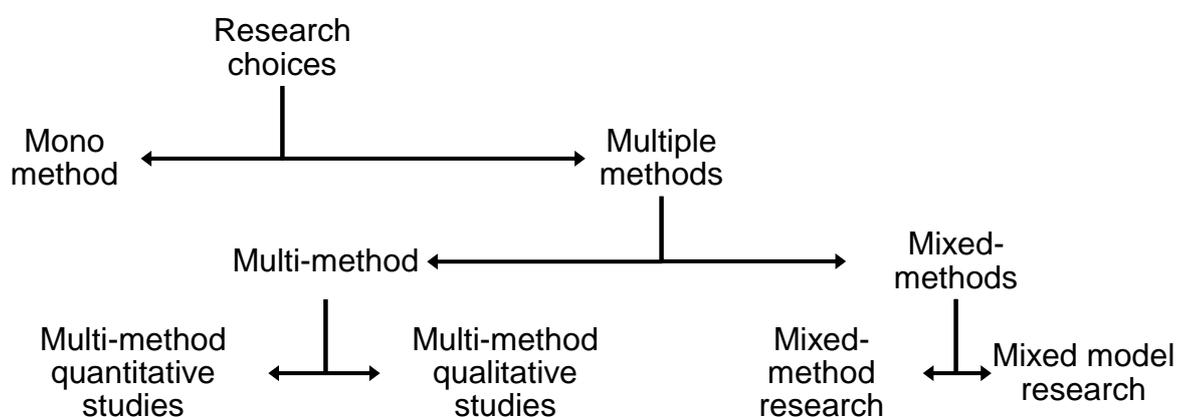
Figure 5.12: Research choices
Source: (Saunders, et al., 2009, p. 152).

The study employs quantitative and qualitative data. "Mixed methods research is formally defined as the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study" (Johnson & Onwuegbuzie, 2004, p. 17). A mixed methods research design has been constructed for this study because it provides

greater chances to answer the research question with greater robustness, data verification and triangulation that leads to more valid conclusions and enables greater generalisability of results. Furthermore, employing mixed research methods allows data triangulation, or multiple sources of evidence to measure the same phenomenon increases the quality of the research design as measured by four criteria (Yin, 2009). Four tests are used to measure the quality of empirical social research, these are: construct validity, internal validity, external validity and reliability (Yin, 2009, p. 40). Figure 5.13 illustrates the case study tactics for the four design tests.
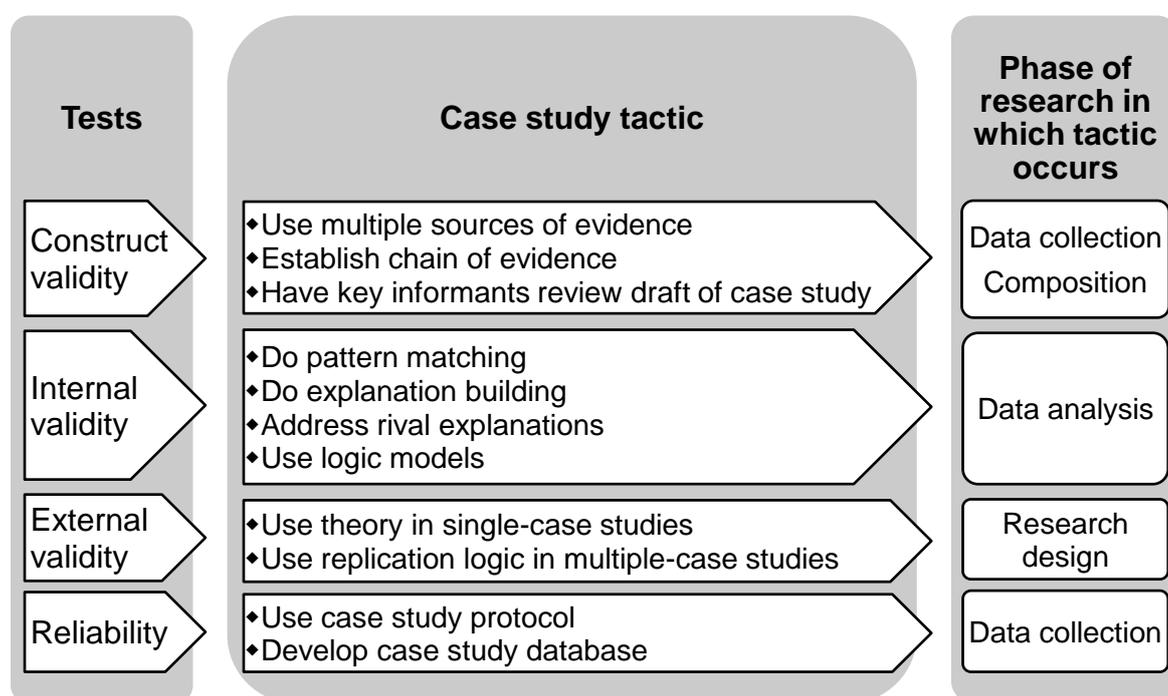
Figure 5.13: Case study tactics for the four design tests
Source: Adapted from (Yin, 2009, p. 41)

This study increases construct validity through the use of multiple sources of evidence, i.e. archival data, questionnaires and interviews to answer the same research question. Having experts review the written drafts of this study also increases construct validity. A chain of evidence was established from the citations to evidentiary sources especially from the literature review, regulatory laws, case study protocol (what data is to be collected), storage and organisation of database, notes, and case study questions. Internal validity was increased by

using analytical techniques such as pattern matching that compared empirically based patterns of a dependent and independent variable with a predicted one for relationships (Yin, 2009, p. 136). Internal validity was also increased by employing hypothesis testing for cross-sectional analysis (Yin, 2009, p. 14) and chi-square hypothesis testing for frequency comparison. The study increases external validity by using accounting and finance theoretical frameworks as the rationale for the case study. Reliability is enhanced through the use of multiple databases constructed from data gathered from various sources of evidence, i.e., financial information database, survey questionnaire database and interview information database.

5.3.4 TIME HORIZON

The next area in planning an appropriate research design is the question of what time horizon to employ. Time horizons for research are either cross-sectional or longitudinal. Cross-sectional studies are based on data collected on a group at a single time and commonly use a survey strategy (Saunders, et al., 2009, p. 155). Longitudinal studies follow the same group over a prolonged time or for more than one time period that enables comparative analysis of a group for different time periods. This study employs both types of time horizon to reflect the mixed method research strategy. The quantitative method uses a longitudinal time horizon to access data from archival secondary financial data sources. The survey and interview research methods use a cross-sectional time horizon to administer questionnaires to equity investors of the ASE. Sections 5.4.8 and 5.5.2 detail the time horizon for both research methods.

5.3.5 RESEARCH DESIGN FOR THE STUDY

The research design for the study can be summarized in Figure 5.14 using the SLT (2009) research onion diagram. The study is classified as applied research that has a direct, practical application and can be used to support decision-making. The research philosophy is classified as pragmatism and employs a deductive approach. Additionally, both cross-sectional and longitudinal time horizons are employed. Parametric statistics and hypothesis testing was

employed to investigate the relationship between two variables, independent and dependent for the residual earnings model. The next section defines the models and gives the operational definitions for testing.
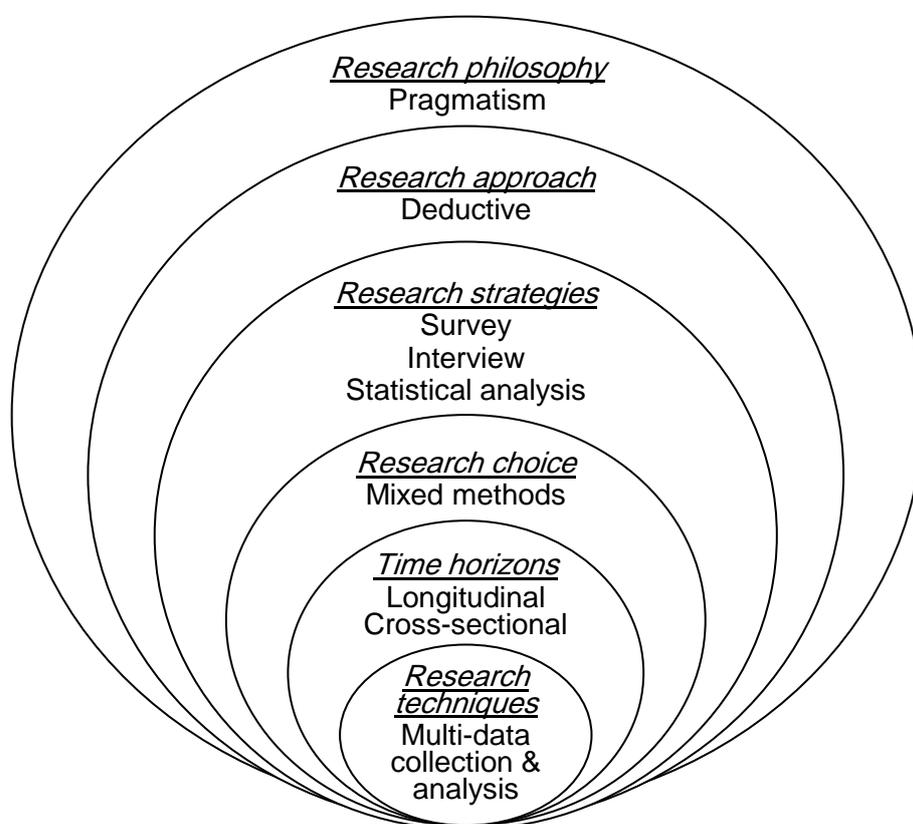
Figure 5.14: Research design for the study linked to the research 'onion'
Source: Adapted from (Saunders, et al., 2009).

The study employs quantitative secondary data from the ASE annual shareholders' guides. Generally, quantitative research contains hypotheses that are tested statistically from empirical data collected and then results are interpreted and analysed. A strong research design employs correct statistical tests to measure results, validate conclusions and provide a foundation for the creation of new knowledge. These particular research methods were selected for the following advantages; first, the financial data is publicly available and therefore affordable and easy to obtain. Second, this type of data is commonly collected from archival databases and can be used by almost any type of research. Lastly, time limitations deter collection of financial data directly from each firm in the ASE.

The second research method employed by this study is the qualitative research method. Data gathered from two questionnaires administered to equity investors produced numerical and non-numerical type data. The questionnaire was developed to provide another source of evidence for examining the main research question other than numerical data. It is complementary to the first quantitative research method and will help to clarify and deepen the scope of the results to gain greater insight.

A mixed method research approach was employed because it enabled greater robustness than using a mono research method. A mixed method research would also have the advantage of cancelling the 'method effect' that will also enable greater robustness of results and greater confidence of the research conclusions (Saunders, et al., 2009, p. 154).

5.4   QUANTITATIVE RESEARCH METHODOLOGY

The quantitative research methodology is based on the operational form of the residual earning model (REM). First, the model was selected because of the theoretical justifications developed in finance literature since 1938 for the use of book value and earnings as the basis for equity valuation models. Second, the model is widely employed by numerous empirical studies to examine the association between share prices and accounting numbers with significant findings based on these theoretical developments. These were discussed in chapter 3 section 3.3. A third, more practical reason for choosing this equity valuation model over other models is because investors in western capital markets, whether small or large, sophisticated or naive regularly use them. This supports the usefulness of accounting numbers in the investment decision-making process of equity investors. Fourth, anyone, investor or otherwise, can obtain the information in the model freely. Fifth, Jordan uses clean surplus accounting which is an assumption of the REM developed by Ohlson (1995). Therefore, the residual earnings model was chosen over other valuation models (see chapter 2 for a discussion on other equity valuation models).

The next step in the research process is to define the operational forms of the models, to identify and define the variables used in the operational forms, to formulate the hypotheses, describe the measurement procedures, population and sample parameters, secondary data availability, the data handling criteria for the sample and the limitations of quantitative research.

5.4.1 THEORETICAL MODEL

The quantitative research methodology implemented in this study is based on models using accounting numbers, book value and earnings that are widely used in developed capital markets such as those in the US and the UK. The methodology is based on OLS regressions of the relationship between the book value and earnings with share market prices in the ASE. Residual earnings valuation originate with Preinreirch (1938) and later Edwards & Bell (1961), Ohlson (1995) and Feltham & Ohlson (1995). The residual earnings or income model states that the share market value of a firm is the book value per share (BVPS) plus the residual earnings per share (REPS). The model requires clean surplus accounting which is employed in Jordan through the implementation of international accounting standards such as the IAS and the IFRS that are mandatory for publicly held firms on the ASE. However, during the 1980s, there was not a single set of accounting standards that were required for firms listed on the ASE and therefore cannot be established which firms employed clean surplus accounting and which did not during this period. This represents a limitation of the study. For firms that have issued preferred shares, the preferred shares are subtracted from the total common equity value in order to arrive at the common share valuation. A detailed derivation of the model can be found in the original works of Ohlson (1995) and Feltham & Ohlson (1995). Chapter 2 presented the theoretical justification and chapter three presented the empirical evidence that the methodology employed in this research is widely accepted in the finance literature since 1938. Additionally, empirical studies have been conducted with significant findings which supports use of the model as appropriate for addressing a similar research problem (Graham and King (2000), Gornik-Tomaszewski and Jermankowicz (2001).

Investors who seek to earn superior risk-adjusted returns take an active investment strategy (Stowe, et al., 2002, p. 5). Within the active investment approach, there are many known equity valuation models and techniques that investors can use to identify mispricing calculated as the difference between the estimated intrinsic value and the market price of a share (Stowe, et al., 2002, p. 14). As discussed and defined in chapter 2, the two main types of equity valuation models are the absolute valuation models which specify a share's intrinsic value, and relative valuation models which specify a share's value relative to that of a similar share. Determining a share's intrinsic value requires assuming several assumptions regarding each firm's present value of cash flows and the appropriate discount rate, thereby causing the intrinsic value to be very sensitive to small changes in the discount rate used.

The investment decision-making process is inherently forward looking in that investors make decisions to earn a profit in the future for their investment. In order to decide whether a share will perform better in the future, investors use the past financial performance of the firm to forecast future performance. One of the most commonly used forms of financial information is the archival financial data that is freely available for public shareholding firms. An advantage of using historical accounting data is that this represents the actual numbers on financial statements rather than forecasting accounting numbers that are subject to estimation error. Therefore, the model employed in the methodology use historical accounting data as the basis for examining the decision-usefulness of financial information.

5.4.2   OPERATIONAL FORMS FOR THE RESIDUAL EARNINGS MODEL

The methodology employed in this research is based on the operationalisation of the REM valuation model. In order to statistically measure the model, an operational definition is constructed. The residual earnings model uses the current share price of a firm in year t equal to the book value per share plus the residual earnings per share for a firm in year t plus an error term. We start with the mathematical definitions for the operational forms formulated for the model that can be expressed in the regression equation 6.1 as follows:

$$P_{i,t} = \alpha_0 + \alpha_1 BVPS_{i,t} + \alpha_2 REPS_{i,t} + e_{i,t} \qquad (6.1)$$

Where:

$P_{i,t}$	= share market price for firm i at the end of period t
t	= 1,…, T Period index
i	= 1,…, N Firm's index
α_0	= regression constant or intercept coefficient
α_1, α_2	= regression coefficients to be estimated
$BVPS_{i,t}$	= book value per share for each firm i at the end of year t
$REPS_{i,t}$	= residual earnings per share for each firm i at the end of year t
e	= error term

The null hypothesis is tested for each independent variable in the model and for every year in the entire study period from 1980-2009, with the exception of 1990 because this year was a transition year. The hypotheses are formulated and described in section 5.4.5. The operational forms are employed to find possible statistically significant associations between the dependent variable, share market price, and the independent variables, book value per share (BVPS) and residual earnings per share (REPS).

5.4.3 THE VARIABLES

Researchers are often curious about certain areas of their discipline. Whenever researchers want to examine a problem, they will want to investigate the relationship between the key variables that affect that problem. In the physical science, two variables, X and Y, frequently have an exact relationship to each other, whereas in the social sciences the relationship is almost always inexact (Lewis-Beck, 1980, pp. 9-10). In statistics, a variable is a value that varies whether it is quantitative or qualitative data. Thus, a common physical science relationship is linear because the variables are exact and causal because one variable, X or the independent variable, causes the effect in the other variable, Y, or the dependent variable. On the other hand, a social science relationship that is

inexact must account for the uncertainty with another variable, called the error term (Lewis-Beck, 1980). The difference can be illustrated in Figure 5.15, which shows the linear relationship for both cases.
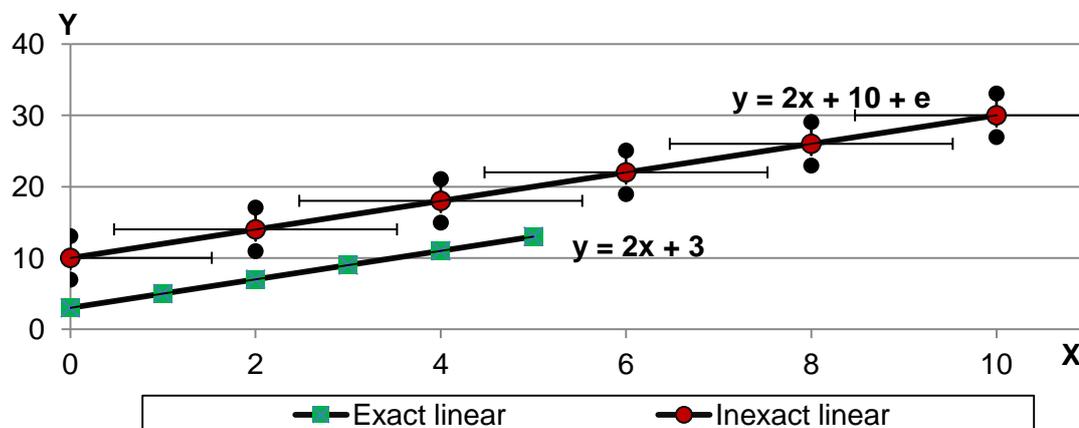
Figure 5.15: Exact & inexact linear relationship between X & Y
Source: (Lewis-Beck, 1980, p. 11).

The inexact linear relationship includes the possibility that the equation does not perfectly predict the dependent variable Y because the observed data can be below or above the line produced by the equation. While the variables X and Y vary, the constant, 2, in both equations is always the same.

The model employed in the study contain key quantitative variables that are statistically tested to investigate the main research question. These are the independent variable, X, and dependent variable, Y, plus an error term. Specifically, the variables are the current market price of a share (P), the current book value per share, the residual earnings per share, and the error term (e). The first variable is the share market price (P), which is the closing price of common shares at year-end. This is straightforward and can simply be determined from the stated market price given for each security available from the annual shareholders' guide publications from the ASE. Year-end prices are employed because "comparing prices at year-end (even though annual accounting information has not been released at that time), in general, provides the highest correlation between market and accounting numbers" (Graham and King, 2000, p. 467).

174

The second variable is current BVPS which is readily available from annual financial data accessed from the website of the ASE or shareholders' guides. The third variable is current REPS. The EPS is readily available from ASE annual shareholders' guide publications without the need to make any adjustments because in the case of Jordan, common shares are usually the only type of share issued by companies, with very few exceptions. Adjustment for stock splits and stock dividends are immediately reflected in the share price. The REPS is calculated as EPS_{it} - $r*(BVPS_{t-1})$, where EPS is the earnings per share, r is average yearly commercial lending rate for Jordan and BVPS is the book value per share at year end.

The last variable is the error term. The error term "is a random term added to economic models to convert them into stochastic models to be confronted with economic data" (Seddeghi, et al., 2000). The variables employed to measure the usefulness of accounting information are the independent or explanatory variables: BVPS and REPS and their relationship to share market price, which is the dependent or response variable. Figure 5.16 illustrates the independent and dependent variables for the model employed in this thesis.
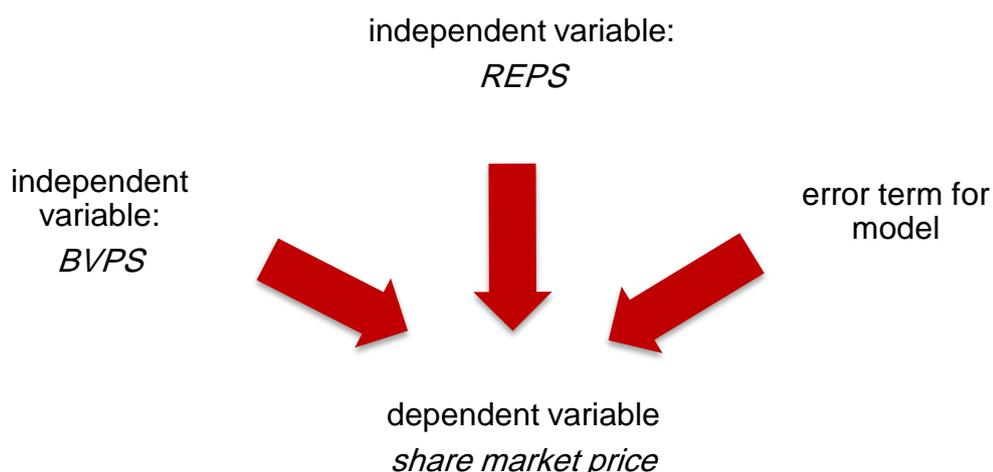
Figure 5.16: Dependent & independent variables for this research study

A major extraneous variable in examining the effect of the mandatory implementation of IAS/IFRS on the ASE is time. Thus, a pre-IAS/IFRS study group was constructed to test whether there was an association between market-based multiples and share market values during the period before compulsory IAS/IFRS implementation for all public shareholding firms on the ASE. Since all firms were required to comply with the IAS in 1991, the study period from 1980-1989 is used to compare the IAS and IFRS periods with a period of time where firms on the ASE did not have to use the IAS. The year 1990 was excluded from both the pre-IAS/IFRS group and from the IAS group because it is a transition year that may distort the findings for either sample. Measurement procedures for the variables in the regression equations are described in the next section.

5.4.4   MEASUREMENT PROCEDURES

The models in this research employ variables that need to be measured. "A valid measure is one that accurately measures the variable you are studying" (University of Texas, 2005). Measurement should also be reliable, that is one that will always yield the same answer. Measurement error refers to the difference between the measurement obtained and the "true" value of the variable, however, "true" measures cannot be obtained, but they can be estimated (University of Texas, 2005).

The measurement of the model is based on the accounting information BVPS and REPS that are collected from actual reported financial statements publicly available from the ASE annual shareholders' guide. Data for the years 1980-2009 are used to compute the independent variables expressed in equation 6.1. Cross-sectional OLS procedures are used to estimate the constants or regression coefficients: α_1, and α_2 for the BVPS and REPS for the years 1980-2009 to test the stated hypotheses in section 5.4.5. A previous study (Omet, 2000) found that equity returns on the ASE during the 1990s showed significant and persistent skewness and kurtosis in the probability distribution of share prices; thus, the variables are tested for normality, skewness and kurtosis. The basic assumptions of linear regression are (University of Texas, 2005):

Assumption 1: Linearity

The first assumption of the OLS model is that the dependent variable can be calculated as a linear function of a specific set of independent variables, plus a disturbance term. The unknown coefficients of this linear function form the vector and are assumed to be constants. The basic linear model is $Y = a + bx + u$.

Y is the dependent variable, x is the independent variable, a and b are constants, and u is the error term. The reason why the model needs an error term is because there may be omission of explanatory variables, aggregation of variables, model mis-specification, functional mis-specification, and/or measurement error.

Assumption 2: Independent, identical, normally distributed errors

It is assumed that the error terms all have the same variance and are not correlated with one another or with the independent variables. Certain limitations may include: Heteroscedasticity, autocorrelation, non-normality, and non-stationarity.

Assumption 3: Fixed in repeated samples

Observations on the independent variable can be considered as fixed in repeated samples. i.e. it is possible to repeat the sample with the same independent variables.

Assumption 4: More observations than regressors

It is assumed that there are more observations than regressors and that there are no linear relationships between the independent variables otherwise there may exist multicollinearity.

Assumption 5: Expected Value of Errors is Zero

The mean of the distribution from which the error term is drawn is zero.

In addition the central limit theorem applies to large sample size. The statistical significance of the regression coefficients, α_1, and α_2 indicate if the null hypotheses are rejected or not. It is expected that the $H_{0,1}$, and $H_{0,2}$ will be

rejected if investors take into consideration BVPS and REPS in the process of valuing shares. However, when testing the hypotheses, it is important to minimize making either Type I or Type II errors. Type I errors refer to the rejection of the null hypothesis when in fact it should not be rejected. Type II errors refer to retaining the null when the reverse is true (Saunders, et al., 2009, p. 452). Significance levels can be set to minimize these errors but since they are inversely related setting significance higher to 0.01 or lower to 0.05 will result in opposite effects in making Type I or Type II errors. Type I errors are more serious and Figure 5.17 illustrates the effects on Type I and Type II errors at each significance level (Saunders, et al., 2009, p. 452).

Several statistical tests are performed in order to examine the relationships, differences and trends for the variables and the data. These include significance testing, t-tests, adjusted R^2, time-series and regression analysis. Statistical packages such as Eviews and EXCEL, are used to perform OLS regression and descriptive statistical analysis.
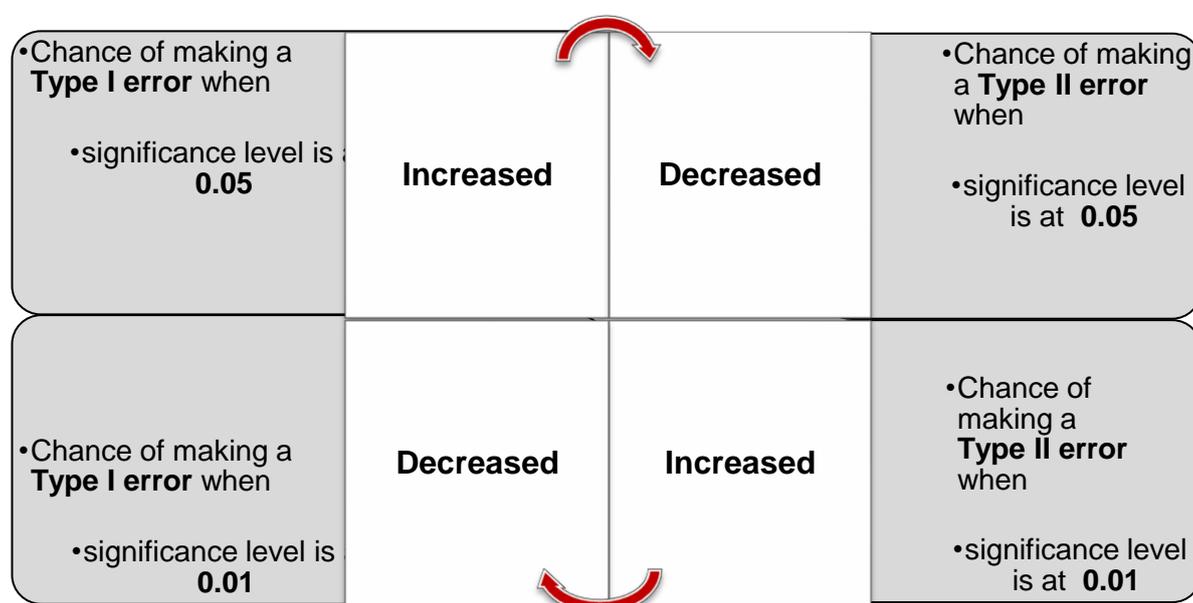
Figure 5.17: Type I and Type II errors
Source: Adapted from (Saunders, et al., 2009, p. 452).

External validity is achieved once results are analysed and generalizations can be made about the hypotheses which are described next. The internal validity of the independent variables has been met by using and comparing with a study group where there was no implementation of IAS/IFRS which is explained in section 5.4.7, population and sample parameters.

5.4.5   HYPOTHESES

Having identified the research questions, reviewed the prior literature, identified the research philosophy & approach and explained the different research design and suitability in answering the research questions, derived the theoretical models, defined the operational forms and variables, the next step is to formulate clear hypotheses that can be tested empirically for each model. According to the Oxford Dictionary, a hypothesis is 'a supposition made on the basis of limited evidence as a starting point for further investigation' (Oxford University Press, 2012). It is a prediction of what the researcher believes the outcome will be from testing the hypotheses through a stochastic process that expresses the relationship between variables. The purpose of statistical hypothesis testing is to help draw conclusions about population parameters based on results observed in a random sample. The objective is to be able to generalise conclusions from the sample to the population.

Two rival hypotheses, the null and the alternate, are formulated for two models. The null hypothesis (H_0) states that there is no relationship between the independent and dependent variables and that any relationship observed is due to chance or fluctuations in sampling (Royal College of Nursing, 2000). The null hypothesis is based on the concept of falsifiability, or the possibility that a statement is not supported by the empirical evidence. Whereas, the alternate hypothesis (H_a) states that there is a relationship between the independent and dependent variables. Only the null hypothesis is actually tested statistically as it is difficult to statistically prove that it is true. Rather, by testing the null hypothesis, it is either refuted and then the alternate hypothesis is accepted or it is not rejected which means there is no relationship between variables. Furthermore, "when a

hypothesis or model is suggested as a description of data, the model is not meant to be an exact representation of reality; rather it is proposed as a convenient and useful approximation of the world which explains real-life data better than competing models' (Fama, 1976, pp. 11-12).

Hypothesis testing for an association between the independent and dependent variables is tested in this study rather than a strict causal relationship. The difference being that an association means a general relationship, whereas causality or "the relationship between cause and effect" (Oxford University Press, 2012) refers to correlation or a statistical measure that indicates the amount of association.

Accordingly, the null hypothesis for the model states that there is no significant statistical relationship between the BVPS variable and share market prices in the ASE. On the other hand, the alternate hypothesis rejects this premise by stating the existence of a relationship between the independent variables and the share market price. Based on the theoretical justification of the model, it would be expected to reject the null hypothesis and accept the alternate hypothesis indicating the use of the BVPS by investors in the ASE.

Likewise, if the REPS is a good indicator of a firm's market price, then a positive and significant relationship would exist between the REPS and the market share price of the firm. In this case, the null hypothesis would be rejected and the alternate hypothesis would be accepted. The acceptance of the alternate hypothesis indicates that equity investors use the REPS as an input into their investment decision-making process.

To test whether IAS/IFRS has provided decision-useful accounting information for equity investors of the ASE, the study period prior to the IAS/IFRS implementation is compared to the periods after IAS/IFRS implementation. It is expected that the null hypothesis be rejected and the alternate accepted, thus demonstrating the usefulness of financial information for listed companies on the ASE produced by applying IAS/IFRS. Table 5.1 illustrates the null and alternate hypotheses.

Table 5.1: Hypotheses formulation for quantitative research design

Residual earnings model: BVPS		
$H_{0,1}$	$\alpha_1 = 0$	There is no significant statistical relationship between the current BVPS and share market prices in the ASE.
$H_{a,1}$	$\alpha_1 \neq 0$	There is a significant relationship between the current BVPS and share market prices for firms in the ASE.
Residual earnings model: REPS		
$H_{0,2}$	$\alpha_2 = 0$	There is no significant statistical relationship between the REPS and share market price for firms in the ASE.
$H_{a,2}$	$\alpha_2 \neq 0$	There is a significant relationship between the REPS and share market prices in the ASE.

The hypotheses formulated for the study can be either directional or non-directional. That is, it is expected that there is a relationship between the independent and dependent variables and it is positive as well as significant. This would not necessarily mean that the independent variable caused the effect in the dependent variable because that is not the aim of this research. The main point is to examine the association between variables and not the correlation *per se.* However, both the association and correlation will be measured for the variables. In particular, the purpose of constructing a mixed method research design for the study is to simultaneously quantify and qualify results thereby broadening the scope of interpretation and deepening the understanding of stated outcomes. The first null hypothesis tests the relationship between the BVPS and share market prices. The second null hypothesis tests the relationship of the REPS with share market prices.

5.4.6 TIME HORIZON

The study period 1980-2009 were divided into 3 periods to enable testing and comparative analysis of results for each period. The first study period is the pre-IAS/IFRS period from 1980-1989. This was during the time when there were no mandatory IAS/IFRS or any other accounting disclosure regulations for public-shareholding holding companies. The second is the IAS period from 1991-2001 when all companies listed on the ASE were legally required to apply the IAS in

external reporting disclosure. The third is the IFRS period from 2002-2009 when the application of the IFRS started to replace the IAS due to the IASB changing from IAS to IFRS pronouncements. This division in time periods aims at comparing the statistical results between the 3 periods to investigate for any significant differences. The study period is long enough to cover more than one business cycle and enable the use of smoothing techniques to overcome variations in the time series of data values (Saunders, et al., 2009, p. 466) that may impact on the validity of the results. In addition, the time horizon for the study periods provides the most comprehensive time frame ever employed in any study using the ASE which includes data up to the year 2009. Figure 5.18 illustrates the time period of this study.
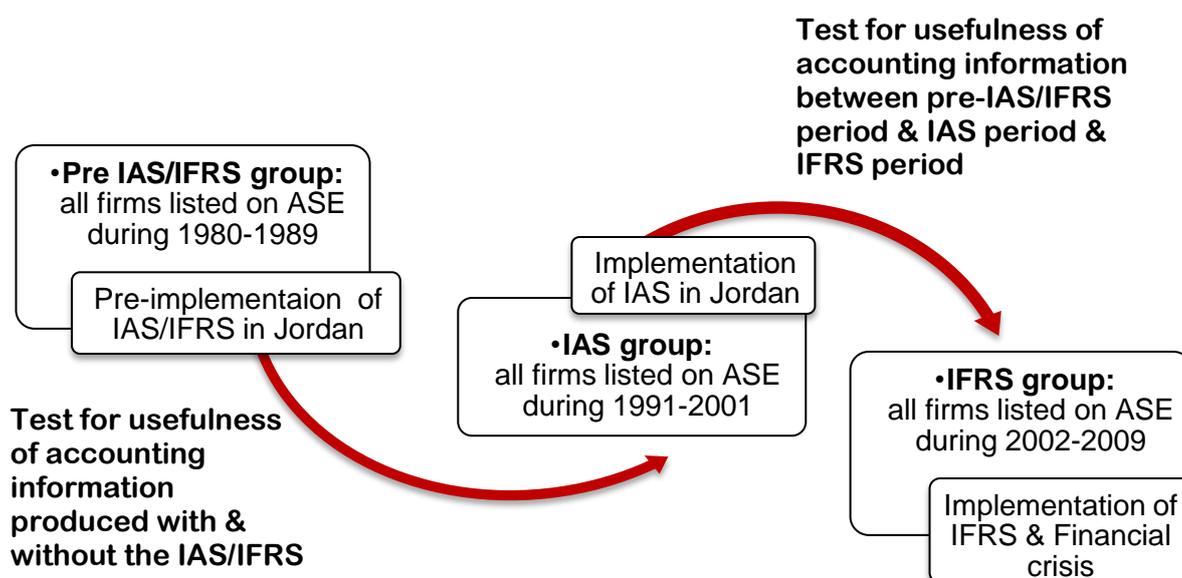
Figure 5.18: Time horizon for the study periods

5.4.7 POPULATION AND SAMPLE PARAMETERS

This section outlines the descriptive statistics for the study groups specified in the study periods. The justification and reasons for the choice of the specific study periods were explained previously. The data should fit the models employed in the study, therefore, data classification, data availability and data handling criteria are provided in the following sections.

The ppulation of a study can be defined in several ways, as "all members of a specified group" (DeFusco, et al., 2004) or as "any set of people or events from which the sample is selected and to which the study results will generalize" (University of Texas, 2005). The population of the IAS/IFRS study groups for this research is defined as all companies listed in the ASE during the period 1991-2009. The population of the comparative study period is defined as all companies listed in the ASE during the pre-IAS/IFRS period 1980-1989. A sample is a group drawn from a population with the goal of finding out true facts about the sample that will also be true of the population (DeFusco, et al., 2004). The best method to have external validity is to obtain a representative sample by randomly selecting a large sample from the population. A non-random sample that is not representative of a larger population will not generalize the results. It is desirable but it is not a fatal flaw in the study if the results do not generalize. A study with a non-random sample still identifies true facts about the sample and perhaps those findings will be true for others as well (University of Texas, 2005).

Many sampling techniques are available to employ for answering the research questions. Each research question would require an appropriate sample technique. Figure 5.19 illustrates the sample techniques available to the researcher.

Sampling techniques are of two types: probability and non-probability. Sampling depends on the data that is needed in order to answer the research questions. If it is possible to collect data from the entire population then sampling may not be necessary. This is usually the case when the population is of a manageable size (Saunders, et al., 2009, p. 212). However, if the population is too large it is impractical to collect data from the entire population in order to answer the research questions because it will cost too much time and money. This is why researchers use sampling techniques to collect data in order to answer their research questions without having these data collection limitations. The sample can be representative of the population or based on judgemental sampling or non-probability sampling.
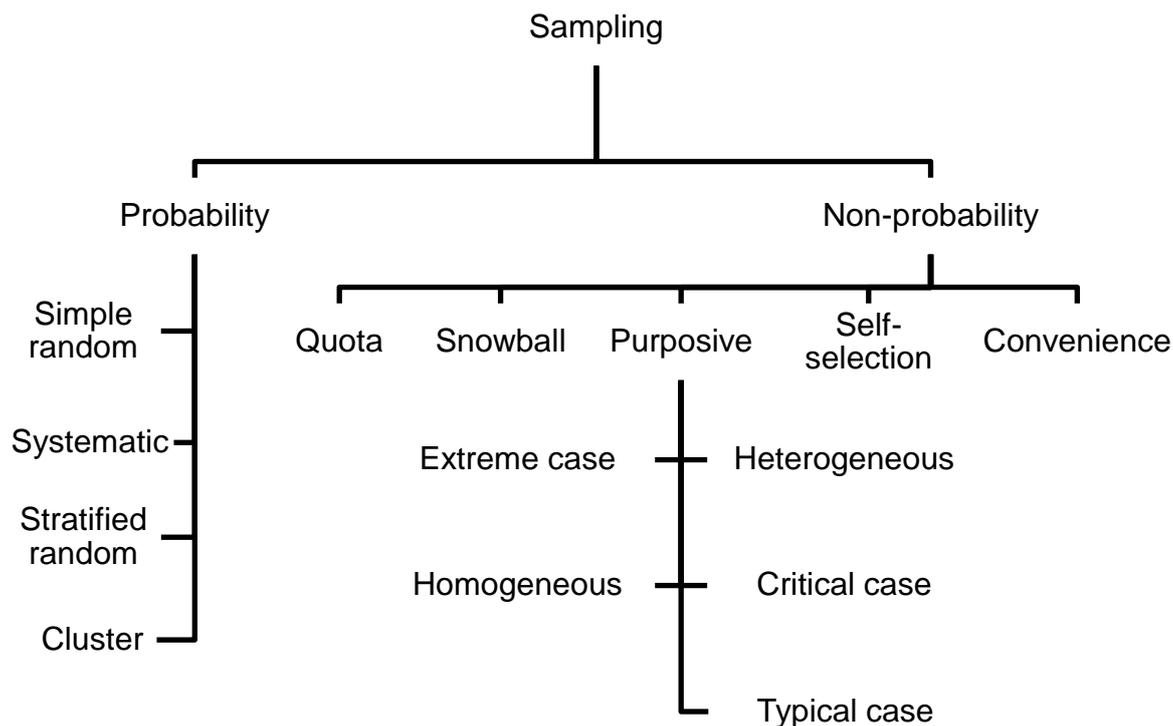
Figure 5.19: Sampling techniques
Source: (Saunders, et al., 2009, p. 213).

For a probability sample, a sampling frame is usually constructed in order to select the representative sample. The sampling frame "is a complete list of all the cases in the population from which the sample will be drawn" (Saunders, et al., 2009, p. 214). Non-probability sampling does not require a sample frame. Figure 5.20 shows a sampling technique decision tree to simplify the choice of which sampling technique to employ given the nature of the research questions to be answered, the need for statistical inference, the geographical area of respondents, and on any patterns within the population.

In the case of gathering data from the ASE, the population of firms listed in the ASE is not significantly large therefore sampling is not necessary, therefore the entire population is used. However, in order to meet the assumptions of statistical testing, data handling criteria, which are explained in Section 5.4.6, are needed in order to carry out the statistical analysis. Specifically, three study periods are constructed from all firms that are officially listed in either the first or the second
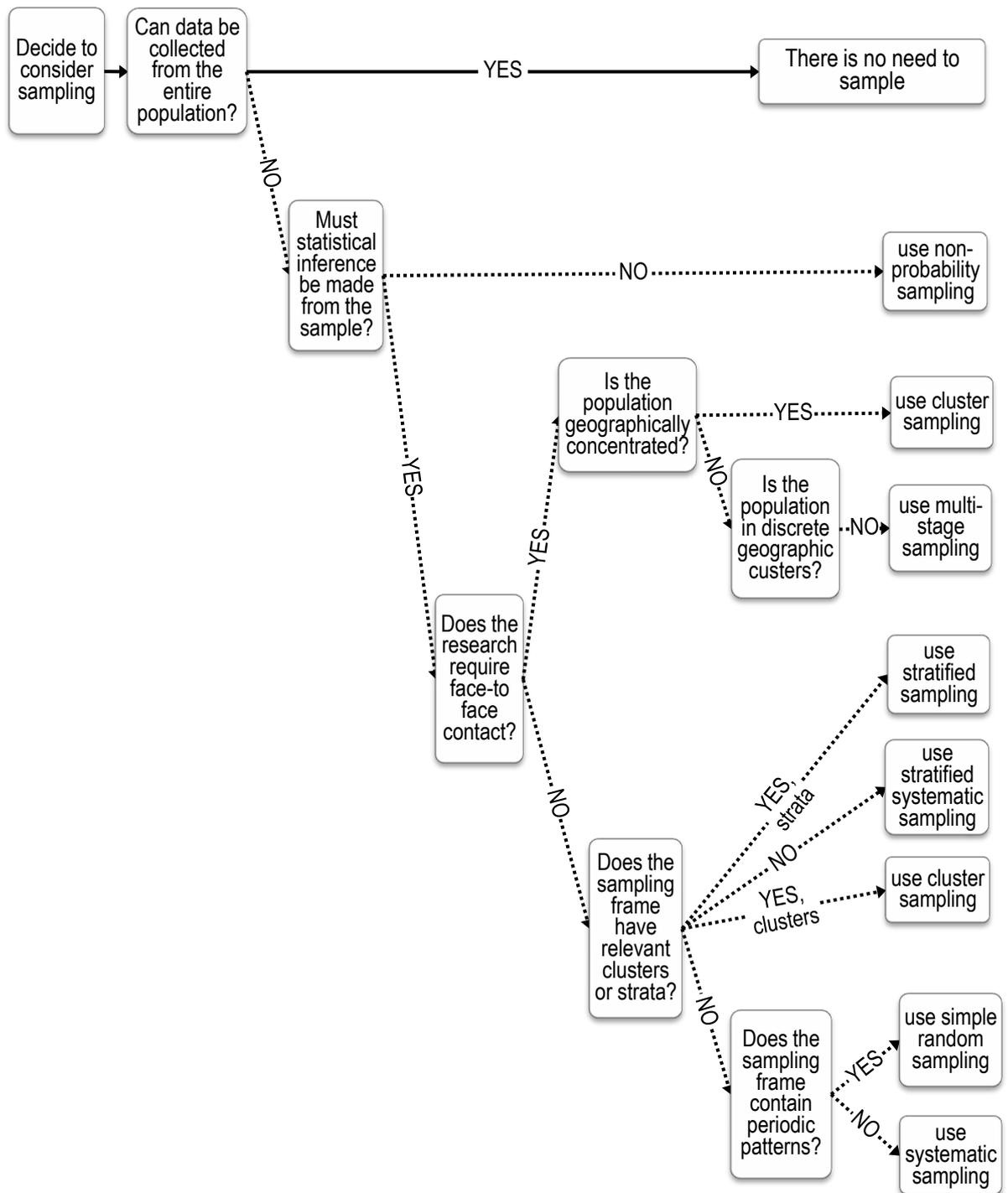
Figure 5.20: Selecting a probability sample
Source: (Saunders, et al., 2009, p. 223)

markets of the ASE during the years 1980 to 2009. The periods are classified into
subgroups by firm (i) and by year (t) so that cross-sectional regressions can be

run for each year and regression analysis can be employed. The same criteria apply to all study periods. Figure 5.21 illustrates the study groups from the population of ASE firms.

Figure 5.21: ASE population & sample parameters

However, the actual number of firms available for analysis is less than the number of firms officially listed on the ASE. This is because some firms were either delisted or suspended from trading by the ASE. Furthermore, some firms were dropped due to lack of the required information needed, such as missing data, or extraordinary events. Actual sample size for each year is presented in chapter six.

5.4.8   SECONDARY DATA AVAILABILITY AND TREATMENT

The data employed in the quantitative research method uses secondary data. According to SLT (2009), secondary data has advantages and disadvantages. The advantages include fewer resource requirements such as time and money. Secondary data is more permanent and is 'likely to be higher quality data than could be obtained by collecting your own' (Stewart & Kamins, 1993 in Saunders, Lewis & Thornhill, 2009, p. 268). Additionally, secondary data allows for longitudinal studies that can be used to compare the data and may result in unexpected new discoveries (Saunders, et al., 2009, p. 269). The disadvantages of secondary data are that the data collected may not be suitable to answer the research question, there is no control over data quality or it may be difficult or costly to collect (Saunders, et al., 2009, pp. 269-272). In order for secondary data to be suitable it should answer the research questions taking into consideration the validity and reliability of the data. Primary data has advantages and disadvantages depending on the research strategy chosen. Sections 5.5 and 5.6

give details of the questionnaire and interview research designs respectively which employ primary data.

The use of secondary data for the quantitative research design is suitable because the data needed are archival data from publicly available annual financial reports for all firms listed on the ASE. Data for all publicly listed Jordanian shareholding companies from the four industry sectors – industrial, banking, service and insurance – during the years 1980-2009 is accessed from hardcopy guides and/or from the ASE website. For the purpose of performing the appropriate descriptive and parametric statistical analysis, the data is classified as either categorical (descriptive or ranked) or numerical (interval or ratio and continuous or discrete). The data type collected from the firms listed on the ASE are numerical, ratio and discrete data which can be analysed using all types of data presentations, descriptive and parametric statistics. These were discussed in the previous measurement section.

The ASE publishes balance sheet and income statement information contained in the annual shareholders' guides for firms listed in the first and second markets of the ASE. Accounting numbers are gathered and entered into a database for all listed firms during the study periods; these include: annual closing market price per share, book value per share, market capitalization, net income, and shareholders' equity. Raw data are entered into spreadsheets and labelled by year, firm, sector and type of data in order to prune, process and organise the data for statistical programming. After data is checked for accuracy and data entry errors, the BVPS is collected and the REPS is calculated for each firm. Careful and systematic procedures are developed to calculate correct formulas to prevent logic errors. One of the best ways to ensure data quality is to know the data. In this way it is easier to identify incorrect entries either manually or through the use of the computer. Annual financial report data are available from the ASE website (www.ase.com.jo) for the years 1992-2009. Earlier years are only available in hard copy from the ASE annual shareholders' guide that contains the annual report data. An example of financial data available from the ASE is illustrated in Appendix B. Figure 5.22 summarises data availability and treatment of the quantitative data for the purpose of answering the research questions.

What data is needed?	• Secondary financialdata, specifically market capitalization, shareholders equity and net income figures contained in balance sheets and income statements for all companies listed on the ASE during the study periods.
Where is the data located?	• The data is located in the ASE website under the yearly annual shareholders' guide.
How was the data was accessed?	• The data is publically available 24/7 from the ASE website: www.ase.com.jo/en/
How & when was the data collected?	• Annual ASE guides are downloaded onto my computer. Then the data is entered in a database. Data is backed up in several locations including UoS.
How was the data selected?	• The data is included or excluded according to the selection criteria already presented in section 5.4.6.
How was the data analysed & interpreted?	• The data is analysed using yearly cross-sectional and time series ordinary least squares (OLS) procedures. The data is interpreted using parametric statistics & significance testing.

Figure 5.22: Availability & treatment of quantitative secondary data

5.4.9 DATA HANDLING CRITERIA

In order to meet the assumptions of statistical testing, data handling criteria are employed to construct both the pre-IAS/IFRS group and the IAS and IFRS study groups. Each condition imposes restrictions on the groups' size because only firms from the population that meet the criteria can be included in the group. For example, some firms do not have all the data necessary to compute the ratios for a given year; thus inclusion of these firms cannot be interpreted in economic terms. The same data handling criteria are used to include or exclude firms for all groups, these are:

1. Firms must have complete data, such as current share market price, accounting earnings, and book value of equity, in order to be included in that year's cross-sectional group. Firms with missing or non-available data are excluded for only the year with the incomplete data set. Missing data handled this way are called listwise and pairwise deletion and both procedures are available in most statistical programs such as SPSS (Munro, 2005, p. 59).

2. The firm's share must be listed in the first or second market of the ASE. Companies within the parallel or third market are excluded from the study groups because these firms are neither listed nor traded on the ASE and therefore are not part of the population.

3. All firms in the IAS and IFRS groups must apply IAS or IFRS in external financial disclosure as of 1/1/1991 and thereafter.

4. Firms that no longer exist due to insolvency or delisting from the ASE are included in order to eliminate survivorship bias.

5. No acquisitions, mergers, or consolidations of firms are included for the year the event occurred. Firms that disappear due to these extraordinary events are included for all previous years that meet the data handling criteria.

6. Outliers for all years during the period 1980-2009 remain in the sample. Because outliers may violate the normal distribution assumption, data may be transformed to accommodate the normality assumption but transformation was not needed.

7. Companies with negative earnings are included. The sample uses unrestricted data

The first selection criterion guarantees that the data is complete in order to compute the variables for each model from equation 5.14 and 5.15. The second and third selection criteria assures that the group is free of survivorship bias because the groups include all firms that have been listed on first and second markets of the ASE, whether or not the firms still exist in subsequent years. The forth selection criterion removes extraordinary accounting events from the groups

to reduce extraneous sample distortions which in the case of the ASE, only very few firms experience these events. The fifth criterion has been selected to maintain the actual population's characteristics and to maintain group size. The last two criterion permit that the model be interpreted under real world assumptions. The criteria have been selected with the aim to preserve and enhance the validity of the study.

Research should have both external and internal validity. External validity depends on generalisability which indicates if the sample is representative of the population and internal validity has to do with the appropriateness of the research design and data collection (University of Texas, 2005). Figure 5.23 illustrates the connection between population, sample selection and internal and external validity of the study.
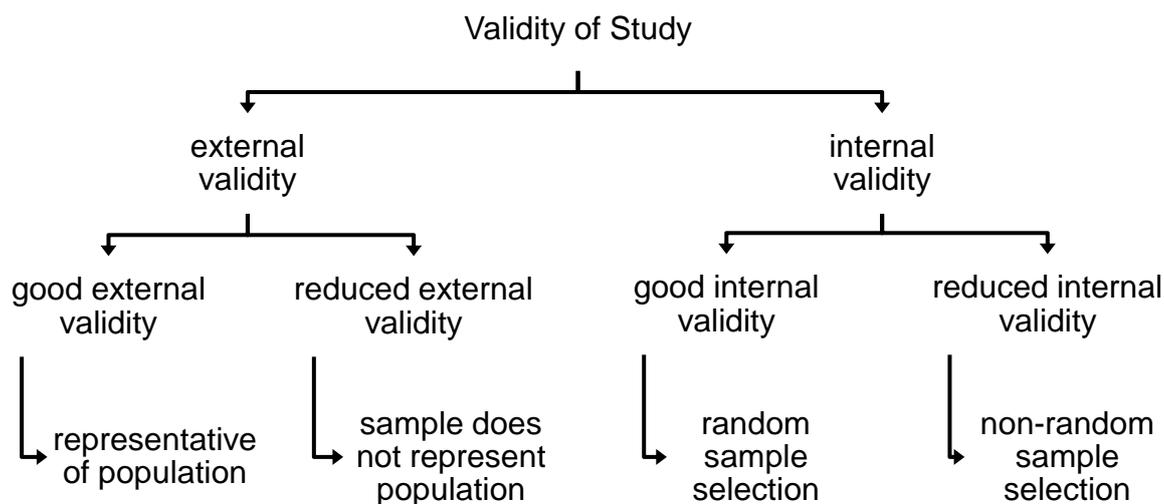
Figure 5.23: External & internal validity of the study
Source: Adapted from (University of Texas, 2005).

The research design for the quantitative research has good external validity because both groups are representative of the population and good internal validity because there was no need to use any sampling techniques in the first place.

The study employs three research design strategies to answer the research questions. The first research design (D1) will be the hypotheses testing of the relationship between market-based ratios and share market prices for firms listed on the ASE for three study periods. Second and third research designs are employed to enable the most robust findings for the study. The second research design (D2) uses two questionnaires as the main survey instruments. Chi-square hypothesis testing is employed for questionnaires. The third research design (D3) employs a qualitative analysis for open-ended questions in the equity investors' questionnaires and for interviews conducted to accounting experts in Jordan. All three-research designs are classified as applied research for business that take a pragmatic research philosophy and use a deductive approach. Table 5.2 summarizes and illustrates the links between the null hypotheses and the classification of the research designs such as the research method, the purpose, the time, the source of data and the measurement of data utilized in the study.

Table 5.2: Links between hypotheses, research designs, data sources & measurement

Null Hypotheses	Research Design Classification					
	Design	Purpose	Data	Time	Source of data	Measurement
There is no statistical association between the BVPS & REPS & share market prices in the ASE	D1	Explanatory	◆ Quantitative ◆ Archival ◆ Secondary ◆ Financial data	Longitudinal	Shareholders' guide published by ASE	Parametric statistical procedures (OLS)
There is no difference in the frequencies between the observed and the expected	D2	Descripto-explanatory	◆ Quantitative ◆ Primary data	Cross-sectional	Primary data from questionnaires	Nonparametric statistics of ordinal data
	D3	Exploratory	◆ Qualitative ◆ Primary data	Cross-sectional	Primary data from interviews & questionnaires	Descriptive analysis of open-ended questions

*as defined by (Saunders, et al., 2009, p. 140).

5.4.10 LIMITATIONS OF QUANTITATIVE RESEARCH

There may exist certain econometric problems that lead to violation of the regression model assumptions such as autocorrelation, heteroscedasticity and multicollinearity that are defined by SLT (2009). Any of these would present limitation to the study.

Another limitation is that of the sample size. The data-handling criterion of a company may reduce the groups' size that may limit the generalisation of the results for samples. However, because the entire population is being used for all the groups it follows that the results describe the ASE population and therefore generalisability is preserved.

5.5 SURVEY RESEARCH METHODOLOGY

The survey research methodology for this research study is designed to describe and quantify characteristics of a specific population, equity investors of the ASE, and to better answer the research questions. The survey research strategy for this thesis employs the use of questionnaires as the main survey instruments, which 'include all techniques of data collection in which each person is asked to respond to the same set of questions in a predetermined order (Saunders, et al., 2009, p. 360). Survey research can be useful to complement the investigation of the association between the variables in the empirical research design, to explain relationships between variables (Saunders, et al., 2009, p. 362) and to clarify analysis of results. The purpose of including a second research methodology is to provide greater insight into the question of decision-usefulness of financial information under investigation. Directly asking equity investors relevant questions not previously done provides greater insights into this area that advances further research.

A survey design procedures were constructed for the study in order to plan effectively through all the stages of the research and increase the validity of the survey findings. Figure 5.24 illustrates the steps taken to complete the survey research.

1) Define objective

⬇

2) Design methodology

⬇

3) Develop survey instruments

⬇

4) Select sample

⬇

5) Conduct pilot test

⬇

6) Revise survey instruments

⬇

7) Administer survey

⬇

8) Measure and Analyse data

⬇

9) Report findings
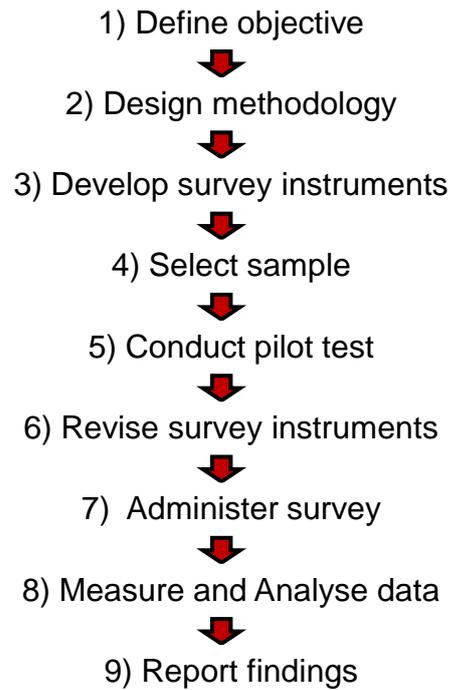
Figure 5.24: Steps for survey research for the study

Questionnaire design depends on a number of factors, such as how it is administered, where it is administered, characteristics of respondents, sample size and type and number of questions in the questionnaire. Figure 5.25 displays the types of questionnaires available to the researcher.

Questionnaire

Self-administered   Interviewer-administered

Internet & intranet-mediated questionnaires   Postal questionnaire   Telephone questionnaire   Structured interview

Delivery & collection questionnaire
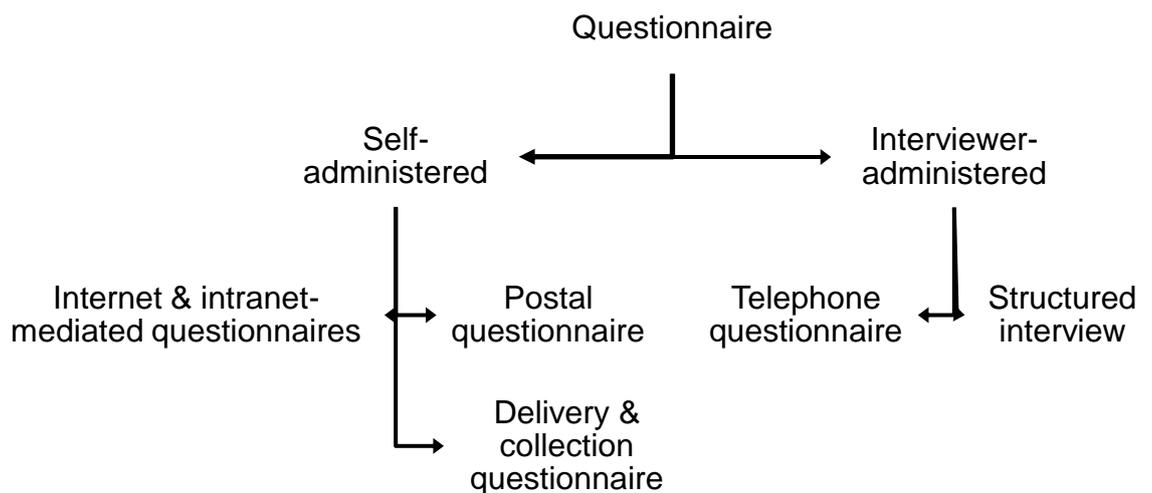
Figure 5.25: Types of questionnaires
Source: (Saunders, et al., 2009, p. 363).

The study employs two questionnaires that are administered to a sample of equity investors of the ASE. A pilot test was conducted to refine the questions and select the most appropriate type of questionnaire. In order to test and analyse the data collected from the questionnaires, it is important to know what type of data variables are collected from the questionnaires. There are 'three types of data variable that can be collected through questionnaires: opinion, behaviour and attribute (Dillman, 2007 in (Saunders, et al., 2009, p. 368). The two questionnaires employ all three types of data variables and include two types of questions, closed ended and open-ended questions.

5.5.1   DESCRIPTION OF THE QUESTIONNAIRES

Before fully administering questionnaires to the institutional and equity investors of the ASE, pilot testing was conducted to 'refine the questionnaires so the respondents would have no problems in answering the questions and there would be no problems in recording the data (Saunders, et al., 2009, p. 394). A pilot test improves "the reliability and validity of Individual questions" (Smith, 2003). The objective of the pilot test was to determine the most appropriate questionnaire type, language, question design and measurement questions.

Afterwards, two questionnaires were administered to equity investors in the ASE to investigate the usefulness of financial information produced from implementing IAS/FRS. The first questionnaire was designed for individual equity investors and the second one was designed for institutional investors of the ASE. The two types of investors, institutional and individual, are different with respect to how much knowledge and expertise they have in their investment decision-making process. Institutional investors are usually professionals who trade large amounts of securities for their company and/or for clients, whereas individual investors buy and sell securities in smaller amounts for themselves.

Consequently, institutional investors have a greater knowledge and expertise than the small individual investor. This means that the questionnaires had to be designed differently for each group in order to ensure that the questionnaires are valid and reliable. Figure 5.26 illustrates the stages that must occur if a question is to be valid and reliable (Saunders, et al., 2009, p. 371).

Researcher is clear about the data
required and designs a question

Researcher decodes the
answer in the way the
respondent intended

Respondent decodes the
question in the way the
researcher intended

Respondent answers the
question
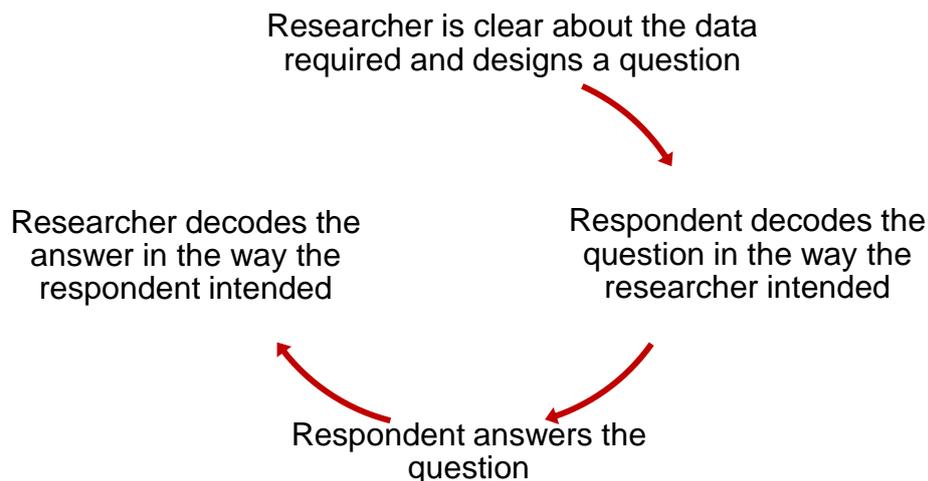
Figure 5.26: Stages that must occur if a question is to be valid & reliable
Source: Adapted from Foddy (1994) in (Saunders, et al., 2009, p. 372).

In order for a questionnaire to be valid, it should have internal validity and content validity. Internal validity refers to the ability of the questionnaire to measure what it is supposed to measure and content validity refers to the extent to which the measurement questions provide adequate coverage of the investigative questions (Saunders, et al., 2009, pp. 372-73). Reliability is 'concerned with the robustness of the questionnaire and, in particular, whether or not it will produce consistent findings at different times and under different conditions (Saunders, et al., 2009, p. 373). Therefore, statistical nonparametric hypothesis testing is employed using the Chi-square test (X^2) for a set of single variables. The chi-square test involves "the comparison of 'observed' and 'expected' frequencies" (Smith, 2003, p. 14). The main purpose of constructing the questionnaires is to enable the research questions to be answered as completely as possible. Therefore, the questionnaires were designed to better answer the main research question and sub-questions.

The questionnaires for this thesis were administered in Jordan and this affected the choice of what type of questionnaire was best suited to answer the research questions. For instance, it is difficult to administer the individual questionnaire through the post, telephone or the Internet because not every individual investor in Jordan has a post office box address or Internet connection. Access to equity investors' telephone numbers is not available because of the SDC privacy policy that assures investors confidentiality of information. That leaves a self-administered delivery and collection questionnaire and an interviewer-

administered questionnaire as viable choices. The questionnaire type selected was self-administered delivery and collection in Arabic and English because the pilot interview-administered questionnaire found that 90% of respondents did not understand English. Therefore the questionnaire was designed in both English and Arabic to address the needs of the respondents in order to increase sample size and response rates. In addition, the questionnaire needed to be completed relatively quickly otherwise respondents may skip questions or just tick answers without reading the question. The questionnaire had to be easy to understand in order to elicit proper answers.

On the other hand the questionnaire design for the institutional investors was administered via email, fax and delivery and collection at their place of work because these respondents are computer-literate. The postal, telephone, or structured interviews were not well suited for this group of respondents because many did not have a PO Box address and there was no access to respondents mobile numbers. The delivery and collection questionnaire required availability of field workers and resources that this researcher lacked. Therefore, the type of questionnaire design selected was self-administered internet/fax questionnaire. The questionnaire was administered to institutional equity investors while at work; therefore, it was designed to be completed in 15 minutes or less. Chapter 6 presents the results, describes the questions and links the questions in the questionnaires to the sub-questions for this thesis. Questionnaires administered to individual and institutional equity investors can be found in Appendix C.

5.5.2 PRIMARY DATA AVAILABILITY AND TREATMENT

The ASE has approximately 800,000 shareholders, 43.5% of the shares are held by Jordanian corporate and individual investors, 49.6% by foreign investors and 6.9% by the government through the Jordan Investment Corporation (ASE, 2012). The SDC maintains a database of all investors but the information is private and kept confidential. Investors' names, telephone, address, email, etc, are not released, therefore, the sample frame is unknown. Non-probability sampling techniques are employed to collect as large a sample as possible to achieve data saturation or where additional collection of data provides few insights (Saunders, et al., 2009, p. 235).

The primary data for the survey research method are available from the administration of two questionnaires previously discussed. Figure 5.27 summarises the access, availability and treatment for primary data collected from questionnaires administered to individual and institutional equity investors of the ASE.

Data requirements for the questionnaires depend on the research questions. The design of the questionnaires employs three types of questions to ask equity investors about the decision-usefulness of financial information. Opinion, behaviour and attribute questions were asked using dichotomous, Likert scale, multiple response and open-ended questions. The purpose was to get as complete information as possible to best answer the research questions. Table 5.3 presents the data requirements for each research question including the investigative questions needed for the questionnaires, the variables required and the measurement detail for the data. The wording in the questionnaires used the term IFRS rather than IAS/IFRS because the IAS has been replaced since 2002.

What data is needed?	• Primary data is needed from equity investors in the ASE. • Specifically needed are questions that can be used to answer the research questions.
Where are equity investors located?	• Equity investors of the ASE can be found in Jordan and around the globe.
How was the questionnaire administered to equity investors?	• Individual investors frequent trading galleries located at the Housing Bank Complex in Amman Jordan during ASE trading hours Sun-Thurs. Institutional investors can be reached via telephone, e-mail and face -to-face. • Individual questionnaire was administered by self-administerd and delivery method while the institutional questionnaire was sent also via fax and email.
Who administered the questionnaire? When was the questionnaire administered?	• The questionnaire was administered to individual investors during December 2010. • The instutional equity questionnaire was administered during June 2011. • Both questionnaires were administered by this researcher and other field workers.
How was the data selected?	• Respondents'answers were included in the data set. • Unanswered questions were excluded.
How was the data analysed & interpreted?	• The data was analysed with quantitative and qualitative descriptive methods. The data was interpreted using descriptive analysis presented in tables and figures.

Figure 5.27: Primary data access, availability& treatment

Table 5.3: Data requirements table for equity investors' questionnaires

Main research question/objective:

To investigate if publicly available accounting information produced by implementing IAS/IFRS is useful to equity investors in the ASE as inputs into their investment decision-making process?

Type of research: explanatory

Sub-questions	Investigative questions	Variables required	Detail in which data measured
SQ1: Do equity investors in the ASE use the accounting information-based models, P/E and P/B, as inputs into their investment decision-making process?			
	1) Do you invest in common shares of the ASE?	Behaviour	List: yes/no
	2) Do you use accounting information to make investment decisions?	Behaviour	List
	3) Specify which accounting information you use?	Attribute	List
	4) For what purpose do you use accounting information	Behaviour	List
	5) Are you familiar with the IFRS required by the ASE for listed companies?	Opinion	List: yes/no
	6) Do you agree that companies listed in ASE should comply with the IFRS?		List: yes/no
	7) Rank usefulness & qualitative characteristics of decision useful information.		Likert rating
	8) Explain why accounting information produced from applying the IRS is or is not useful.		Open
	9) Are there any other financial reporting standards that you believe would produce more decision-useful a/c information? Please specify	Attribute	List: yes/no
	10) Should Jordan develop its own national financial reporting standards?	Opinion	List: yes/no
Sub Q2: What models have been used to examine decision-usefulness of accounting information as a result of implementing the IFRS?			
	11) Do you use investment models to evaluate and select shares for your investment portfolio?	Behaviour	List: yes/no
	12) Rank investment models according to degree of usefulness?	Opinion	Likert scale
Sub Q3: How have developments within the ASE & the Jordanian accounting profession influenced the decision-usefulness of accounting information produced from implementing the IFRS?			
	13) How have developments within ASE influenced the decision-usefulness of accounting information?		
	14) How have developments within the Jordanian accounting profession influenced the decision-usefulness of accounting information?	Opinion	Open

Source: Adapted from (Saunders, et al., 2009).

5.5.3 LIMITATIONS OF THE SURVEY RESEARCH

The survey research method is subject to limitations such as low response rates, question misspecification, inaccurate measurement of variables and statistical methods, among others. Limitations to the use of questionnaires depend on the type of questions employed and how they are measured. Bias can occur in several ways. First, respondents may not understand the question asked. Questionnaire design must ensure that questions are easy to understand to reduce this bias. Second, Likert scale questions measure an opinion with a positive, negative or neutral response to a statement. If respondents want to avoid extreme answers, they answer with a neutral statement that introduces bias. Third, some respondents lack the motivation to complete long questionnaires that introduce a non-response bias. Questionnaire design should have a short layout to overcome this bias. Fourth, contradictory answers by respondents can be minimised by asking respondents to clarify vague answers to open-ended questions when they return the questionnaires, if possible. Fifth, multiple checking of the database and results by the researcher and others removes data entry and tabulation errors. Relevant tests and control procedures are performed to reduce or eliminate any measurement limitations that exist.

5.6 QUALITATIVE RESEARCH METHODOLOGY

Modern research is increasingly employing multiple research methods to investigate a research question. While quantitative methods use numerical data and employ statistical analysis and hypothesis testing to arrive at objective findings, qualitative methods use descriptive analysis to interpret the information collected to arrive at subjective findings. Qualitative results can be used to gather in-depth information to gain deeper understanding of the findings produced by quantitative research. Both may complement and support the other given that the appropriate techniques and analysis are selected and are linked to the objective of the research. Figure 5.28 shows the different forms of interviews that are available to researchers.
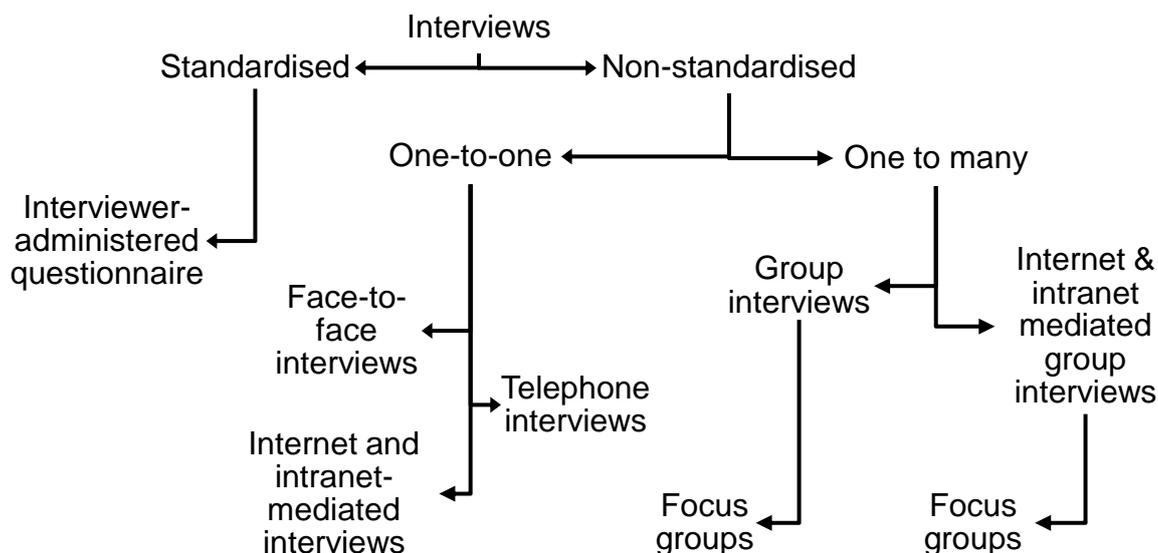
Figure 5.28: Forms of interview
Source: (Saunders, et al., 2009, p. 321).

The purpose of the research indicates the appropriate form of the interview(s) that are used in the study. By identifying the purpose of the research, 'various types of interviews are used to gather information for, and assist the progress of, each kind of study (Saunders, et al., 2009, p. 322). Table 5.4 presents the different forms of interviews that are used for each research category. As can be seen in Table 5.4, the most appropriate type of interview is the non-standardised semi-structured interview. Each respondent is interviewed separately; therefore, the form of interview is semi-structured conducted on a one-to-one basis. However, questions for the interviews are prepared in advance and a guided approach is used to ask the same questions to all interviewees. The guided interview approach enables comparison and analyses of the same questions that provides more focus to the study.

Table 5.4: Use of different types of interviews for main research categories

	Exploratory To find out what is happening & seek new insights	Descriptive To identify general patterns	Explanatory To understand relationships between variables, such as those revealed from a descriptive study
Structured		✓✓	✓
Semi-structured	✓		✓✓
Unstructured	✓✓		
	✓✓ =more frequent		✓=less frequent

Source: (Saunders, et al., 2009, p. 323).

5.6.1 DESCRIPTION OF THE INTERVIEWS

In-depth interviews were conducted to a member of the ASE and to members of the accounting profession in Jordan for the main purpose of gathering information to investigate the decision-usefulness of accounting information produced from the implementation of IAS/IFRS to equity investors of the ASE. The main objective of the interviews was to collect opinions from experts regarding the influence the ASE and the accounting profession have on the usefulness of financial information in order to gather in-depth information to answer SQ3. Equity investors were not interviewed, firstly because they may not be experts on the accounting profession and its influence on decision-usefulness of accounting information. Secondly, the views of equity investors are documented via questionnaires administered to them. Questionnaire methodology was discussed in the previous section. The interview method was selected to support the findings of the quantitative and survey methods. One advantage of qualitative research using interviews is that it is very flexible. An interview protocol was developed to increase the validity of the study (Yin, 2009). The interviewer asks the same prepared questions but allows the interviewee to elaborate or clarify any ambiguous statements on the spot. Furthermore, the opportunity to ask follow up questions that were not considered before may provide deeper content and enrich the analysis. A natural setting such as an office provided a more comfortable atmosphere to answer the questions. This allowed respondents to relax and answer more freely. The reason for selecting the semi-structured interview was to allow participants the freedom and flexibility to add any other comments or opinions on the topics discussed. However, ethical considerations were taken into account and the confidentiality of the interview was ensured to all participants. In effect, more detailed information can be gathered using the interview method than using other research methods.

A total of five interviews were conducted. Four interviewees were selected from experts in the accounting and auditing profession in Jordan. One interviewee was selected from the ASE. Details of each interviewee's biographical profile are presented in chapter 6 along with the findings of the interviews. The interviews provided further insights into the decision-usefulness of financial information that are explained and analysed in Chapter 6.

5.6.2   PRIMARY DATA AVAILABILITY AND TREATMENT

The primary data needed from the interviews are the responses provided by the accounting and ASE experts who have participated in the interview process. Answers were recorded on paper and collected for qualitative analysis using manual methods. Record keeping included the time and date, setting of interview, any background information on the interviewee, and immediate impressions. The duration of the interviews was between 45 minutes to one hour. The interviews were conducted face-to-face in a natural setting. The interviews employed descriptive content analysis to interpret and analyse the results rather than data measurement and hypothesis testing. Chapter 6 explains the interview process with emphasis on the results of the interviews.

5.6.3   LIMITATIONS OF THE INTERVIEW RESEARCH

Semi-structured interviews may present data quality issues such as reliability, interviewer bias and response bias, validity and generalisability (Saunders, et al., 2009, p. 326). Semi-structured interviews that are not standardised may have reliability concerns because if the same interview were to be conducted by another person it may or may not yield the same results. An argument to overcome the reliability issue 'is that the findings derived from using non-standardised research methods are not necessarily intended to be repeatable since they reflect reality at the time they were collected, in a situation which may be subject to change' (Marshall and Rossman 1999, in Saunders, Lewis & Thornhill, 2009, p. 327). Bias is controlled with careful planning, preparation and explanations to the interviewee. Respondent and interviewer bias can be controlled by repetition of questions and answers that are misunderstood. The use of simple, clear open-ended questions and proper behaviour and language will go a long way to reducing bias. Generalisability is an issue where there is a small unrepresentative sample, however the interviews in this study are not the main research methodology. Findings from the interviews are used to crosscheck data and complement the findings of the quantitative research. Additionally, the interviews are employed to seek new insights and therefore the findings may open up new areas for further investigation and research.

5.7   SUMMARY

Chapter 5 explained the research process in general and the research plan for the study. A mixed method research was employed because it allowed for the most robust manner to answer the research questions. The quantitative research methodology employed market-based models to empirically test for the decision-usefulness of accounting information produced from implementing the IAS or IFRS to equity investors of the ASE. Questionnaires administered to equity investors of the ASE are analysed using non-parametric statistics to test for decision-usefulness of accounting information and influences to financial information. Qualitative descriptive analysis is employed on open-ended questions and interviews conducted to members of the ASE and the accounting profession. Results for the quantitative and qualitative research methodologies are analysed and presented in the next chapter.

Chapter 6

ANALYSIS OF RESULTS

This chapter presents the analysis of results for the three research methodologies employed in the study. The research methods are holistic and complementary employing a multi-data-gathering strategy that uses a process of data triangulation to investigate the same research questions. Data triangulation enables verification of the findings with different evidence that increases the reliability and validity of the study (Yin, 2009, p. 116; Patton, 1999; Saunders, et al., 2009). The quantitative research methodology employed parametric statistics using archival financial data; the survey research methodology employed nonparametric and descriptive statistics using data from questionnaires. Descriptive analysis of narrative information collected via interviews to accounting experts in Jordan was employed for the qualitative research methodology.

The results for the quantitative research methodology are presented in section 6.2. Hypotheses testing are employed to investigate the relationship between the BVPS and REPS and share market prices to examine decision-usefulness of financial information. Operational forms of the REM was developed and tested using regression analysis for three-study periods: pre-IAS/IFRS from 1980-1989, IAS from 1991-2001 and IFRS from 2002-2009. Statistical data was collected and presented in tabular form for easier analysis, interpretation and presentation of results.

Secondly, the findings of the survey research methodology are presented in section 6.3. The main purpose of the questionnaires is three-fold. Firstly, to investigate if equity investors of the ASE use models such as the P/E and P/B,

which are based on accounting information from the BVPS and REPS. Secondly, to investigate if the models are useful as inputs into their investment decision-making process. Thirdly, to gather opinions regarding how developments within the ASE and accounting profession have influenced decision-usefulness of financial information. Quantitative and qualitative research was used for the survey methodology via questionnaires administered to two groups of equity investors of the ASE, individual and institutional equity investors. Descriptive analysis of the results for the questionnaires were presented in tabular and graphical forms such as tables and figures.

Finally, the results of the qualitative research methodology are presented in section 6.4. Interviews were conducted to professional accounting experts in Jordan and to a member of the ASE. The purpose of conducting interviews was to collect opinions from experts regarding the influence the ASE and the accounting profession have on decision-usefulness of financial information. Verbal information gathered from the interviews is recorded and interpreted using qualitative research analysis. One advantage of the qualitative research method is that it is very flexible. The interviewer can ask questions and follow up for ambiguous statements or ask follow up questions for deeper content. The interviews are conducted in natural settings using content analysis to interpret and analyse the results rather than data measurement and hypothesis testing. Data from the questionnaires and interviews provide multiple sources of evidence that enables verification of the statistical research findings. The combination of the three data sources allows cross data checking that produces more robust findings for the study. Furthermore there is greater confidence for conclusions to be drawn so implications can be made and recommendations offered.

This study employs statistical packages and software such as Eviews, SPSS, XLSTAT, MSEXCEL and MSWORD to analyse and present the descriptive statistics, linear regressions and descriptive analysis of results. Figure 6.1 presents the structure of chapter 6.

Chapter 6
Analysis of results

6.1 Link between research questions and research methods

6.2 Quantitative research

6.2.1 Hypotheses for testing
operational forms

6.2.2 Data availability, data collection
& handling criteria

6.2.3 Validity

6.2.4 Regression results

6.2.4.1 Statistical results for BVPS and
REPS

6.2.4.2 Interprtation of results

6.3 Survey research

6.3.1 Validity

6.3.2 Survey design

6.3.3 Survey participants

6.3.4 Profile section results

6.3.5 Survey section results

6.4 Qualitative research

6.4.1 Qualitative research design

6.4.2 Profile of interview participants

6.4.3 Influence of ASE on decision-
usefulness of financial information

6.4.4 Influence of accounting & auditing
profession on decision-usefulness of
financial information

6.5 Summary

Figure 6.1: Structure of chapter 6

6.1 LINK BETWEEN RESEARCH QUESTIONS AND METHODS

The main purpose of undertaking this research is to ask a key question that can be systematically examined with as many sources of evidence to analyse and interpret the findings. This enables the researcher obtain valid results to arrive at reliable conclusions and implications. To accomplish the objective, all efforts are focused on answering the research question by constructing a plan that links questions to the detailed method for answering, such as a roadmap. The main research question is: *Is publicly available accounting information produced by implementing IAS/IFRS useful to equity investors in the ASE as inputs into their investment decision-making process?* Results from three research methods are used to answer the research question and sub-questions of the study. The first sub-question (SQ1) is: *Do equity investors in the ASE use the accounting information-based models, P/E and P/B, as inputs into their investment decision-making process?* All three-research results are used to answer SQ1. Financial data required for the quantitative method is available from the annual shareholders' guide published by the ASE for all listed companies. Archival data is collected and entered into a database for statistical programming, analysis and interpretation. The data required for the survey method is gathered from questionnaires administered to equity investors of the ASE. The data is entered into a survey database for nonparametric statistical analysis interpretation. The second sub-question (SQ2) is: *What models have been used to examine decision-usefulness of accounting information as a result of implementing IAS/IFRS?* The survey method and critical analysis of empirical literature for similar studies from chapter 3 are used to answer SQ2. The third sub-question (SQ3) is: *How have developments within the ASE and the Jordanian accounting profession influenced the decision-usefulness of accounting information produced from implementing IAS/IFRS?* In addition to the survey and qualitative methods, descriptive analyses of the environmental influences discussed in chapter 4 are used to answer SQ3.Table 6.1 links the main research question and sub-questions in the study with the results for each research method used to answer the questions. Table 6.1 also includes the data requirements and collection techniques along with the data measurement detail for each research method.

Table 6.1: Links between research questions, research methods and results

Main research question:

Is publicly available accounting information produced by implementing IAS/IFRS useful to equity investors in the ASE as inputs into their investment decision-making process?

Sub-questions	Research method used to answer the question	Data required and collection techniques	Data measurement detail
SQ1) Do equity investors in the ASE use the accounting information-based models, REM, P/E and P/B, as inputs into their investment decision-making process?	Quantitative research method Section 6.2	Archival financial data for firms listed on ASE	Hypotheses testing using linear regressions
	Survey research method Section 6.3	Primary data collected from questionnaires to ASE investors	Non-parametric statistics Likert scale, descriptive statistics of nominal data
SQ2) What models have been used to examine decision-usefulness of accounting information as a result of implementing IAS/IFRS?	Survey research method Section 6.3	Primary data collected from questionnaires to ASE investors	Non-parametric statistics Likert scale, & descriptive statistics of nominal data
	Empirical literature review Chapter 3	Findings from similar studies from literature	Critical analysis of empirical studies
SQ3) How have developments within the ASE & the Jordanian accounting profession influenced the decision-usefulness of accounting information produced from implementing IAS/IFRS?	Survey research method Section 6.3	Primary data collected from 2 questionnaires to ASE investors	-Non-parametric statistics Likert scale, descriptive statistics of nominal data -Descriptive analysis of open ended questions
	Qualitative research method Section 6.4	Primary data collected from interviews	Descriptive analysis of open ended questions
	Background data Chapter 4	Secondary data	Descriptive analysis

The information presented in Table 6.1 is illustrated in Figure 6.2 that links the research questions with the research methods, data and results.
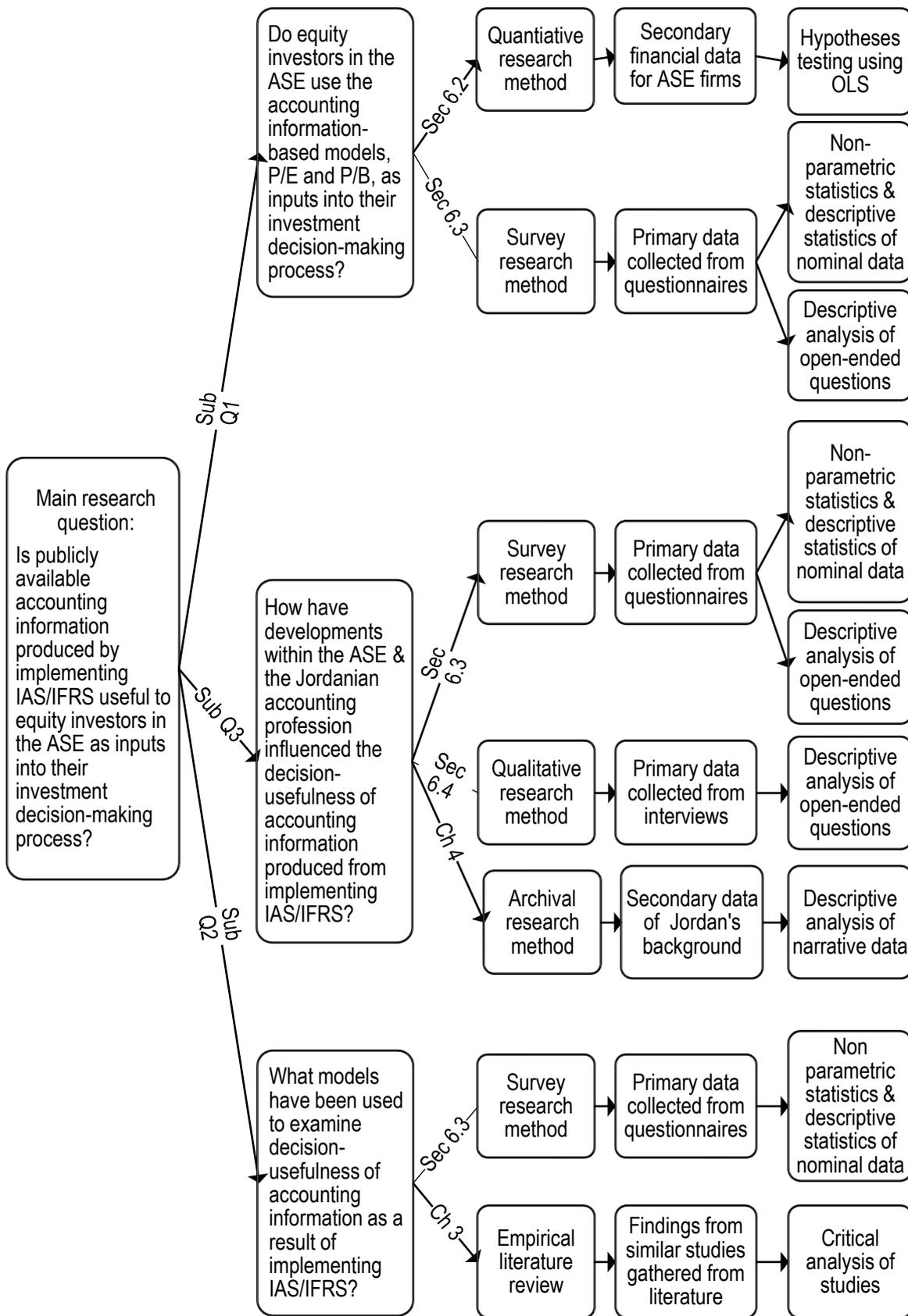
Figure 6.2: Link between research questions & research results

6.2   QUANTITATIVE RESEARCH

Operational form of the residual earnings model was developed in order to employ parametric statistical procedures to test the model for a significant relationship with share market values of firms listed on the ASE. A significant relationship would indicate the use of financial information produced from applying IAS/IFRS by equity investors of the ASE. Results for the BVPS and REPS are presented. The operational form for the model is expressed in equation 6.1.

$$P_{i,t} = \alpha_0 + \alpha_1 \, BVPS_{i,t} + \alpha_2 \, REPS_{i,t} + e_{i,t} \tag{6.1}$$

Where:

$P_{i,t}$	= dependent variable, share market price for firm i in period t
t	= 1,…, T Period index
i	= 1,…, N Firm's index
α_0	= regression constant or intercept coefficient
α_1, α_2	= regression coefficients to be estimated
$BVPS_{i,t}$	= book value per share for each firm i in year t
$REPS_{i,t}$	= residual earnings per share for each firm i in year t
e	= error term

It is expected that there is a significant relationship between the model and share market prices thereby indicating that equity investors of the ASE use financial information produced from applying the IFRS as inputs into their investment decision-making process.

6.2.1   HYPOTHESIS FOR TESTING OPERATIONAL FORMS

The operational forms are tested to find possible statistically significant associations between the dependent variable, P, and the independent variables, the BVPS and REPS. The hypotheses for the residual earnings model are described in Table 6.2 below.

Table 6.2: Null and alternate hypothesis for the residual earnings model

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Residual earnings model: BVPS

$H_{0,1}$ $\quad$ $\alpha_1 = 0$ $\quad$ There is no significant statistical relationship between the
$\quad$ $\quad$ $\quad$ BVPS and share market prices for firms listed on the ASE.

$H_{a,1}$ $\quad$ $\alpha_1 \neq 0$ $\quad$ There is significant statistical relationship between the
$\quad$ $\quad$ $\quad$ BVPS and share market prices for firms listed on the ASE.

Residual earnings model: REPS

$H_{0,2}$ $\quad$ $\alpha_2 = 0$ $\quad$ There is no significant statistical relationship between the
$\quad$ $\quad$ $\quad$ REPS and share market prices for firms listed on the ASE.

$H_{a,2}$ $\quad$ $\alpha_2 \neq 0$ $\quad$ There is significant statistical relationship between the
$\quad$ $\quad$ $\quad$ REPS and share market prices for firms listed on the ASE.

6.2.2 DATA AVAILABILITY, DATA COLLECTION TECHNIQUES AND HANDLING CRITERIA

Archival secondary data required for companies listed on the ASE are available from the annual shareholders guide published by the ASE in hardcopy or on the ASE website. Negative values for the net income were included. Details of data availability and handling criteria were discussed in sections 5.4.8 and 5.4.10. Financial data was entered into a statistical database and checked for accuracy using manual and computer techniques. Specifically, the accounting data collected included the year end share market price, book value per share and earnings per share for each company from 1980-2009. Table 6.2 presents the average number of listed companies in the ASE that were available for statistical regression analysis per year.

Table 6.3: Number of observations for listed companies on the ASE

Study Group	YEAR	Observations
Pre-IAS/IFRS study group	1980	53
	1981	60
	1982	79
	1983	89
	1984	92
	1985	93
	1986	73
	1987	89
	1988	86
	1989	90
IAS study group	1991	86
	1992	90
	1993	100
	1994	102
	1995	108
	1996	114
	1997	121
	1998	133
	1999	135
	2000	157
	2001	161
IFRS study group	2002	152
	2003	152
	2004	155
	2005	163
	2006	144
	2007	142
	2008	147
	2009	147
Total	29 years	3,313

Source: (ASE, 2012; Jordan Securities Commission, 2012; AFM, 1983-1995).

6.2.3   VALIDITY

To ensure that the findings of the study are valid, reliable and robust, the study should have internal and external validity. External validity means that results of the sample used for research can be generalised to the whole population of firms listed on the ASE. This study employs the whole population of firms listed on the ASE as the sample, therefore the results have good external validity. Internal validity is ensured when the sample is selected randomly so that the results would

be the same if repeated. As the data collected for the sample in the study is the population of the ASE, thus random sampling techniques were not required to ensure that the results would be the same every time. Reliability is ensured when there are no measurement or logic errors. Every attempt has been made to prevent these errors using systematic procedures to check and verify data and model specification. Robust research is ensured when data from more than one source is used to analyse and interpret the findings to answer the same questions. This was discussed earlier (see Table 6.1 and Figure 6.1).

6.2.4   REGRESSION RESULTS

Quantitative research results use regression analysis to predict a dependent variable from independent variables (Princeton University, 2007). In order to increase validity, the variables are examined during and before IAS/IFRS implementation to test for differences. Thus, a pre-IAS/IFRS was constructed to test for an association between BVPS and REPS and share market values. Since firms started to comply with the IAS in 1990, the pre-IAS/IFRS period is from 1980-1989. The year 1990 was excluded from both the pre-IAS/IFRS and the IAS period because some firms started using the IAS and other did not. 1990 was a transition year and inclusion may distort the findings in either sample. 108 yearly cross-sectional regressions were run for the operational form of the residual earnings model, for each study period: pre-IAS/IFRS (1980-1989), IAS (1991-2001) and IFRS (2002-2009). Statistical package employed was Eviews. When results show very high standard errors and low t statistics, this indicate multicollinearity. Regression results, in general, showed the opposite; therefore, multicollinearity test was not performed. Tests for autocorrelation, heteroscedasticity were also not performed.

6.2.4.1   STATISTICAL RESULTS FOR BVPS AND REPS

Results for the independent variables, BVPS and REPS, for the three study periods are analysed. The results assume a possible significant relationship between share market prices and BVPS and REPS.

Results for the pre-IAS/IFRS study group (1980-1989)

This is the period before any unified set of accounting standards were applied to external financial reporting by public shareholding companies in the ASE. The reported t-values for the BVPS variable for all 10 years reject the null hypothesis that states the nonexistence of a significant statistical association between share market prices and the BVPS variable. Five of the reported t-values for the REPS reject the null hypothesis of no significant statistical association between the REPS and share market prices. One t-value, 7.577, for the year 1982 rejects the null hypothesis at .01 significance level and four t-values reject the null hypothesis at the .05 significance level. This represents five out of ten years or 50% of the reported t-values that rejected the null hypothesis for the REPS. The remaining t-values indicate no statistical significance relating to the association between the REPS and share market prices at either the 99 or 95% level of confidence. The reported adjusted $\bar{R}^2$ indicates high explanatory power of the model with the adjusted $\bar{R}^2$ ranging from 70% - 99%. Eight of the ten years report explanatory power of greater than 90%. This indicates a strong relationship for the *BVPS* and share market prices and a weaker relationship between the REPS and share market prices.

Results for the IAS study period (1991-2001)

In 1990, it was mandatory for all publicly shareholding companies listed in the AFM to implement international accounting reporting standards in their external financial reporting process that were known as the International Accounting Standards (IAS). The year 1990 was a transition year since some companies complied with IAS earlier in the year than other companies that implemented IAS later. During this period an improvement in usefulness of accounting information is expected for equity investors of the AFM.

The reported t-values for the BVPS variable for all 11 years reject the null hypothesis that states the nonexistence of a significant statistical association between share market prices and the BVPS variable. For the REPS, ten of the reported t-values for the REPS reject the null hypothesis of no significant statistical association between the REPS and share market prices. Eight t-values reject the null hypothesis at .01 significance level and two t-values reject the null

hypothesis at the .05 significance level. One t-value, 1.668 for the year 1994, indicates no statistical significance relating to the association between the REPS and share market prices at either the 99 or 95% level of confidence. The reported adjusted $\bar{R}^2$ indicates high explanatory power of the model results with all the adjusted $\bar{R}^2$ reporting 95% or greater. This indicates a strong relationship for both the *BVPS* and REPS and share market prices.

Results for the IFRS study period (2002-2009)

During this period, IAS were replaced by International Financial Reporting Standards (IFRS). An improvement in the usefulness of accounting information as a result of implementation of IFRS was expected. The reported t-values for the BVPS variable for all 8 years reject the null hypothesis that states the nonexistence of a significant statistical association between share market prices and the BVPS variable. For the REPS, six of the reported t-values for the REPS reject the null hypothesis of no significant statistical association between the REPS and share market prices at .01 significance level and two t-values do not reject the null hypothesis of no statistical significance relating to the association between the REPS and share market prices at either the 99 or 95% level of confidence. The reported adjusted $\bar{R}^2$ indicates high explanatory power of the model results for the years 2002-2004 with the adjusted $\bar{R}^2$ reporting 99% or greater explanatory power. This indicates a strong relationship for both the *BVPS* and REPS and share market prices in those years. The adjusted $\bar{R}^2$ reported for 2007, 2008 and 2009 are 71%, 80% and 68% respectively. The years 2005 and 2006 report weak adjusted $\bar{R}^2$ of 55% and 48% respectively.

Table 6.4 presents the panel data for the regression results and Table 6.5 presents the descriptive statistics for the residual earnings model for the three study periods for the years 1980-2009. The tables include the results of the model parameters and descriptive statistics for each year during 1980-2009 for the following: year, book value per share (BVPS) and residual earnings per share (REPS), number of observations (No.observations), coefficients for BVPS and REPS, t-values, probability or level of significance (Probability), Adjusted $\bar{R}^2$ (Adj $\bar{R}^2$), standard error of the regression (SE regression), mean, standard deviation, and commercial lending rate (CLR).

Table 6.4: Parameter results for BVPS & REPS on price by year

Year	Variable	No. Observations	Coefficient	t-value	Probability	Adj $\bar{R}^2$
Panel A: Pre-IAS/IFRS period						
1980	Constant	53	-1.41	-1.726	0.091	0.914
	BVPS		1.81	**10.814***	0.000	
	REPS		-6.40	-0.885	0.381	
1981	Constant	60	-6.32	-2.340	0.023	0.740
	BVPS		2.96	**5.339***	0.000	
	REPS		53.45	**2.323****	0.024	
1982	Constant	79	0.22	0.561	0.576	0.964
	BVPS		1.51	**11.985***	0.000	
	REPS		44.03	**7.577***	0.000	
1983	Constant	89	-0.25	-0.616	0.540	0.949
	BVPS		2.01	**17.950***	0.000	
	REPS		7.66	1.371	0.174	
1984	Constant	92	-0.55	-2.806	0.006	0.983
	BVPS		1.57	**16.907***	0.000	
	REPS		12.86	**2.591****	0.011	
1985	Constant	93	-1.58	-5.324	0.000	0.979
	BVPS		2.13	**28.678***	0.000	
	REPS		12.76	**2.928***	0.004	
1986	Constant	73	0.52	0.390	0.698	0.691
	BVPS		1.48	**3.507***	0.001	
	REPS		-0.24	-0.628	0.532	
1987	Constant	89	-0.24	-0.958	0.341	0.979
	BVPS		1.60	**18.034***	0.000	
	REPS		0.11	1.539	0.127	
1988	Constant	86	-0.26	-0.902	0.370	0.978
	BVPS		1.85	**12.142***	0.000	
	REPS		0.25	**2.436****	0.017	
1989	Constant	90	-0.21	-1.061	0.292	0.994
	BVPS		1.75	**28.091***	0.000	
	REPS		-0.02	-0.793	0.430	
1980-1989	Constant	804	-0.74	-2.521	0.012	0.829
	BVPS		2.14	**49.946***	0.000	
	REPS		0.27	**8.130***	0.000	
Panel B: IAS period						
1991	Constant	86	0.29	1.091	0.279	0.970
	BVPS		1.87	**21.576***	0.000	
	REPS		0.20	**4.089***	0.000	
1992	Constant	90	1.69	6.009	0.000	0.967
	BVPS		0.91	**6.668***	0.000	
	REPS		-0.37	**-4.001***	0.000	
1993	Constant	100	1.27	2.858	0.005	0.953
	BVPS		1.28	**5.669***	0.000	
	REPS		-0.43	**-2.837***	0.006	
1994	Constant	102	0.60	2.623	0.010	0.985
	BVPS		1.83	**14.719***	0.000	
	REPS		0.13	1.668	0.099	
1995	Constant	108	-0.09	-0.511	0.611	0.994
	BVPS		1.33	**13.509***	0.000	
	REPS		-0.35	**-5.492***	0.000	

* .01 significance level ** .05 significance level

Table 6.4 (Continued)

Year	Variable	No. Observations	Coefficient	t-value	Probabiity	Adj R̄²
1996	Constant	114	-1.02	-2.942	0.004	0.978
	BVPS		1.90	**33.106***	0.000	
	REPS		0.12	**3.902***	0.000	
1997	Constant	121	-0.78	-4.719	0.000	0.998
	BVPS		1.61	**12.732***	0.000	
	REPS		-0.26	**-3.024***	0.003	
1998	Constant	133	-1.19	-5.541	0.000	0.993
	BVPS		1.78	**11.238***	0.000	
	REPS		-0.30	**-3.219***	0.002	
1999	Constant	135	-0.67	-5.020	0.000	0.995
	BVPS		1.47	**17.782***	0.000	
	REPS		-0.29	**-4.651***	0.000	
2000	Constant	157	-0.26	-2.770	0.006	0.993
	BVPS		1.18	**27.723***	0.000	
	REPS		-0.09	**-2.185****	0.030	
2001	Constant	161	-0.54	-5.614	0.000	0.995
	BVPS		1.42	**36.150***	0.000	
	REPS		-0.10	**-2.115****	0.036	
1991-2001	Constant	1307	-0.17	-1.639	0.102	0.964
	BVPS		1.48	**49.309***	0.000	
	REPS		-0.18	**-8.987***	0.000	

Panel C: IFRS

Year	Variable	No. Observations	Coefficient	t-value	Probabiity	Adj R̄²
2002	Constant	152	-0.08	-0.697	0.487	0.990
	BVPS		1.21	**30.565***	0.000	
	REPS		-0.07	-1.208	0.229	
2003	Constant	152	-0.84	-5.445	0.000	0.994
	BVPS		1.70	**21.375***	0.000	
	REPS		-0.75	**-4.945***	0.000	
2004	Constant	155	-1.50	-6.841	0.000	0.982
	BVPS		1.97	**22.895***	0.000	
	REPS		-1.21	**-6.642***	0.000	
2005	Constant	163	-0.52	-1.034	0.303	0.550
	BVPS		2.51	**9.740***	0.000	
	REPS		-0.20	-1.824	0.070	
2006	Constant	144	0.94	3.433	0.001	0.483
	BVPS		1.27	**8.028***	0.000	
	REPS		-0.27	**-2.749***	0.007	
2007	Constant	142	0.03	0.080	0.936	0.709
	BVPS		1.50	**6.897***	0.000	
	REPS		-1.08	**-8.838***	0.000	
2008	Constant	147	0.20	0.621	0.535	0.789
	BVPS		1.42	**6.630***	0.000	
	REPS		-0.58	**-9.145***	0.000	
2009	Constant	147	-0.86	-2.421	0.017	0.685
	BVPS		2.10	**9.091***	0.000	
	REPS		-0.40	**-3.451***	0.001	
2002-2009	Constant	1202	0.06	0.506	0.613	0.890
	BVPS		1.72	**46.673***	0.000	
	REPS		-0.18	**-3.283***	0.001	

* .01 significance level ** .05 significance level

Table 6.5: Descriptive statistics for BVPS & REPS on price by year

Year	Variable	No. Obs	Mean	Std deviation	5th Percentile	Median	95th Percentile
Panel A: Pre-IAS/IFRS period							
1980	Price	53	7.656	15.468	0.824	3.050	19.000
	Bvps		5.170	8.848	0.724	1.702	12.575
	Eps		1.068	2.220	-0.051	0.301	3.843
	Reps		-3.654	6.139	-10.295	-1.090	-0.477
1981	Price	60	12.415	31.088	0.793	3.530	33.625
	Bvps		4.783	6.646	0.840	1.634	13.944
	Eps		0.734	1.536	-0.186	0.207	3.359
	Reps		-4.820	7.805	-16.484	-1.635	0.059
1982	Price	79	7.354	15.112	0.814	2.890	28.560
	Bvps		3.318	6.179	0.725	1.346	11.976
	Eps		0.570	1.414	-0.058	0.161	2.531
	Reps		-3.183	4.995	-12.098	-1.200	-0.652
1983	Price		5.754	14.071	0.599	1.580	28.390
	Bvps	89	2.893	6.392	0.806	1.183	11.481
	Eps		0.587	1.459	0.016	0.130	3.017
	Reps		-3.327	7.245	-13.967	-1.506	-0.410
1984	Price		4.415	12.935	0.510	1.170	21.615
	Bvps	92	2.821	6.820	0.405	1.157	12.082
	Eps		0.522	1.459	0.025	0.158	1.899
	Reps		-3.369	7.985	-14.291	-1.404	-0.376
1985	Price		4.729	17.850	0.375	1.070	15.500
	Bvps	93	2.803	7.623	0.394	1.171	10.252
	Eps		0.468	1.398	0.008	0.140	1.418
	Reps		-3.377	8.815	-14.525	-1.438	-0.419
1986	Price		5.620	18.344	0.339	1.110	17.213
	Bvps	73	2.783	8.443	0.398	1.159	9.942
	Eps		0.395	1.536	-0.171	0.093	0.879
	Reps		-27.631	74.238	-101.857	-13.042	0.002
1987	Price		4.477	14.518	0.378	1.200	16.080
	Bvps	89	3.139	9.770	0.265	1.183	9.614
	Eps		0.365	1.534	-0.162	0.101	0.746
	Reps		-27.027	98.739	-66.778	-11.183	0.180
1988	Price		4.251	15.282	0.392	1.360	15.055
	Bvps	86	2.829	10.182	0.298	1.251	7.917
	Eps		0.324	1.711	-0.183	0.137	0.546
	Reps		-23.552	95.570	-35.736	-12.694	0.170
1989	Price		5.123	21.354	0.653	1.850	10.204
	Bvps	90	3.018	12.152	0.345	1.271	6.802
	Eps		0.775	3.093	0.021	0.236	1.346
	Reps		-41.552	155.896	-49.487	-17.479	-7.892
Panel B: IAS period							
1991	Price		4.671	13.134	0.595	2.300	14.500
	Bvps	86	2.839	8.457	0.448	1.361	8.717
	Eps		0.509	1.509	0.025	0.220	1.120
	Reps		-34.762	103.574	-103.695	-16.618	-4.398
1992	Price		5.877	13.480	0.743	3.340	15.505
	Bvps	90	2.953	9.253	0.464	1.445	6.634
	Eps		0.536	1.452	0.060	0.270	0.929
	Reps		-41.703	110.252	-96.666	-21.048	-9.140
1993	Price		6.460	18.618	0.787	3.300	14.653
	Bvps		2.863	9.568	0.348	1.455	5.578
	Eps	100	0.550	1.601	0.030	0.250	1.235
	Reps		-47.305	128.328	-112.544	-23.573	-9.567
1994	Price		5.252	17.200	0.800	2.890	11.085
	Bvps	102	2.894	10.558	0.681	1.517	4.374
	Eps		0.553	1.902	0.027	0.225	0.848
	Reps		-46.312	138.133	-76.575	-21.199	-11.514
1995	Price		4.897	21.188	0.702	2.325	7.967
	Bvps	108	2.887	11.398	0.676	1.467	4.093
	Eps		0.466	1.932	0.010	0.190	0.898
	Reps		-42.337	140.796	-58.016	-20.516	-9.589

Table 6.5 (Continued)

Year	Variable	No.Obs	Mean	Std deviation	5th Percentile	Median	95th Percentile
Panel B: IAS period							
1996	Price	114	4.754	22.470	0.480	1.740	7.703
	Bvps		3.260	13.137	0.585	1.497	4.696
	Eps		0.612	2.586	0.012	0.185	0.897
	Reps		-44.375	149.148	-71.719	-25.279	-7.281
1997	Price	121	4.561	28.282	0.360	1.350	6.595
	Bvps		2.858	14.266	0.638	1.265	4.406
	Eps		0.488	2.626	0.013	0.130	0.813
	Reps		-36.694	151.526	-55.646	-19.839	-6.885
1998	Price	133	3.120	17.781	0.272	1.105	5.615
	Bvps		2.100	7.756	0.604	1.159	4.345
	Eps		0.310	1.504	0.010	0.100	0.625
	Reps		-36.843	121.624	-53.806	-20.033	-8.499
1999	Price	135	2.898	16.040	0.280	1.060	4.663
	Bvps		2.177	8.709	0.523	1.131	3.168
	Eps		0.331	1.527	0.020	0.100	0.716
	Reps		-31.125	101.258	-51.074	-18.461	-4.970
2000	Price	157	2.319	11.902	0.280	0.950	4.286
	Bvps		2.127	9.405	0.405	1.120	3.085
	Eps		0.135	1.245	-0.316	0.030	0.529
	Reps		-27.340	95.758	-45.173	-15.073	-5.493
2001	Price	161	2.693	15.544	0.222	1.000	3.846
	Bvps		2.213	10.396	0.411	1.150	3.093
	Eps		0.164	1.282	-0.248	0.050	0.443
	Reps		-23.964	89.205	-31.564	-12.178	-4.622
Panel C: IFRS							
2002	Price	152	2.698	14.358	0.243	1.000	3.151
	Bvps		2.370	11.824	0.394	1.249	0.545
	Eps		0.202	1.248	-0.175	0.058	-4.740
	Reps		-22.404	89.713	-29.725	-11.097	5.820
2003	Price	152	3.962	23.529	0.323	1.600	3.091
	Bvps		2.592	13.101	0.483	1.357	0.532
	Eps		0.222	1.118	-0.112	0.107	-3.542
	Reps		-21.832	89.222	-26.946	-11.023	7.380
2004	Price	155	4.185	18.060	0.280	2.190	3.173
	Bvps		2.289	7.505	0.542	1.460	0.689
	Eps		0.259	0.709	-0.078	0.142	-3.326
	Reps		-18.414	56.049	-25.640	-10.417	13.390
2005	Price	163	4.431	5.851	0.588	3.040	3.972
	Bvps		1.893	1.567	0.794	1.520	1.140
	Eps		0.344	0.617	-0.100	0.190	-6.180
	Reps		-17.788	26.679	-31.438	-13.720	8.192
2006	Price	144	2.754	2.763	0.294	1.980	3.201
	Bvps		1.498	1.241	0.444	1.291	0.469
	Eps		0.060	0.305	-0.308	0.074	-3.972
	Reps		-14.983	11.473	-29.655	-13.405	8.459
2007	Price	142	3.448	4.301	0.903	2.255	3.208
	Bvps		1.620	1.217	0.593	1.315	0.546
	Eps		0.111	0.308	-0.270	0.098	-2.357
	Reps		-14.720	11.056	-34.208	-13.548	6.990
2008	Price	147	2.880	3.784	0.626	2.000	3.176
	Bvps		1.534	1.054	0.541	1.265	0.589
	Eps		0.110	0.473	-0.356	0.055	-0.256
	Reps		-16.448	10.987	-37.271	-15.082	7.378
2009	Price	147	2.676	3.773	0.550	1.695	3.276
	Bvps		1.560	1.138	0.573	1.285	0.456
	Eps		0.087	0.306	-0.258	0.049	-5.387
	Reps		-16.391	10.233	-34.162	-14.694	7.703

6.2.4.2 INTERPRETATION OF RESULTS

The main findings for statistical research answers SQ1 regarding equity investors' use of the accounting information, BVPS and EPS, as inputs into their investment decision-making process. Strong robust findings indicate that investors used the BVPS during the pre-IAS/IFRS, IAS and IFRS periods consistently. These results indicate that the BVPS played an important role in the investment decision-making process of equity investors of the ASE. This indicates the usefulness of accounting information (BVPS) during all periods.

Investors were not consistent in their use of EPS. The level of significance for earnings at either the .01 or .05 was 50% during the pre-IAS/IFRS period, 91% during the IAS period and 75% for the IFRS period. This indicates that investors differentiated between financial information produced from the IFRS or other standards with respect to earnings between the pre-IAS/IFRS period and the IAS and IFRS period. Statistical findings show 82% improvement in significance level for earnings between the pre-IAS/IFRS period and the IAS period. Figure 6.3 and Table 6.6 illustrate a summary of the results.

t-values (BVPS, REPS) and Adj R2 (average)
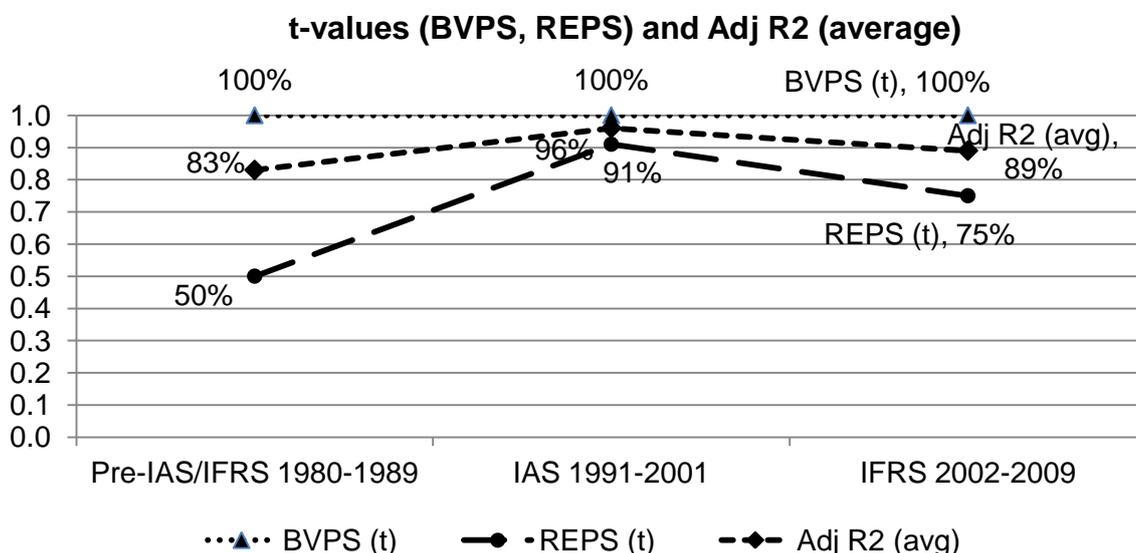

Figure 6.3: T-values for BVPS and REPS (%) and average adjusted R2

Possible explanations for these results might be that investors in the ASE did not use earnings as a predictor of the share market prices during the 1980s. Therefore it might be concluded that investors did not fully take into account earnings figures in their investment decisions in shares of companies in the ASE.

Table 6.6 summarizes the results stated above for each independent variable, and links the results to the null and alternate hypotheses.

Table 6.6: Summary regression results for the three study periods

Variable	BVPS	REPS
Year	$H_{0,1} \Rightarrow \alpha_1 = 0$	$H_{0,2} \Rightarrow \alpha_2 = 0$
Pre-IAS/IFRS study period		
1980	Reject*	Do not reject
1981	Reject*	Reject**
1982	Reject*	Reject*
1983	Reject*	Do not reject
1984	Reject*	Reject**
1985	Reject*	Reject**
1986	Reject*	Do not reject
1987	Reject*	Do not reject
1988	Reject*	Reject**
1989	Reject*	Do not reject
1980-1989	Reject*	Reject*
Total	**100% reject $H_{0,1}$**	**50% reject $H_{0,2}$**
IAS study period		
1991	Reject*	Reject*
1992	Reject*	Reject*
1993	Reject*	Reject*
1994	Reject*	Do not reject
1995	Reject*	Reject*
1996	Reject*	Reject*
1997	Reject*	Reject*
1998	Reject*	Reject*
1999	Reject*	Reject*
2000	Reject*	Reject**
2001	Reject*	Reject**
1991-2001	Reject*	Reject*
Total	**100% reject $H_{0,1}$**	**91% reject $H_{0,2}$**
IFRS study period		
2002	Reject*	Do not reject
2003	Reject*	Reject*
2004	Reject*	Reject*
2005	Reject*	Do not reject
2006	Reject*	Reject*
2007	Reject*	Reject*
2008	Reject*	Reject*
2009	Reject*	Reject*
2002-2009	Reject*	Reject*
Total	**100% reject $H_{0,1}$**	**75% reject $H_{0,2}$**

* .01 significance level, ** .05 significance level

This conclusion is expected since the application of accounting standards during this period did not depend on an independent set of reliable accounting guidelines for the external financial reporting. Accountants were guided by tax laws and applied subjective solutions to accounting problems. Accountants selected and applied accounting standards according to what they learned at university. The information produced in the external financial reports was full of distortions that made comparing financial positions among firms difficult. The financial information lacked the essential qualities of useful financial information. Therefore, equity investors could not fully rely on the external financial reports to make investment decisions. The financial information was not useful to equity investors of the AFM in their investment decision-making process. There was a 50% improvement in significance level for earnings between the pre-IAS/IFRS period and the IFRS period. Statistical results for the REPS indicate that implementation of the IFRS did improve the usefulness of accounting information compared to that of the pre-IFRS period but not as much as for the IAS period. Results for global financial crisis period, 2008-2009, indicate the use of REPS for both years during the period as reported t-values reject the null hypothesis.

In general, implementation of the IAS and IFRS had a positive influence on the decision-usefulness of accounting information for main users of external financial reports such as equity investors with respect to book value per share and to a lesser extent for earnings. The level of confidence remained at 99% with respect to the BVPS for all periods. Figure 6.4 illustrates the t-values for each variable that rejects the null hypothesis during the study periods. Average adjusted R^2 is presented for each study period.

Results of this study are similar to the contribution of Bernard (1993) who finds that the explanatory power of the book value explains more than 50% of the market price. Similar studies include Frankel and Lee (1999), Bernard (1994), Feltham & Ohlson (1995). In addition the results confirm the findings of Jensen, Johnson & Mercer (1997), Knez & Ready (1997) & Loughran (1997), Davis (2001), Graham and King (2000), Gornik-Tomaszewski & Jermankowicz (2001), Audoğan & Gürsoy (2001), Goldreyer, Chui, Wei (1998), Barry, Goldreyer, Lockwood, & Rodriguez (2001), Dahmash & Qabajeh (2012).

However results contradict Harris et al (1994) and studies for developed markets: Boastman & Baskin (1981), Cragg & Malkiel (1982), Ou & Penman (1989), Lev (1989), Liu, Nissim & Thomas (2000), Penman (1989), Campbell & Shiller (1998), Liu, Nissim & Thomas (2000), Penman & Zhang (2002); and studies for emerging markets: Audoğan & Gürsoy (2001), Claessens, Dasgupta & Glen (1995), Garza-Go'mez (2001, Thomas & Zhang (2004), and in Jordan: Haddad (2001a) and Abu Nassar & Al-Debi'e (2000), Haddad (2003).

6.3   SURVEY RESEARCH

This section presents the results for the two survey questionnaires administered to individual and institutional equity investors of the ASE. The main objective of the questionnaires is to gather the relevant information to investigate if equity investors of the ASE use financial information as inputs into their investment decision-making process. A second objective is to ascertain how useful the financial information is to investors using the joint IASB/FASB Conceptual Framework for qualitative characteristics of useful financial information. A third objective is to discover if equity investors use investment models, which models they use and how useful the models are. A fourth objective is to gather investors' opinions regarding the influences that the ASE and accounting profession have on useful financial information. This is particularly important because it indicates if the accounting information used in models employed to test for decision-usefulness of accounting information were actually used by equity investors of the ASE.

6.3.1   VALIDITY

As discussed in chapter 5, questionnaires should have internal validity which means the questions measure what they are supposed to measure and content validity or the extent to which measurement questions adequately cover the investigative questions (Saunders, et al., 2009, pp. 372-373).

In order to test the validity of the questionnaire and ensure reliability or 'robustness of the questionnaire' an exploratory pilot questionnaire was

constructed (Saunders, et al., 2009, p. 373) to gather the primary data to answer the sub-questions. The pilot questionnaire was administered to 20 individual and institutional investors to determine the most appropriate types of questions, length and language of questions to be used in the survey design. Results of the pilot questionnaire indicated that individual investors did not understand the questions in English whereas the institutional investors did understand them. Another finding was that both types of investors did not want to spend much time answering questions and many respondents were suspicious about disclosing personal information.

6.3.2   SURVEY DESIGN

A final version of both questionnaires was designed to accommodate the two types of investors (see Appendix C). The individual questionnaire had to be bilingual using Arabic and English translations. The institutional investor questionnaire was designed in English only which meant more questions could be included. The questionnaire was designed to fit into three pages and a fourth for the cover page. The questionnaire administered to individual investors contained 10 questions whereas the questionnaire to institutional investors contained 22 questions. Two types of questions were employed, closed-ended and open-ended questions requiring three types of variables. The closed-ended questions included three types. The first type used dichotomous questions such as yes/no responses with the values 1 for yes and 2 for no. The second type of questions used multiple-choice with only one answer allowed and questions with multiple answers allowed. The third type of question employed rating questions using a Likert scale (1-4 and 1-5) where only one answer was allowed per row to measure the level of usefulness of the variables. The Likert format allows measurement using quantitative analysis. Statistical nonparametric hypothesis test, the Chi-square test (X^2) is employed for a set of single variables in Likert scale questions. The chi-square test for one sample is "a test of whether the frequencies of cases in more than two categories in a sample differ significantly from chance or a specified frequency" (Bryman & Cramer, 2009, p. 355). Figure 6.4 presents the Likert scale and the range for a given choice depending on the question.

0.00-1.00
• **Nothing**
• **Not at all**

2.01-3.00
• **Moderately**

4.01-5.00
• **Extremely**

1.01-2.00
• **Slightly**
• **Little**

3.01-4.00
• **Very**
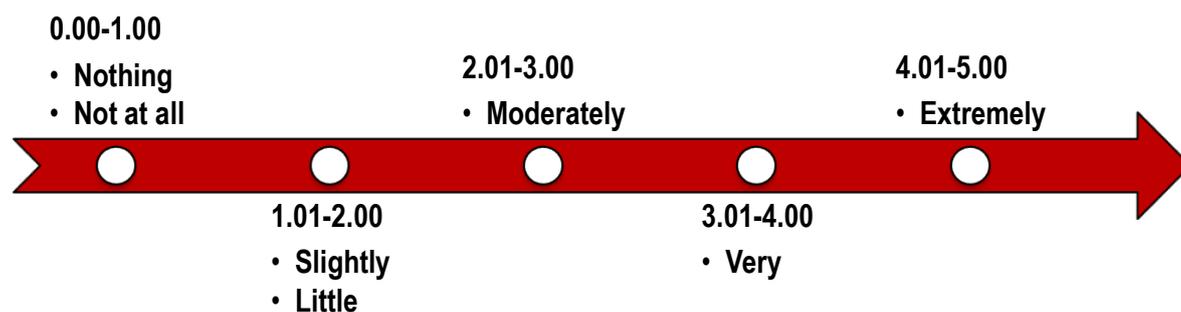
Figure 6.4: Likert scale range and interpretation

The questionnaires had a profile section and a survey section. Table 6.7 presents the link between the research questions and data requirements needed to answer the sub-questions to increase validity and reliability of questions.

The open-ended questions and the comment section were used to elicit more detailed and comprehensive information. An explanation of the purpose of the research, anonymity and confidentiality of responses were given to potential respondents. Attribute type questions that asked profile information were included in the questionnaires.

6.3.3 SURVEY PARTICIPANTS

As discussed in chapter 5, the average number of shareholders of the ASE during 2011 was 800,000. Jordanian individual and institutional investors owned about 43% of the shares, foreign investors owned 50% and the government owned 7% by through the Jordan Investment Corporation (ASE, 2012). The SDC maintains a confidential database of investors consequently the sample frame is unknown. Individual shareholders accounted for 99% of all equity investors while institutional and corporate shareholders accounted for 1%.The exact sample frame is unknown, therefore, non-probability sampling techniques were employed to collect as large a sample as possible.

A total of 300 questionnaires were administered to individual and institutional investors by fax, email and self-administered delivery methods. There were 243 questionnaires returned which represents a combined response rate of 81%. Equity investors did not complete all of the questionnaires.

Table 6.7: Data requirements for research questions from questionnaires

Main research question:

Is publicly available accounting information produced by implementing IAS/IFRS useful to equity investors in the ASE as inputs into their investment decision-making process?

Type of research: explanatory

SURVEY SECTION	Investigative questions used to answer sub-questions	Variables required	Detail in which data measured	Interpretation
Sub-question 1 Do equity investors in the ASE use the accounting information-based models, P/E and P/B, as inputs into their investment decision-making process?	• Do you use accounting information to make investment decisions?	Behavioural	List: 1 or 2	1=yes 2=no
	• Specify which accounting information you use?	Attribute	Open-ended	Grouping of answers
	• For what purpose do you use the information?	Behavioural	Open-ended	Content analysis
	• Are you familiar with the IFRS required by ASE for listed companies?	Opinion	List: 1 or 2	1=yes 2=no
	• Do you agree that companies listed in ASE should comply with IFRS?	Opinion	List 1 or 2	1=yes 2=no
	• Rank the extent to which financial information produced from implementation of the IFRS is useful, relevant, faithfully represented, verifiable, timely and comparable for making investment decisions.	Opinion	Likert scale Chi-square	1=nothing 2=little or slightly 3=moderately 4=very or considerably 5=extremely
	• Explain why accounting information produced from applying the IFRS is or is not useful.	Opinion	List	Content analysis of narrative data
	• Is there any other FRS that you believe would produce more useful accounting information? • Please specify	Opinion Attribute	List: 1 or 2 List	1=yes 2=no
	• Should Jordan develop national financial reporting standards?	Opinion	List: 1 or 2	1=yes 2=no

Table 6.7: Data requirements for research questions from questionnaires *(continued)*

SURVEY SECTION	Investigative questions	Variables required	Detail in which data measured	Interpretation
Sub-question 2 What models have been used to examine decision-usefulness of accounting information produced from implementing IAS/IFRS?	• Do you use investment models to evaluate &select shares for your portfolio?	Behaviour al	List: 1 or 2	1=yes 2=no
	• Rank the investment models you have used according to degree of usefulness.	Opinion	Likert scale Chi-square	5=extremely 4=very 3=moderately 2=slightly 1=not useful
Sub-question 3 How have the developments within the ASE and the accounting profession influenced the usefulness of accounting information produced from implementing IAS/IFRS?	• How have developments within the ASE influenced the decision-usefulness of accounting information?	Opinion	List Open ended	Descriptive analysis of narrative data
	• How have developments within the Jordanian accounting profession influenced the decision-usefulness of accounting information?	Opinion	List Open ended questions	Descriptive analysis of narrative data
Profile section **Profile questions**	• Do you invest in the shares of the ASE?	Behaviour al	List: 1 or 2	1=Yes 2=no
	• If yes, indicate the number of years you have been buying and selling shares listed on the ASE?	Attribute	Range 1-5	1=1-2 2=3-5 3=6-9 4=10-15 5=16 >
	• If yes, indicate the approximate number of companies listed in the ASE in which you own shares	Attribute	Range 1-5	
	• What is the current value of your investment portfolio in Jordanian dinars (JDs)?	Attribute	Range 1-5	1=<100,000 2=100,001-250,000 3=250,001-500,000 4=500,001-1mil 5=>1million

Source: Adapted from (Saunders, et al., 2009, pp. 368-371).

There were 200 questionnaires administered to individual equity investors by the self-administered delivery and collection method. 175 questionnaires were returned with an87.5% response rate. There were 100 questionnaires administered to institutional investors randomly from a list of ASE brokers, banks, insurance companies and other institutional investors by fax, email and self-administered delivery and collection methods. A total of 68 questionnaires were returned with a 68% response rate. Table 6.8 presents the data for the questionnaires administered and returned.

Table 6.8: Questionnaires administered and response rate

	Individual investors	Institutional investors
Total questionnaires administered	200	100
Questionnaires not returned	-25	-32
Questionnaires returned	175	68
Questionnaire response rate	87.5%	68%

Only equity investors of the ASE are included in the sample groups. The first question was a dichotomous question that asked if the questionnaire respondent was in fact an equity investor of the ASE and therefore could be included in the sample group. A total of 23 respondents indicated that they were not equity investors of the ASE that represents 7.6% of the administered questionnaires and 9.4% of the returned questionnaires. The final number of questionnaires included in both sample groups was 220 or 73% of all returned questionnaires. From the 175 questionnaires returned by individual investors, 13 responded that they were not investors in the ASE. As a result, 162 questionnaires were available for inclusion in the individual investors sample group. Of the 68 questionnaires returned, for the institutional investors 10 respondents answered that they were not investors in the ASE. As a result, 58 questionnaires were included in the institutional investors sample group. Table 6.9 specifies the total number of questionnaires administered, the number of respondents that returned them, the inclusion criteria and results from the first question and the total sample size for the individual investor questionnaires.

Table 6.9: Equity investors' sample size

Respondents who invest or do not invest in ASE	Individual investors	Institutional investors
Questionnaires returned	175	68
Respondents who do not invest in ASE	-13	-10
Sample size	**162**	**58**

6.3.4   PROFILE SECTION RESULTS

Profile questions measured investor attributes and behaviour and asked information regarding the investors' investment experience, the number of companies that they own equity shares and the size of their investment portfolio. All individual investors answered the questions. From the total sample, the majority of individual investors, 40%, had 3-5 years investment experience, 36% had 6-9 years experience. 7% had 1-2 investment experience, 10% had 10-15 years experience and 6% had more than 16 years experience investing in the ASE. Figure 6.5 illustrates the number of years individual investors have been investing in the ASE and the number of companies they own in their investment portfolios.
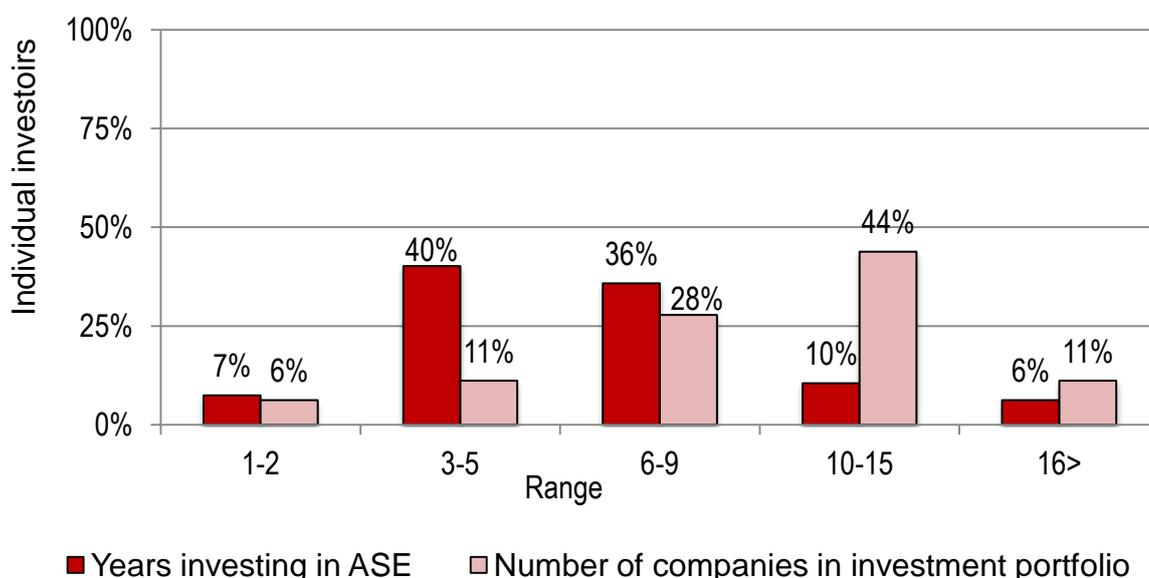

Figure 6.5: Investment profile of individual investors in the ASE

Not all institutional investors answered the profile questions. 43 respondents provided their investment experience. 35% of institutional investors have 6-9 years investment experience, 23% have 10-15 years, 21% have 1-2 years and another 21% have 3-5 years experience. Figure 6.6 shows the range in the number of years institutional investors have investment experience.
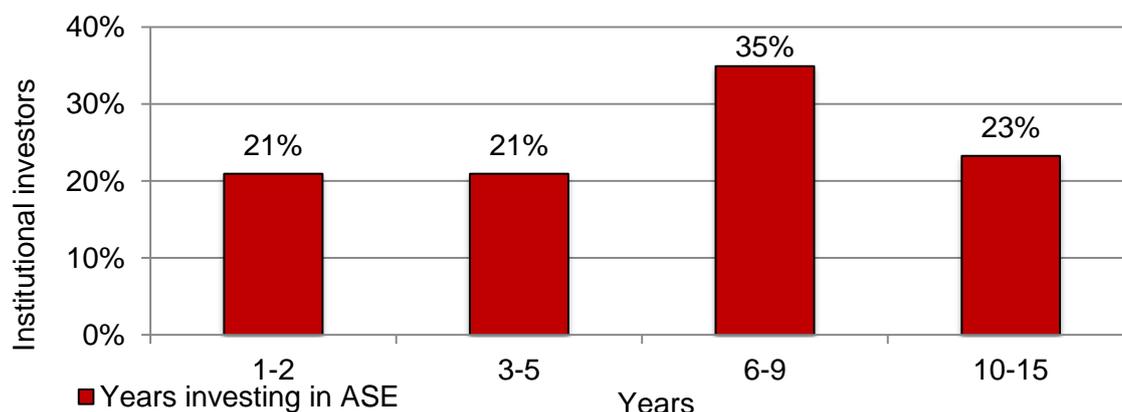
Figure 6.6: Investment experience of institutional investors (years)

Individual investors indicated the value of their investment portfolios in Jordanian dinars. The majority of individual investors (43%) had a value in the range of JD20,001-50,000. 30% had a portfolio valued in the range JD5,001-20,000, 12% had a range of JD50,0001-100,000, 11% had a range of less than JD5,000, 2% had a range of JD100,001-25,000 and 1% had a range of JD250,001-500,000 and JD500,001-1,000,000 each. The findings indicate that individual investors on average had between 3-9 companies in their portfolio and the average value of their portfolios was between JD 5,000-50,000. Figure 6.7 illustrates the range in the value of individual investors' portfolios.
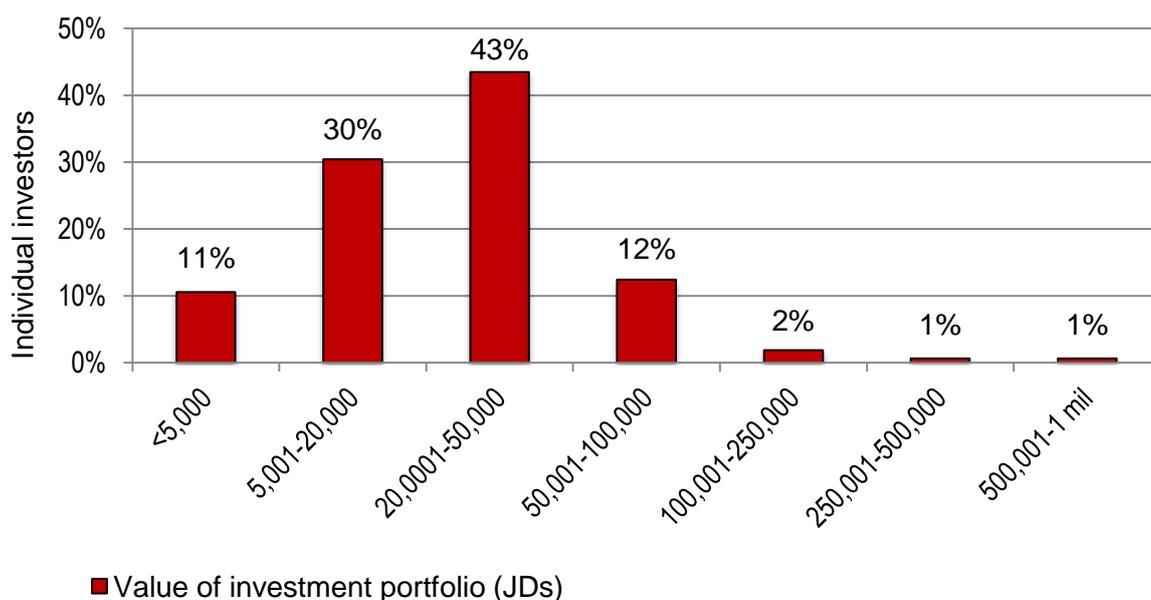

Figure 6.7: Profile of Individual investors' investment portfolios

37 institutional investors indicated who they buy and sell shares for. Almost all (89%) of the respondents say they buy and sell shares for their companies' investment portfolio. 70% responded that they invest for their own portfolio, 38% buy and sell for individual clients while 22% buy and sell for institutional clients. Figure 6.8 shows whom institutional investors buy and sell common shares for.
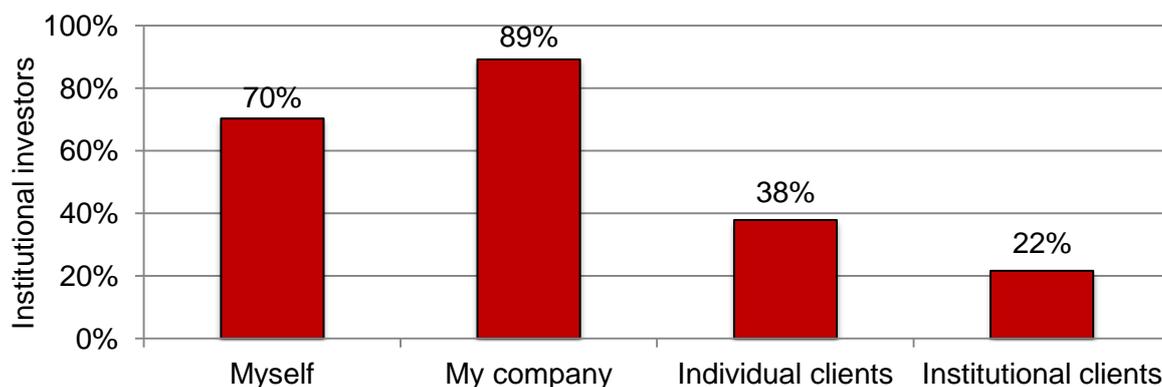

Figure 6.8: Trading portfolios for institutional investors

The majority of institutional investors were reluctant to release either information regarding the number of companies they have in their company and their clients' portfolios or information about the value of their investment portfolio, only a few responded to these questions.

6.3.5 SURVEY SECTION RESULTS

The results for the survey section are divided into three parts according to themes. The first part presents findings for the use of financial information, the usefulness of financial information and the familiarity with the IFRS. Findings for the use of investment models by investors are presented in the second part. The last part of the survey presents the findings for the influence that the ASE and the accounting profession have on the usefulness of financial information.

USEFULNESS OF ACCOUNTING INFORMATION

Investors were asked several questions regarding the usefulness of accounting information. Institutional investors were asked if they use accounting information to evaluate and select shares in the ASE for their investment portfolio, the kind of

accounting information, and the purpose of the use of the accounting information. The objective of this question was to determine investor use of accounting information and the purpose in order to answer SQ1. All respondents answered and results indicate that 100% of institutional investors use accounting information to buy, sell or hold shares on the ASE. 35 respondents specified which type of accounting information they use. The majority of these, 30%, indicated that they use audited financial statements or reports as the accounting or financial information. 12 institutional investors or 20% answered that they used financial ratios, 1% used profit figures and another used share price history. 23 respondents (39%) indicated that they used accounting information in their investment decision-making process to analyse the financial position of the company, its growth potential, and equity valuation. We still need to determine if the accounting information they use is decision-useful to make investment decisions on the ASE. Table 6.10 presents the results of the institutional investor use of accounting information. It can be concluded from Table 6.10 that accounting information has value to equity investors because 100% of the institutional investors use accounting information.

Table 6.10: Use of accounting information by institutional investors

100% Institutional investors use accounting information	Total respondent count	Audited financial reports	Financial ratios	Profit figures	Share price history
Type of accounting information used	35	30	12	1	1
Purpose for the use of accounting information	23	To analyse the financial position of the company for equity valuation to make investment decisions.			

Both groups were asked if they were familiar with the IFRS and if so, to give their opinion if listed companies should comply with the IFRS. The purpose was to establish if investors have knowledge of the IFRS in order to be able to continue the questionnaire. Results indicate that 77% of individual investors are familiar with the IFRS while 23% are not. Results indicate that 90% of individual investors believe that all listed companies in the ASE should comply with the IFRS. This

means that even some individual investors who are not familiar with the IFRS (23%) still believed that listed companies on the ASE should comply with the IFRS. Almost all or 98% of institutional investors are familiar with the IFRS while 2% are not. All institutional investors believe that all companies listed in the ASE should comply with the IFRS. It can be concluded from the responses that both groups are familiar with the IFRS. This enhances the IFRS role in the external financial reporting process. Figure 6.9 illustrates the results for both equity investor groups and Table 6.11 presents the data for both investor groups.
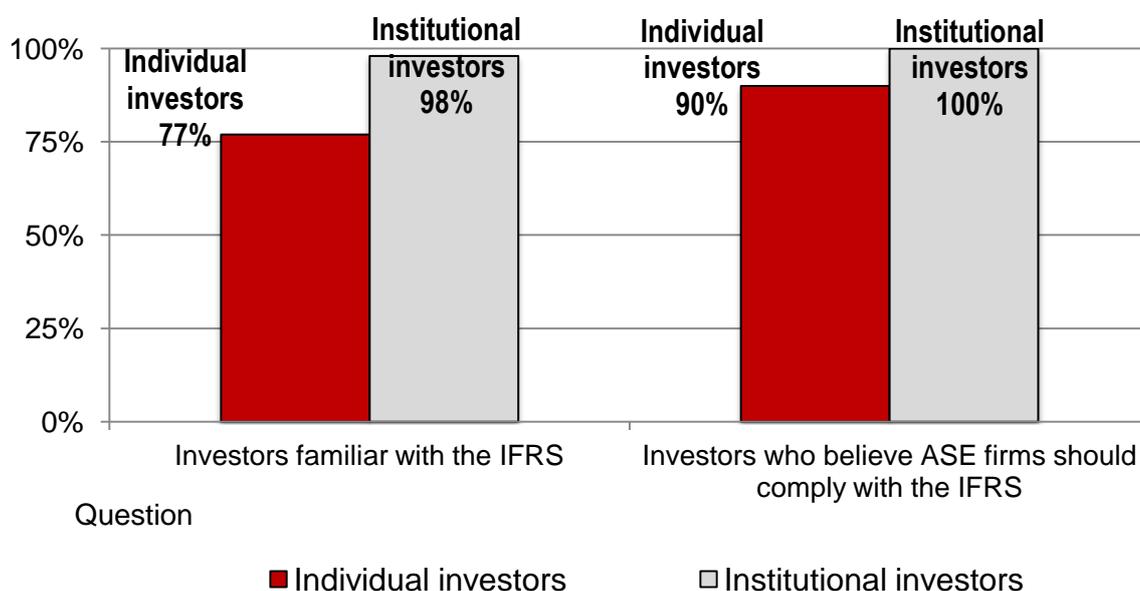

Figure 6.9: Equity investor familiarity with the IFRS

Table 6.11: Equity investors' familiarity with the IFRS

IFRS familiarity	Individual investors					Institutional investors				
	Total count	Yes #	Yes %	No %	No #	Total count	Yes #	Yes %	No %	No #
Respondents familiar with the IFRS	162	124	0.77	0.23	38	58	57	.98	.02	1
Respondents agree that companies listed in the ASE should comply with the IFRS	157	141	90%	10%	16	58	58	1.00	.00	0

Equity investors who were familiar with the IFRS were required to continue answering the survey to rank the usefulness of financial information produced from applying the IFRS. Between 134 and 137 individual investors ranked the usefulness of the qualitative characteristics that make financial information decision-useful as defined by the IASB in their Conceptual Framework. The framework was discussed in detail in chapter 3. Both investors were asked to rank the overall usefulness of financial information as well as the qualitative characteristics, relevance, faithful representation, timeliness, comparability. Institutional investors were asked two more enhancing characteristics, understandability and verifiability. The range of choices were from 1-5 with 1 being '*nothing*' and 5 being '*extremely*'.

The first variable regards the usefulness of financial information in general. 16% of individual investors responded that financial information produced from applying the IFRS is *extremely useful*, 54% replied that it is *very useful*, 10% believed it is *somewhat useful*, 19% answered that it was *little useful* and 1% indicated that it was *not useful* at all. The conclusion is that 99% of respondents believe in the usefulness of financial information. This signals good news for the IASB to seek more improvements in the accounting standard setting process.

The next variables are the two fundamental qualities that make financial information decision-useful, relevance and faithful representation. 10% of individual investors responded that financial information is *extremely relevant*. 49% replied it is *very relevant*, 20% replied *somewhat relevant*, 18% replied *little relevant* and 3 % said *not relevant* at all. 5% of individual investors responded that financial information was *extremely faithfully represented*, 47% answered it is *very faithfully represented*, 31% replied *somewhat faithfully represented*, 13% replied *little faithfully represented* and 4% replied *not faithfully represented* at all. Enhancing qualitative characteristics include timeliness and comparability among others. Enhancing characteristics complement the fundamental characteristics and can help distinguish more useful financial information from less useful information (Kieso, et al., 2011, p. 46). 7% of individual investors responded that financial information is *extremely timely* and *extremely comparable*. 49% said it is

very timely while 46% said *very comparable*. 27% said *somewhat timely* and 28% said *somewhat comparable*. Financial information is a *little timely* for 14% and 16% responded said it is a *little comparable*. 4% believed it is *not timely* at all and 3% *not comparable* at all. Figure 6.10 illustrates the results for the qualitative characteristics of useful financial information for individual investors. Table 6.12 presents the data, the results and the number of respondents for each qualitative characteristic.
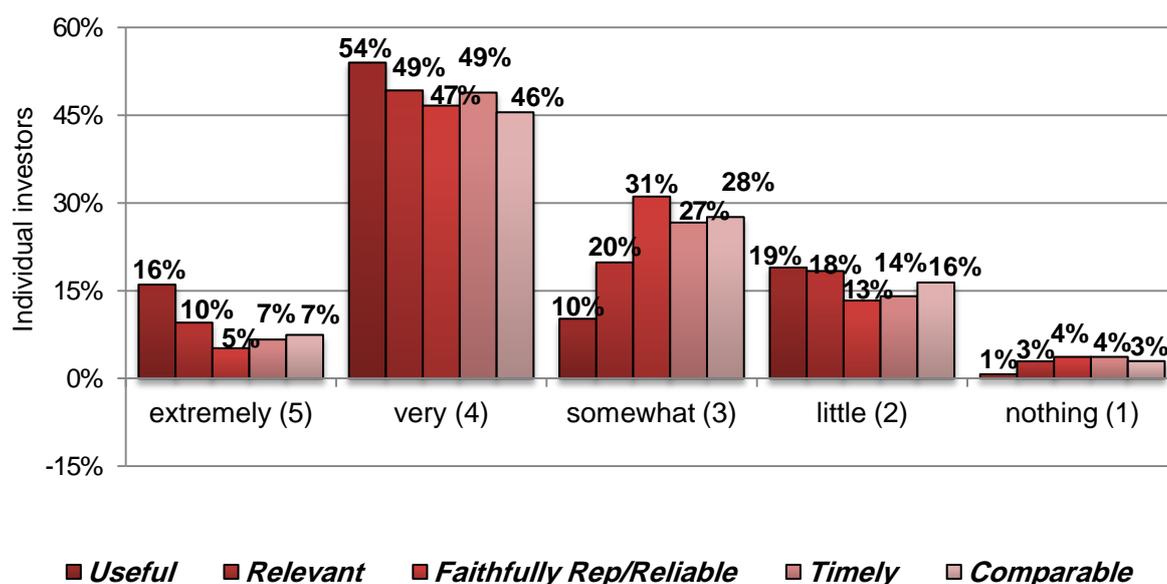

Figure 6.10: Qualitative characteristics ranked by individual investors

Table 6.12: Results of qualitative characteristics for individual investors

Qualitative characteristics	Total count	Extremely (5)		Very (4)		Somewhat (3)		Little (2)		Nothing (1)	
		%	#	%	#	%	#	%	#	%	#
Useful	137	.16	22	.54	74	.10	14	.19	26	.01	1
Relevant	136	.10	13	.49	67	.20	27	.18	25	.03	4
Faithfully Represented	135	.05	7	.47	63	.31	42	.13	18	.04	5
Timely	135	.07	9	.49	66	.27	36	.14	19	.04	5
Comparable	134	.07	10	.46	61	.28	37	.16	22	.03	4

In order to measure the relative importance of each qualitative characteristic for individual investors, they needed to be ranked from highest to lowest importance using the mean for each characteristic. The weighted average (WA) is used to calculate the mean. Additionally, chi-square tests were performed for all qualitative characteristics to test whether between the observed and expected frequencies of the sample distribution differ significantly from chance.

The rank mean for useful financial information is 3.66, which is higher than any other individual qualitative characteristic. All qualitative characteristics reported a mean between 3.44 and 3.36 which is interpreted as *very useful, very relevant* … etc. Specifically, relevance has the highest mean rank 3.44, followed by timeliness 3.41, comparable 3.38 and last is faithful representation 3.36. The mean for all the qualitative characteristics is very similar which means that they are equally important for individual investors. Results for all the chi-square tests indicate the rejection of the null hypothesis. Figure 6.11 illustrates the rank mean for each qualitative characteristic of useful financial information.

Individual investors
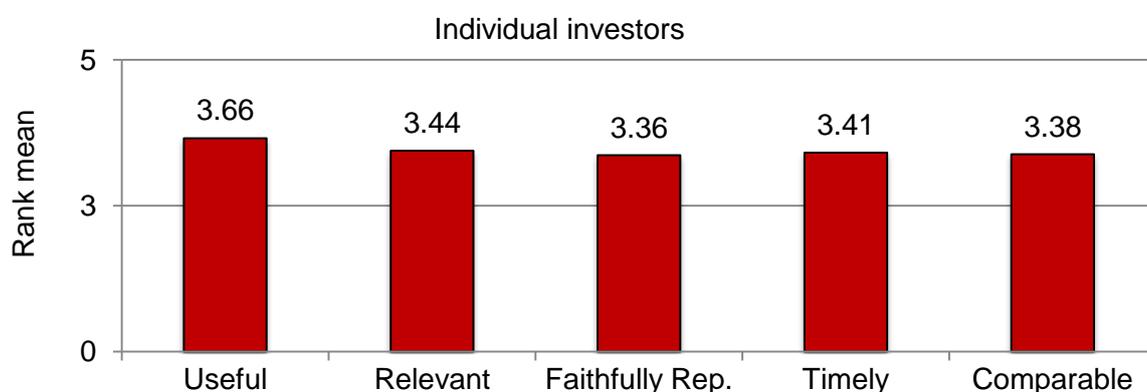
Qualitative characteristics of decision-useful financial informaiton

Figure 6.11: Importance of qualitative characteristics for individual investors

The chi-square tests for all qualitative characteristics rejected the null hypothesis which indicate that all variables are statistically significant at the .05 significance level with a 95% level of confidence. Chi-square results are summarised in Table 6.13, (see Appendix D), which also presents the mean average for each qualitative characteristic of useful financial information.

Table 6.13: Rank mean and chi-square test results for individual investors

| Qualitative characteristics	Rank mean (WA)*	Chi-square hypothesis test				
		Total N**	Test Statistic***	DF	Asym. Sig.****	Decision
Useful	3.66*	137	112.360	4	.000	Reject null hypothesis
Relevant	3.44*	136	85.618	4	.000	Reject null hypothesis
Faithfully Represented	3.36*	135	92.074	4	.000	Reject null hypothesis
Timely	3.41*	135	91.630	4	.000	Reject null hypothesis
Comparable	3.38*	134	78.313	4	.000	Reject null hypothesis

*Rank mean=*Very*
**N=number of observations
***There are 0 cells (0%) with expected values of less than 5. The minimum expected value is between 26.8 and 27.2.
****Significance level is .05. Asymptomatic Sig.(2-sided test)

An example of the chi-square test results that are summarised in Table 6.24 is illustrated in Figure 6.12 in order to show how results were collected from SPSS.
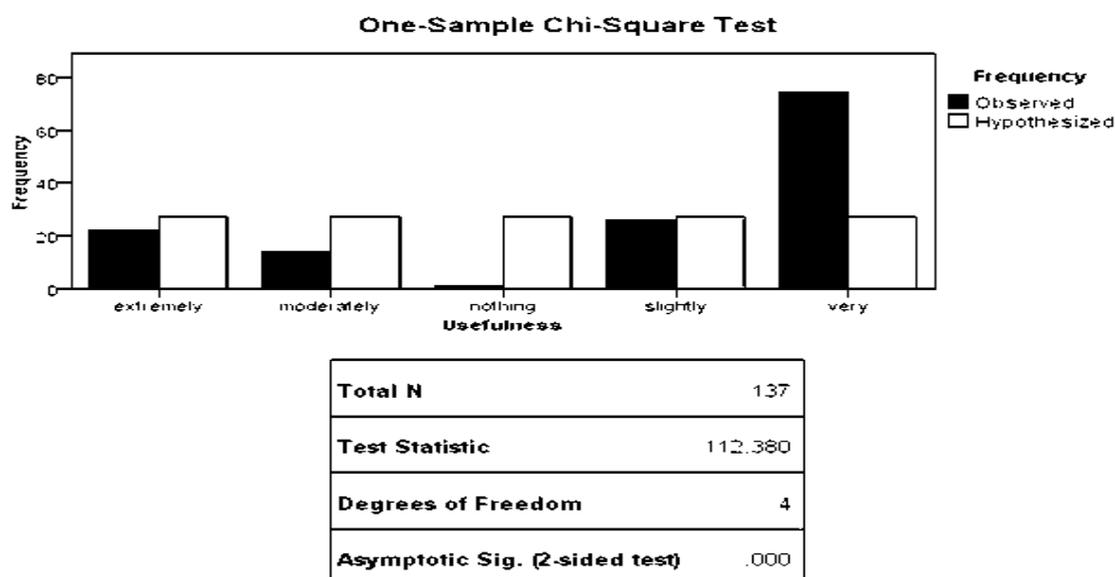
Figure 6.12: Chi-square test results for usefulness of financial information

Similarly, institutional investors were asked to rank the usefulness of financial information produced by applying the IFRS. All but one institutional investor

answered. The first variable is *usefulness* of financial information in general. 28% of institutional investors responded that financial information produced from applying the IFRS is *extremely useful*, 60% replied that it is *very useful*, 5% believed it is *moderately useful*, 4% answered it is *little useful* and 2% indicated that it is *not useful* at all. Results for the fundamental qualities are: 18% of institutional investors said financial information is *extremely relevant*. 58% *very relevant*, 19% *moderately relevant*, 4% *little relevant* and 2% said it is *not relevant*. 7% of individual investors responded that financial information was *extremely faithfully represented*, 49% believed it is very *faithfully represented*, 32% *moderately faithfully represented*, 9% *little faithfully represented* and 4% said it is *not faithfully represented* at all. Enhancing qualitative characteristics include verifiability, understandability, timeliness and comparability. 5% of institutional investors responded that financial information is *extremely verifiable*, 26% replied it is *very verifiable*, 46% said it is *moderately verifiable*, 19% *little verifiable* and 4%*said it is not verifiable* at all.12% said it is *extremely understandable*, 47% *very understandable*, 32% *moderately understandable*, 5% *little understandable* and 4% replied it is *not understandable* at all. 5% of institutional investors answered financial information is *extremely timely* and *extremely comparable*. 23% replied it is *very timely* while 32% said it is *very comparable*. 47% said the information is *moderately timely* and 16% *moderately comparable*. Financial information is a *little timely* for 12% and 4% responded it is a *little comparable*. 4% believe it is *not timely* at all and 2% said it is *not comparable* at all. Figure 6.13 illustrates the qualitative characteristics of decision-useful information.
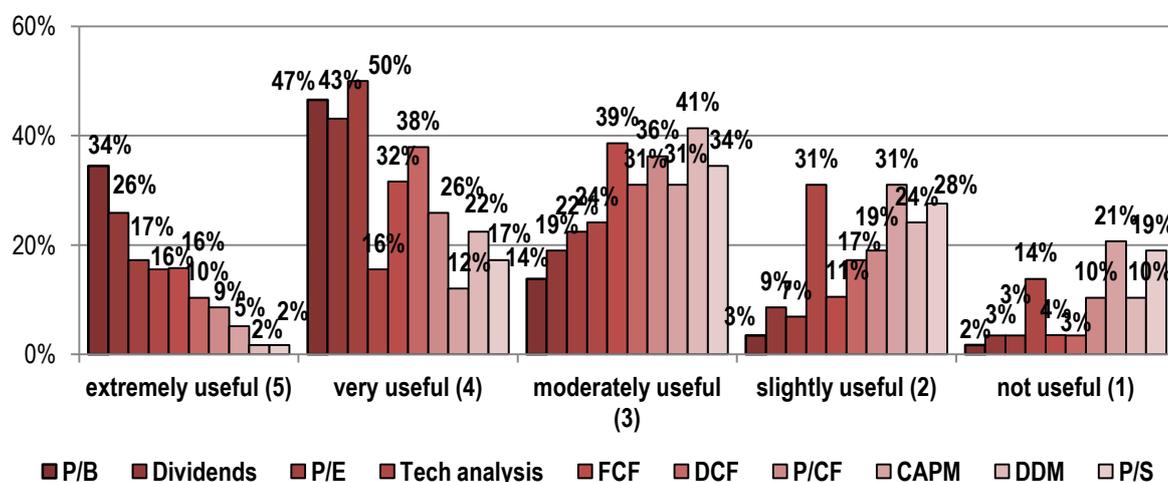

Figure 6.13: Qualitative characteristics ranked by institutional investors

Table 6.14 presents the data, the results and the number of respondents for each qualitative characteristic.

Table 6.14: Results of qualitative characteristics for institutional investors

Qualitative characteristics	Total respondent count	Extremely (5)		Very (4)		Moderately (3)		Little (2)		Nothing (1)	
		%	#	%	#	%	#	%	#	%	#
Useful	57	28	16	60	34	5	3	4	2	2	1
Relevant	57	18	10	58	33	19	11	4	2	2	1
Faithfully Represented	57	7	4	49	28	32	18	9	5	4	2
Verifiable	57	5	3	26	15	46	26	19	11	4	2
Understandable	57	12	7	47	27	32	18	5	3	4	2
Timely	57	5	3	32	18	47	27	12	7	4	2
Comparable	57	23	13	56	32	16	9	4	2	2	1

The relative importance of each qualitative characteristic for institutional investors is presented in Table 6.15, which shows the mean and the chi-square test results for each characteristic. The mean for useful financial information is 4.04 which indicates it is *extremely useful* reporting the highest mean. All the other qualitative characteristics reported mean ranks between 3.95-3.11 which is interpreted in the *very* category. Specifically, comparable financial information has a mean of 3.95, followed by relevance with 3.86, understandability with 3.60, faithful representation with 3.47, timeliness with 3.23 and last is verifiability with 3.11. Reported means are similar in value which indicates that all the qualitative characteristics were equally important for institutional investors. Figure 6.14 illustrates the rank mean for each qualitative characteristic of decision-useful financial information.
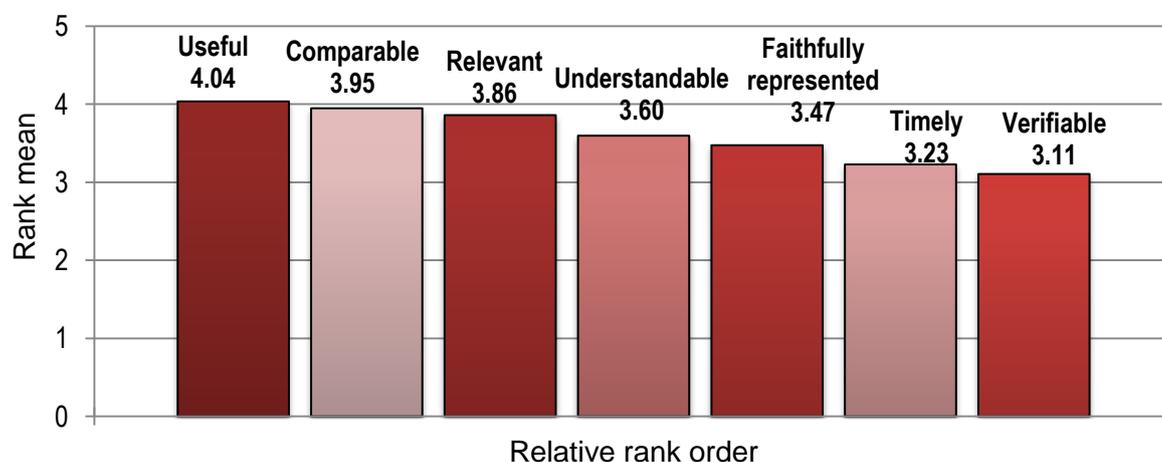

Figure 6.14: Importance of qualitative characteristics for institutional investors

The institutional investor chi-square tests for all qualitative characteristics rejected the null hypothesis which indicates that all variables are statistically significant at the .05 significance level with a 95% level of confidence. Chi-square test results are summarised in Table 6.15, (see Appendix D), which also presents the mean average for each qualitative characteristic of useful financial information.

Table 6.15: Rank mean and chi-square test results for institutional investors

Qualitative characteristics	Rank mean (WA)	Chi-square hypothesis test				
		Total N**	Test Statistic***	DF	Sig.****	Decision
Useful	4.04	57	68.702	4	.000	Reject null hypothesis
Relevant	3.86	57	58.351	4	.000	Reject null hypothesis
Faithfully Represented	3.47	57	44.140	4	.000	Reject null hypothesis
Verifiable	3.11	58	49.172	5	.000	Reject null hypothesis
Understandable	3.60	58	57.448	5	.000	Reject null hypothesis
Timely	3.23	57	40.807	4	.000	Reject null hypothesis
Comparable	3.95	57	55.193	4	.000	Reject null hypothesis

*Rank mean = *Very*   **N= number of observations
*** There are 0 cells (0%) with expected values of less than 5. The minimum expected value is between 9.667 and 11.4.
****Significance level is .05. Asymptomatic Sig. (2-sided test)

Only institutional investors were asked if they believe that there are other financial reporting standards that would produce more decision-useful information than the IFRS. Results indicate that 95% of respondents believe that there are no other financial reporting standards that would produce more decision-useful financial information than the IFRS. Whereas 5% or 3 institutional investors believe that there are more useful financial reporting standards, i.e., that Jordan should have its own national financial reporting standards. Therefore, a follow-up question asked institutional investors if Jordan should develop their own national financial reporting standards. Results indicate that 79% believe that Jordan should not develop its own financial reporting standards while 21% believe that Jordan

should develop its own financial standards. Only 3 institutional investors had specified in that Jordan should develop its own standards but here 12 respondents directly answered that Jordan should develop its own standards. Hence, 9 respondents believe there are no other financial reporting standards that are more useful than the IFRS while at the same time advocating that Jordan develop its own standards. Possible explanations include that a few institutional investors either are not sure which financial standards are best for Jordan or they were in a rush when answering the survey or they did not understand the question. Table 6.16 and Figure 6.15 present the data and results.
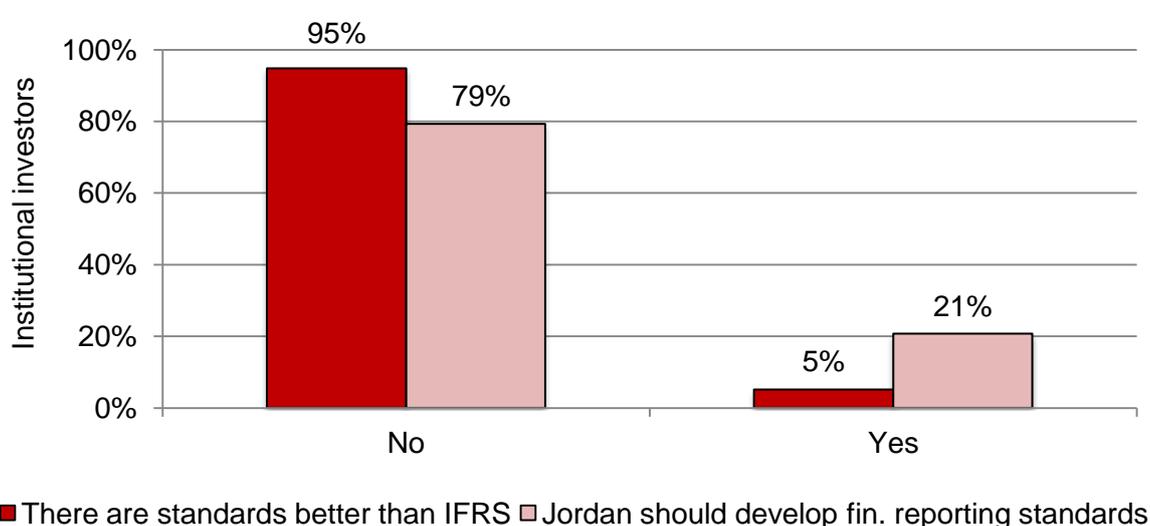

Figure 6.15: Institutional investors' opinion on financial reporting standards

Table 6.16: Institutional investors' opinion on financial reporting standards

Institutional investors	Total respondent count	No %	No #	Yes #	Yes %
There are better financial reporting standards than the IFRS	58	0.95	55	3	.05
Jordan should develop national financial reporting standards	58	0.79	46	12	.21

Investors were asked several open-ended type questions. The objective was to explain why investors believe financial information produced from applying IFRS

is or is not useful. 27 individual investors or 17% gave responses. 20 respondents or 74% believe that the information produced from applying the IFRS is useful because it produces more accurate or realistic information. Two individual investors (7%) believe the IFRS increases credibility, four (15%) said that it leads to a more stable market and one investor (4%) believes "it is part of share market returns." However, five individual investors (42%) believe the opposite that there is no effect of share market value. Two investors (17%) believe that the IFRS is not reliable and another three (25%) believe that the financial information is unrealistic, misleading and inaccurate. One investor (8%) believes that "the financial and nonfinancial information was insufficient" and another (8%) believes it was not timely because of the publishing lag.

A greater percent of institutional investors replied than individuals. 15 or 26% replied with 2respondents giving more than one explanation. 12 state that financial information produced from applying the IFRS are useful and 3 state the opposite. There are 6 different groups of affirmative responses and two negative responses. One institutional investor believes "The IFRS provides a solid unified framework for financial reporting," and another states, "Information produced from applying the IFRS gives more predictive value to future cash flows." Two state that the IFRS are easy to understand and measure. Four institutional investors state that financial information from the IFRS are easier to compare, especially in a global setting. Another four state that the IFRS are recognised accounting reporting standards that produce more reliable and flexible financial information so they are more trusted than local GAAPs. Two believe that the IFRS are better than developing national financial reporting standards and that it's the best alternative. On the negative side, one institutional investor said "the IFRS sacrifices relevance in order to be verifiable." This is a cost/benefit constraint. Two respondents state that "Jordan needs its own accounting standards to make economic decisions." Results from the open-ended questions indicate that the majority of institutional investors believe that information produced from applying the IFRS is useful. Table 6.17 lists the open-ended responses and the percentage from the total number that responded for each group of investors.

Table 6.17: Comments on useful financial information from applying the IFRS

Individual investors 17% Responded (27)	Respondent percent	**Institutional investors** 26% Responded (15)

Financial information produced by applying the IFRS *is* useful.

Individual investors	%	%	Institutional investors
◆ It produces more accurate or realistic financial information (20)	74%	27%	◆ Information is more reliable, flexible and more trusted than local GAAPs. (4)
◆ It is useful because it leads to a more stable market (4)	15%	13%	◆ It is easy to understand and measure. (2)
◆ It increases credibility (2)	7%	27%	◆ Allows more global comparison.(4)
◆ It is part of share market returns (1)	4%	7%	◆ It gives more predictive value to future cash flows. (1)
		13%	◆ IFRS are better to apply than developing our own and it's the best alternative.(2)
		7%	◆ It provides solid unified framework for financial reporting. (1)

Financial information produced by applying the IFRS *is not* useful.

Individual investors	%	%	Institutional investors
◆ There is no effect on share market value (5)	42%	7%	◆ It sacrifices relevance to be verifiable.(1)
◆ IFRS are not reliable (2)	17%	13%	◆ Jordan needs its own accounting standards to make economic decisions.(2)
◆ The information is unrealistic, misleading & inaccurate (3)	25%		
◆ The information is not timely because it takes time to publish (1)	8%		
◆ The financial information is insufficient. (1)	8%		

The findings indicate that the majority of investors have positive opinions regarding both the ASE and accounting profession's influence on the decision-usefulness of financial information while a minority feel Jordan would be better off developing its own financial standards to support its economic development.

A general comments section was provided where respondents could offer additional information or thoughts. 52 individual investors or 32% added their comments but only one institutional investor commented. 9 individual investors (69%) believed the" ASE is based on rumours" and big investors who dominate the market. Two individual investors (15%) said that there is "no government oversight of the ASE," while one (8%) investor believed that "the ASE is based on other stock exchanges", mainly from the Gulf region. One individual investor (8%) believed that "Jordan should have its own national financial reporting standards that reflect its economic growth and development. Only one institutional investor answered this question by stating that "local standards would be more useful for Jordan." Table 6.18 presents the general comments made by individual and institutional investors.

Table 6.18: General comments by individual and institutional investors

	Respondent		Comments
	count	percent	
Individual investors	9	69%	◆ The ASE is based on rumours.
	1	8%	◆ The ASE is based on other stock exchanges.
	2	15%	◆ There is no government oversight of the ASE.
	1	8%	◆ Every country should have its own accounting standards that reflect its economic development.
Institutional investor	1	1%	◆ Local standards would be more useful to Jordan

Models used by equity investors to make investment decisions

All individual investors responded if they use investment models to evaluate and select shares in the ASE for their investment portfolio. Results indicate that 66% of individual investors use investment models to buy, sell or hold shares on the ASE whereas 34% do not use investment models. Figure 6.16 and Table 6.19 present the data and results.
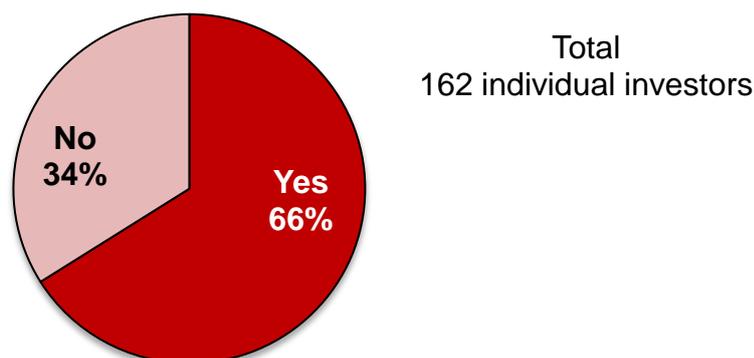

Figure 6.16: Individual investor's use of equity investment models

Table 6.19: Use of investment models by individual investors

Individual investors	Respondent count	Yes %	Yes #	No %	No #
Use investment models to value shares	162	.66	107	.34	55

Individual investors that use investment models continue the survey to rank the usefulness of the equity investment models from a list which allows them to add their own model. A Likert scale is employed with a range from 1-4 with 1 representing not useful to 5 very useful for measuring the opinions of individual investors. 117 individual investors responded. Results indicate that 17% of individual investors believe dividends are *very useful* closely followed by the P/E model at 15%. Individual investors respond that the P/B model 12%, technical analysis 5% and the stock ticker board 9% are *very useful*. Half the respondents believe that the P/E model is *useful*, followed by 46% and 45% for the P/B model and the stock ticker board respectively. Dividends and technical analysis are *useful* by 42% and 21% of individual investors. Individual investors believe the

following are *little useful*: 50% technical analysis, 45% the stock ticker board, 38% the P/B model, 31% for the P/E model and 36% for dividends. 23% of individual investors believe that technical analysis is the most *useless* investment method, followed by 5% for dividends, 4% and 3% for the P/E and P/B models, respectively, and 1% for the ticker board. Figure 6.17 illustrates the results.
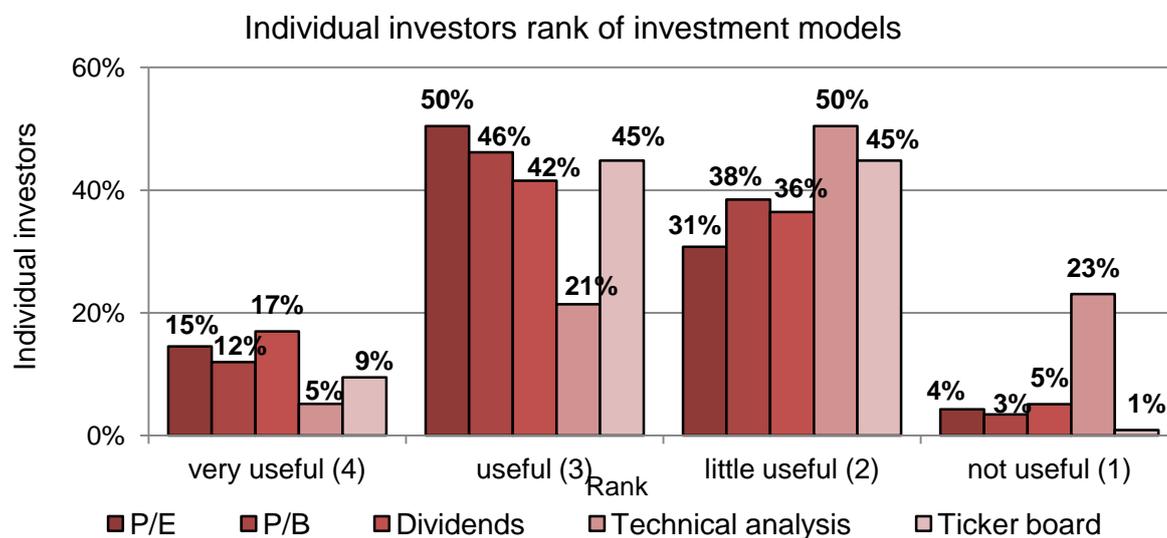

Figure 6.17: Rank of investment models used by individual investors

In order to measure the relative importance of each investment model for individual investors, they were ranked from highest to lowest importance using the weighted average. The mean for the P/E is 2.75, the P/B is 2.70, dividends are 2.67, technical analysis is 2.63, and the ticker board is 2.09. All the investment models are between the 2.01-3.0 range or all *useful* which indicates that 100% of individual investors believe that investment models are *useful*. Figure 6.18 illustrates the mean for each model. Table 6.20 presents the data and numerical results.
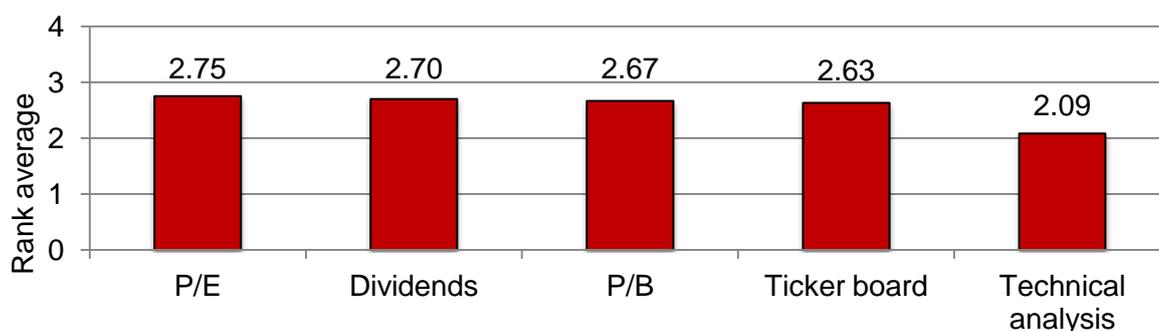

Figure 6.18: Importance of investment models for individual investors

Table 6.20: Results for investment models used by individual investors

Investment models	Total respondent count	Very useful 4	Useful 3	Little useful 2	Not useful 1	Rank mean (WA)
P/E	117	15	50	31	4	2.75**
P/B	117	12	46	38	3	2.70**
Dividends	117	17	42	36	5	2.67**
Technical analysis	117	5	21	50	23	2.63**
Share price movements on ticker board	116	9	45	45	1	2.09**

**Rank mean=Useful

The chi-square tests for investment models reject the null hypothesis which indicate that all variables are statistically significant at the .05 significance level with a 95% level of confidence. Chi-square results are summarised in Figure 6.19.

Figure 6.19: Chi-square test results for models used by individual investors
Source: SPSSv20
There are 0 cells (0%) with expected values of less than 5.
Asymptomatic Sig. (2-sided test)

Institutional investors were asked the same question. A Likert scale (1-5) was used to rank the models from *not useful* (1) to *extremely useful* (5). 100% of institutional investors responded. Results indicate that 34% of institutional investors believe the P/B model is an *extremely useful* investment model followed

by dividends with 26% of investors. Other extremely useful models for institutional investors include; the P/E model 17%, technical analysis 16%, free cash flow (FCF) 16%, discounted cash flow (DCF) 10%, price/cash flow (P/CF) 9%, CAPM 5%, dividend discount model (DDM) 2% and price/sales ratio (P/S) also 2%. The majority of respondents believe investment models are *very useful* (4) or *moderately useful* (3). 50% of respondents believe the P/E model is *very useful*, followed by 47% and 43% for the P/B model and dividends respectively. 38% of respondents believe the DCF is *very useful*, followed by FCF 32%, P/CF 26%, DDM 22%, P/S 17%, technical analysis 16% and CAPM 12%. *Moderately useful* models include: DDM 41%, FCF 39%, PCF 36%, P/S 34%, CAPM and DCF both 31%, technical analysis 24%, P/E 22%, dividends 19% and last P/B 14%. *Slightly useful* models include technical analysis and CAPM 31%, P/S 28%, DDM 24%, P/CF 19%, DCF 17%., FCF 17%, dividends 9%, P/E 7%, and P/B 3%. The most *useless* investment models are CAPM 21%, P/S 19%, and technical analysis 14%. Other investment models that are *not useful* included P/CF 10%, FCF 4%, P/E, DCF and dividends all 3%. One institutional investor or 2% of respondents ranked the P/B as not useful. Figure 6.20 illustrates the results for investment models.
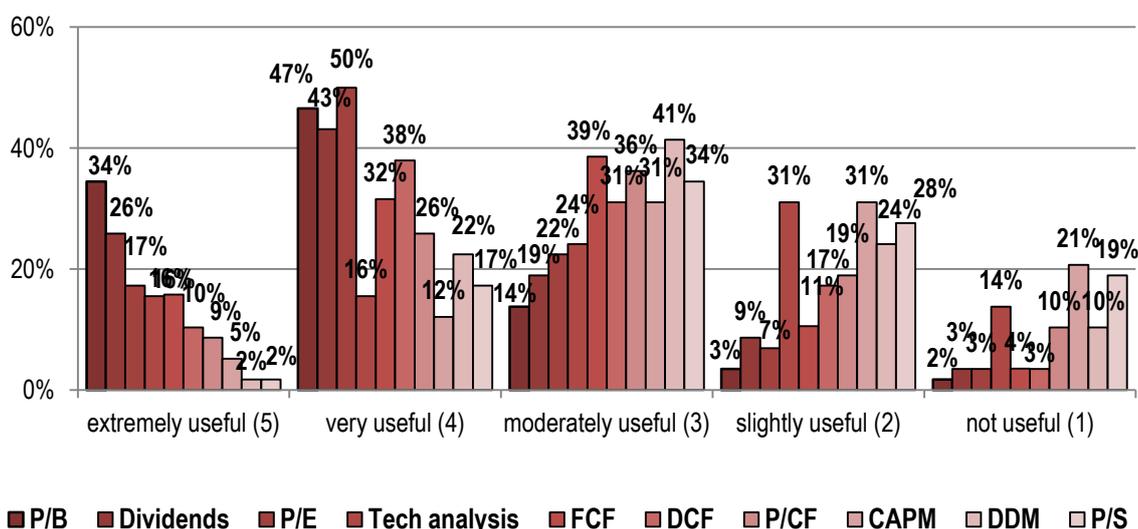

Figure 6.20: Rank of investment models used by institutional investors

The P/B ratio is the only model that is *extremely useful* with a mean of 4.08. This is consistent with the regression results where the majority of t-values reject the null hypothesis of no existence of a significant relationship between share market

values and the P/B. Investment models that are *very useful* include: dividends 3.80, P/E 3.71, free cash flow 3.48, discounted cash flow 3.33, and P/CF 3.05. *Moderately useful* models included technical analysis 2.92, dividend discount model 2.83, CAPM 2.49 and P/S 2.55. None of the investment models had a mean of *slightly* or *not useful*. This indicates that 100% of institutional investors believe that investment models are at least *moderately useful*. Figure 6.21 illustrates the rank average for each investment model. Table 6.21 presents the data, numerical results, and rank averages.
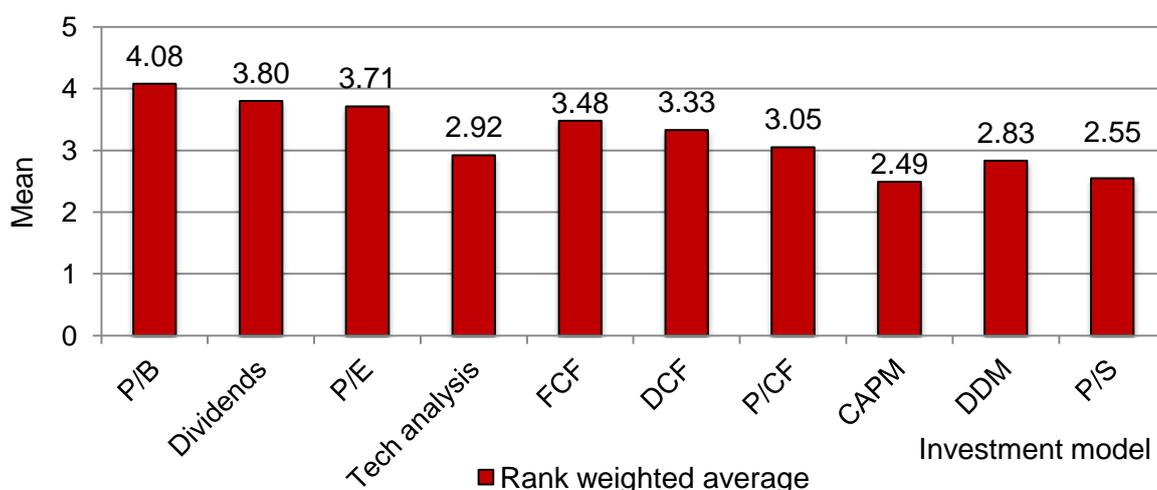

Figure 6.21: Importance of investment models for institutional investors

Table 6.21: Results for investment models used by institutional investors

Investment models	Total respondent count	Extremely useful (5)	Very useful (4)	Moderately useful (3)	Slightly useful (2)	Not useful (1)	Rank average
P/B	58	0.34	0.47	0.14	0.03	0.02	4.08***
Dividends	58	0.26	0.43	0.19	0.09	0.03	3.80**
P/E	58	0.17	0.50	0.22	0.07	0.03	3.71**
Tech analysis	58	0.16	0.16	0.24	0.31	0.14	2.92*
FCF	57	0.16	0.32	0.39	0.11	0.04	3.48**
DCF	58	0.10	0.38	0.31	0.17	0.03	3.33**
P/CF	58	0.09	0.26	0.36	0.19	0.10	3.05**
CAPM	58	0.05	0.12	0.31	0.31	0.21	2.49*
DDM	58	0.02	0.22	0.41	0.24	0.10	2.83*
P/S	58	0.02	0.17	0.34	0.28	0.19	2.55*
Other model	1	0	0	0	0	0	0

***Extremely useful (4.01-5.00) **Very useful (3.01-4.00)
*Moderately useful (2.01-3.00)

The chi-square tests for investment models reject the null hypotheses which indicate that all variables, except for technical analysis, are statistically significant at the .05 significance level with a 95% level of confidence. Technical analysis fails to reject the null hypothesis. Chi-square results are summarised in Figure 6.22.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The categories of PE occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
2	The categories of PB occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
3	The categories of Dividends occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
4	The categories of Tech analysis occur with equal probabilities.	One-Sample Chi-Square Test	.177	Retain the null hypothesis.
5	The categories of Div discount model occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
6	The categories of Discounted cash flow occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
7	The categories of P>sales occur with equal probabilities.	One-Sample Chi-Square Test	.001	Reject the null hypothesis.
8	The categories of P>CF occur with equal probabilities.	One-Sample Chi-Square Test	.004	Reject the null hypothesis.
9	The categories of Free cash flow occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
10	The categories of CAPM occur with equal probabilities.	One-Sample Chi-Square Test	.011	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Figure 6.22: Chi-square test results for models used by institutional investors
Source: SPSSv20
There are 0 cells (0%) with expected values of less than 5.

Both groups of investors were asked what the sources of financial information they use to select shares for their investment portfolios. All respondents from both groups responded. The question was multiple choice which allowed the respondents to choose multiple answers from a list. The purpose of this question

was to determine the different sources of financial information that investors use. Results indicate that 45% of individual investors get their financial information from audited financial statements. Almost a third, 30%, get their information from broker's advice, 15% from newspapers and the investor's live trading floors. The rest get their financial information from the ASE website (12%) and heard on street news (9%). Only 7 respondents provided other sources of financial information in their answer and these include, their personal analysis, insider information and fundamental analysis.

Results indicate that 86% of institutional investors get their financial information from audited financial statements. The majority also use the ASE website (72%) to get financial information. 36% get their financial information from newspapers and 31% from heard on street news. 29% of institutional investors get their financial information from the investors' live trading floors and in-house research reports. One institutional investor responded that he gets information from other sources that are considered insider information. Figure 6.23 illustrates the results and Table 6.22 presents the data, the results and the number of respondents for both groups.
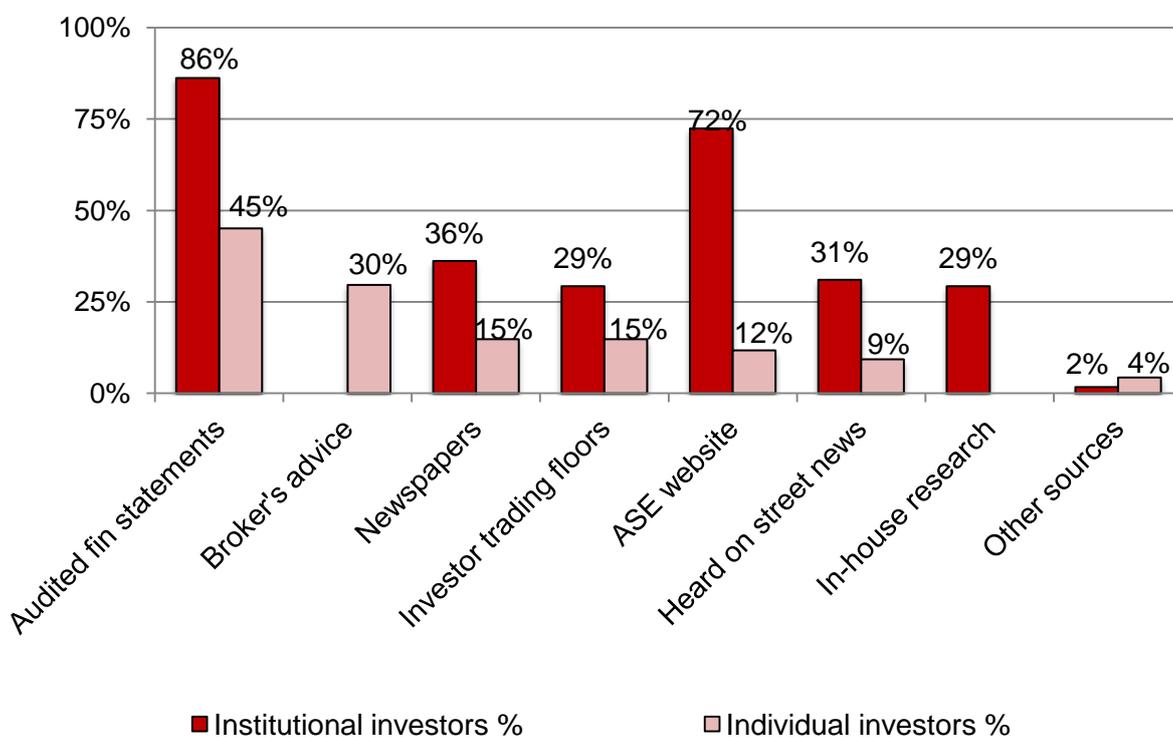

Figure 6.23: Sources of financial information for investment decision-making

Table 6.22: Equity investor sources of financial information

Sources of financial information used in selecting shares for investment portfolio	Individual investors			Institutional investors		
	Total count	(#)	(%)	Total count	(#)	(%)
ASE website	162	19	0.12	58	42	0.72
Audited financial statements	162	73	0.45	58	50	0.86
Newspapers	162	24	0.15	58	21	0.36
Investor trading floors	162	24	0.15	58	17	0.29
Heard on street news	162	15	0.09	58	18	0.31
Broker's advice	162	48	0.30	n/a	n/a	n/a
In-house research	n/a	n/a	n/a	58	17	0.29
Other sources: a. personal analysis b. fundamental analysis c. Insider information	162	7	0.04	1	1	.02

Influence of the ASE and the Accounting Profession on decision-usefulness of financial information

Open-ended questions regarding the ASE and the accounting profession were only asked to institutional investors because during the pilot testing all individuals indicated that they didn't know with verbal responses. Some investors gave more than one reason. The purpose of this question was to directly gather data to answer SQ3. A total of 17 or almost 30% of institutional investors replied to the question: *How have developments within the ASE influenced the decision-usefulness of accounting information?* There were 14 positive statements and 3 negative statements. 9 respondents state that the ASE uses modern techniques for dissemination of financial information such as its website that allows greater access to relevant financial information to more investors. This gives them more

timely information to make more relevant decisions. 6 answered that the ASE has influenced the Jordanian government to pass laws that legally require listed firms to publish financial reports giving investors access to financial information 2 respondents stated that investors are more aware of the benefit of financial information from accounting regulation. 3 state that the ASE has increased the frequency of publishing financial information which again makes it more timely. Negative answers were given by 3 institutional investors. One states that the "ASE has no influence on financial information" and another states that the ASE has not developed enough. The last respondent states, "The ASE has high transaction & liquidity costs. This doesn't add value to companies."

Institutional investors were asked how developments within the Jordanian accounting profession have influenced the decision-usefulness of financial information. A total of 13 or 22% responded whereby 77% of respondents gave positive responses and 23% gave negative responses. 3 state that the Jordanian accounting association (JACPA) provides more qualified external auditors through its legal requirement that accountants be certified and have experience. One added that this "has influenced firms to have professional accounting staffs." Another 2 believe that the accounting profession has influenced usefulness of financial information by advising investors & others. One respondent states that "it fosters better understanding for compliance of the IFRS."2 respondents believe that the accounting profession has influenced Jordanian legislation to require IFRS compliance in commercial laws and a further 2 state that it has tried to develop accounting in Jordan and to update accounting standards in annual reports to provide more relevant data for users. One respondent believes that "accounting societies have raised awareness of the accounting challenges in Jordan" and another said that "the accounting profession developments will increase faithfulness & trust in financial information thereby resulting in more reliable decision-making." 3 respondents gave the same negative response that the accounting profession has "no influence" on the decision-usefulness of financial information. Table 6.23 and 6.24 provide the responses given by institutional investors.

Table 6.23: The ASE's influence on decision-usefulness of financial information

Influence of the ASE on the decision-usefulness of financial information. (17 respondents)

✚ ASE uses modern techniques for dissemination of financial information such as its website that allows greater access to relevant financial information to more investors for more timely & relevant decision-making. (9 answers)

✚ ASE influenced Jordanian government to legally require implementation of IFRS through legislation of commercial laws (6 answers)

✚ Investors are more aware of the benefit of financial information from accounting regulation (2 answers)

✚ ASE requires increased frequency of publishing financial information making it more timely. (3 answers)

━ ASE has not developed enough. (1 answer)

━ ASE has high transaction & liquidity costs(1 answer)

━ ASE doesn't add value to companies (1 answer)

━ ASE has no influence (1 answer)

Table 6.24: Accounting profession's influence on decision-usefulness of financial information

Influence of the accounting profession on decision-usefulness financial information. (13 respondents)

✚ Jordanian accounting association provides more qualified accountants because it legally requires accountants to be certified and have experience. (3 answers)

✚ This has influenced firms to have professional accounting staff (1 answer)

✚ Accounting societies raised awareness of accounting challenges in Jordan (1) answer

✚ Accounting profession has influenced Jordan legislation to require IFRS compliance in commercial laws (2 answers)

✚ Accounting profession has influenced decision-usefulness of financial information by advising investors & others (2 answers)

✚ It has tried to develop accounting in Jordan and update accounting standards in annual reports provide more relevant data (2 answers)

✚ Accounting profession fosters better understanding for compliance of the IFRS. (1 answer)

✚ Accounting profession developments will increase faithfulness & trust in financial information thereby resulting in more reliable decision-making (1)

━ No influence (3 answers)

✚Positive statement ━Negative statement

Prevalent findings indicate that institutional investors have positive opinions about the ASE and the accounting profession. Major criticisms of the ASE are that it has very high transaction costs and liquidity is very low for many shares. This means that investors who want to sell shares with consistent low trading volume may not find a buyer when they want. Market efficiency is negatively affected.

6.4   Qualitative research

This section presents the analysis of the findings of the interviews conducted with a professional of the ASE and accounting and auditing experts in Jordan. This provides a third verification of findings to answer the main research question and increase the validity of the entire study. Interviews to equity investors were not conducted because they were already surveyed through the administration of questionnaires discussed in the previous section.

6.4.1   QUALITATIVE RESEARCH DESIGN

In order to increase the quality of the research design, an interview protocol (see Appendix C) was designed which also increases the reliability of the findings for the interviews (Yin, 2009, p. 41). The researcher conducted all interviews. Before the actual interview started, the objective of the interview, the purpose of the research and the confidentiality of the respondents' identities were explained to each interviewee. The interview questions were prepared in advance and designed to gather additional evidence to directly answer sub-question 2. Therefore, the same two questions, derived from SQ2, are posed to all respondents, that is; *how have developments within the ASE and the Jordanian accounting profession influenced the decision-usefulness of accounting information produced from implementation of the IFRS?* In order to enhance the quality of the qualitative analysis, responses were organized and categorized in different ways to explore rival explanations, data triangulation was used to "provide cross-data validity checks" (Patton, 1999, p. 1192). Therefore, reliability is increased and bias reduced by measuring the same questions with different methods and data sources. The link between SQ2 and the actual questions posed to interviewees are presented in Figure 6.24.
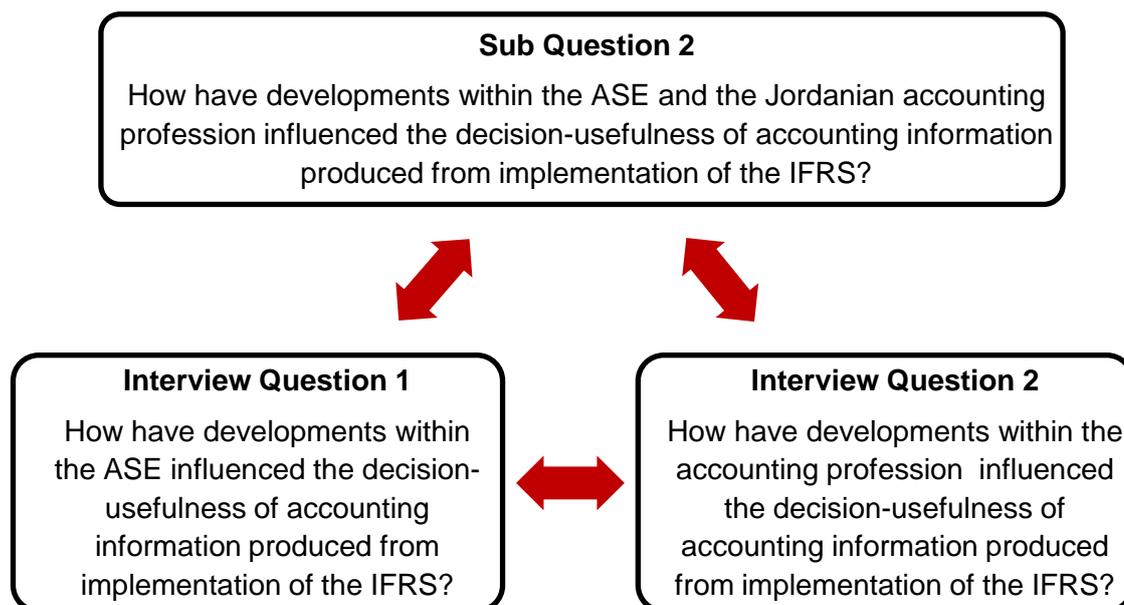
Figure 6.24: Main interview questions

All interviews took place in a natural office setting and interviewees were given sufficient time to respond in a more relaxed atmosphere. Interviews averaged between 45-60 minutes in duration and were conducted during June and July 2011. Respondents were given time to clarify ambiguous responses so that they would be recorded without misunderstanding of the meaning intended by the respondents. Afterwards, respondents were asked follow up questions. Notes were taken to record the answers and immediate impressions were noted. Each interviewee agreed to be available by telephone if further discussion or clarification was needed. However none of the interviewees wanted their identities revealed except for a general description of their profile. For ethical reasons and upon request of the interviewees to maintain the privacy of their responses, their names were not released in this study.

6.4.2 PROFILE OF INTERVIEW PARTICIPANTS

To increase the credibility of the interview findings, five experts with vast experience were chosen to participate. The first interviewee is an auditor who is currently serving on the board of directors of two ASE companies and is a member of the audit committees of three other companies. The interviewee has

over 35 years experience in internal and external auditing for financial companies listed on the ASE. The second interviewee is a member of the board of directors of the JACPA since 12 years in which the interviewee has held the post of vice-president and secretary on the board. The interviewee is a managing partner of an auditing firm and has over 26 years external auditing experience. The third interviewee is a managing partner in a public auditing firm and has 25 years external auditing experience. The interviewee is a member of the JACPA since 1991. The fourth interviewee is a recognized accounting academician and author with over 30 years experience in academia and expertise in the IAS/IFRS. The fifth interviewee has over 10 years regulatory experience in the ASE.

6.4.3 INFLUENCE OF THE ASE ON THE DECISION-USEFULNESS OF FINANCIAL INFORMATION

Most respondents indicated that developments within the ASE have contributed positively to the decision-usefulness of financial information. Many reasons were given. Firstly, the ASE requires firms to publish financial information that complies with the IFRS by certain dates. One respondent went on to say,"Greater compliance from listed firms has had a positive effect on decision-useful financial information because it provides more relevant, timely and comparable information which can be used by investors." However, the respondent felt that the ASE requires listed companies to implement all IFRS standards but this has had a negative influence on the decision-usefulness of financial information because not all standards reflect the Jordanian economy which is very small.

Another respondent said that publicly listed companies are required by law to produce financial information that complies with the IFRS and added that "the ASE has oversight powers to require listed companies to publish financial information on a regular basis or they are delisted." In addition, the ASE provides easy access to trading and financial information, current and historical, for all listed companies through its website. The same respondent said that "the ASE allows investors to monitor their portfolios live daily (up to 15 companies) through their website with a computer or a mobile." This allows investors to make investment decisions wherever and whenever they like provided it is during ASE

trading hours. Providing timely financial information increases the decision-usefulness of financial information. Figure 6.25 illustrates the Live Market Watch screen.

Figure 6.25: ASE Live Market Watch screen.
Source: (ASE, 2012).

6.4.4   INFLUENCE OF THE ACCOUNTING AND AUDITING PROFESSION ON THE DECISION-USEFULNESS OF FINANCIAL INFORMATION

Respondents were mixed regarding the influence that the accounting and auditing profession has on the decision-usefulness of financial information. All respondents agree that the single most positive influence that the accounting profession has had on the decision-usefulness of financial information was the development of a professional auditing association, the JACPA. This is because the association requires a proficiency exam for all accountants who want to become auditors. In addition, the JACPA requires that external auditors have 3 years experience in order to get licensed to audit the external financial records of public companies. One respondent said that "Theoretical knowledge along with practical experience has resulted in more qualified auditors and accountants," and added that "Another reason is that JACPA members must keep up with developments and changes in the accounting reporting standards by having the required continuing professional education (CPE) hours." All respondents said that the JACPA has advocated the implementation of international reporting standards since the 1980s. The JACPA has supported the use of IFRS "because investors want the balance sheet, income statement and all other statements to comply with the IFRS." Therefore the JACPA caters to the needs of investors. The JACPA has oversight powers to issue warnings and/or censure auditors who are charged with misconduct. The respondent added, "This is monitored through random inspections to check financial records, engagement letters, etc. One respondent said that the JACPA was exploring the development of local regulations for Jordan."

However, one respondent believes that "External auditors have poor professionalism" and another said that "They lack sufficient knowledge of the market, i.e., differentiating between market value and fair value." It was noted that this has had a negative influence on the decision-usefulness of financial information in Jordan, "especially on the credibility of financial reporting". Another respondent believes that "External auditors lacked full proficiency in applying the IFRS because they did not keep up with accounting changes."

A key criticism of the JACPA was that "It lacks independence to make its own decisions. One respondent said "All decisions must go through a 12-member

council composed of ministers and other professionals that meet every six months." This creates unnecessary bottlenecks, i.e., "even ordinary JACPA licenses go through the council." Another point made was that the "JACPA budget is funded by membership dues and a small percentage of audit fees." The budget has to cover all the activities the JACPA sponsors, such as updating the financial reporting standards, training seminars and workshops, international conferences that are held every 2 years and one scientific day for auditors.

On follow-up one respondent said, "the economy has had the greatest influence on the decision-usefulness of financial information rather than any financial reporting standards such as GAAP, the IAS or the IFRS." However, the implementation of "the IFRS is very beneficial if all countries apply the same financial accounting standards to facilitate comparisons and increase understandability." Another added that "the IFRS should be available for free. This would help accountants have access and keep up with changes."

6.5   SUMMARY

Chapter 6 presented the results for the three research methodologies employed in the study. The following is a summary to the answers to sub-questions 1, 2 and 3 for each research method.

Quantitative research methodology was employed to answer sub-question 1. Inferential statistics was used to report t-values to indicate whether the P/E or P/B models reject or do not reject the null hypothesis of no significant statistical association between the P/E or P/B variables and equity share market values of companies listed on the ASE for the pre-IAS/IFRS, IAS and IFRS study periods.

In general, mixed results with regard to the P/E model indicate a weak relationship between the *P/E* and *lnP/E* variables and equity market values. Results for the *P/E* operational form indicate that the association between the *P/E* variable and equity market values are very weak for all study periods. Results for the *lnP/E* form indicate a weak statistical relationship between the l*nP/E* variable and

market values for the pre-IAS/IFRS period and the IFRS period. Although, results for the IAS period showed an increase to 43% of t-values that rejected the null hypothesis, however, the relationship between the *InPE* variable and equity market values remained weak.

The findings for the P/B model were very robust with regard to the lnP//B variable and equity market values where 100% of the t-values reject the null hypothesis and accept the alternate hypothesis for the IAS and IFRS period. Mixed results for the pre-IAS/IFRS period for the *InP/B* variable and market values showed a weak relationship. Results for the *P/B* variable indicated a strong relationship with market values during the IFRS period but a weak relationship during the IAS and pre-IAS/IFRS periods.

Statistical findings from the quantitative research method indicate that equity investors use accounting information from the P/B model and to a lesser extent from the P/E model to make investment decisions on the ASE. Results are most robust for the P/B especially during the period of IFRS implementation.

Descriptive statistical results for the questionnaires administered to individual and institutional equity investors of the ASE were presented to answer all three sub-questions. Key findings indicate that individual investors use financial information in the form of investment models such as the P/E and P/B to make investment decisions. Investors use other investment tools such as dividends and technical analysis. All were ranked as useful. Chi-square test results all rejected the null hypothesis. Furthermore, three quarters of individual investors are aware of the IFRS and rank the qualitative characteristics of decision-useful financial information as useful, relevant, timely, comparable and faithfully represented or a rank of 3 on a scale from 1-5. Most individual respondents also believed that the IFRS are useful, accurate and realistic while the minority believed the opposite.

Institutional investors ranked the P/B model as extremely useful followed by dividends and the P/E model. All but one institutional investor was familiar with the IFRS and all believed that listed companies should comply with the IFRS.

Findings indicate that institutional investors believed financial information was extremely decision-useful. All chi-square test results rejected the null hypothesis. In ranking the qualitative characteristics of decision-useful financial information, institutional investors ranked comparability on top as very important. Relevance, understandability, faithfully represented, timeliness and verifiability were all ranked very important.

Analysis of the interviews to accounting experts and a member of the ASE were presented. The prevalent key finding was that the ASE has influenced usefulness of financial information in a positive manner. The ASE provides oversight for listed companies and requires regular publishing of financial information produced by applying the IFRS which influences the decision-usefulness of financial information by increasing its qualitative characteristics.

Similarly, the main finding for the developments within the accounting profession is that it has had a positive influence on the decision-usefulness of financial information though the development of the JACPA. However, there was a common opinion among respondents that external auditors needed more oversight in order to implement the IFRS with more understanding thereby producing more useful financial information.

The bases for the combined findings in this study which answer the main research question and sub-questions are presented in the next chapter using the results from the three research methodologies in addition to the data and analysis from chapters 2, 3 and 4.

Chapter 7 CONCLUSIONS AND IMPLICATIONS

This chapter pools together all quantitative, critical and descriptive analysis presented in all chapters in order to answer the main research question and sub-questions. The conclusions are presented in section 7.1. Conclusions are drawn using objective and subjective results combined from the three methodologies and the analysis from previous chapters. The quantitative research results are objective and independent of the researcher's viewpoint. The results for the closed-ended questions on the questionnaires are also objective as the results are tabulated from ordinal variables. The qualitative research results are subjective because interpretation of the answers from interviews was not independent from the researcher. Therefore both objective and subjective results are employed to answer the research questions. This approach is advantageous as it increases the validity of the study by achieving triangulation or the use of evidence from multiple sources to answer the same question. The implication of each of the findings is discussed in section 7.2 and recommendations are suggested in section 7.3. The limitations for this study are considered in section 7.4, the contribution to knowledge is presented in section 7.5 and suggestions for further research are outlined in section 7.6.

7.1   CONCLUSIONS

This study examined the association of the BVPS and EPS to share market prices whereby the earnings of the firm and the book value of equity are the results from the implementation of IAS/IFRS in Jordan. In general, the combined findings presented in the previous chapter reveal that equity investors use financial information produced from implementation of IAS/IFRS to make investment decisions in the ASE. Conclusions from all the findings in the study are presented below.

1) Statistical findings, cross-sectional and time series, for the association of the BVPS and share market values were very robust during all periods. Results of both equity investors' questionnaires confirm the statistical results that investors use the BVPS through the use of the P/B ratio.100% of the

institutional investors surveyed directly said that they use financial information in their investment decision-making process. Moreover, they believe that the P/B model is extremely useful while individual investors believe it is useful.

2) Cross-sectional findings for the REPS during the pre-IAS/IFRS period indicated a weak statistical association (50%) between the REPS and share market values. Cross-sectional findings during the IAS period revealed a more robust association (91%) but a weaker relationship during the IFRS years (75%) with robust association during the financial crisis period. This indicates that implementation of the IAS/IFRS improved the decision-usefulness of financial information regarding the use of REPS compared to the pre-IAS/IFRS period. Findings from the questionnaires indicated that both investor groups use the P/E ratio. Institutional investors believe the P/E is very useful while individual investors believe it is useful. The use of investment models were tested by the chi-square hypothesis test that indicated rejection of the null hypothesis for all frequencies.

3) Models that have been used to examine decision-usefulness of accounting information are numerous. The empirical literature is saturated with studies that examine information content of accounting information with most prominent contributions made by Ball and Brown (1968) Beaver (1968). Chapter 3 reveals that empiricists use several accounting-based models to evaluate the association between accounting information and share market prices with significant findings such as the EPS and/or the BVPS including the seminal works of Ball and Brown (1968), Beaver (1968), Patel (1976), Bernard (1994), Ohlson (1995) and others (Francis and Shipper (1999), Graham and King (2000) and Gornik-Tomaszewski & Jermankowicz (2001),. Other models included the ROE (Wilcox 1984, Penman 1991, Bernard 1994, Leibowitz 1999, Al-Rai 2001a) and ROA (Abdel Shahid 2003, Al-Khalaylehd 2001). Studies that employ BVPS and/or the P/B ratio confirm the findings of this study (Fama and French 1992, Bernard 1994, Feltham and Ohlson 1995, Jensen, Johnson and Mercer 1997, Knez and Ready 1997, Loughran 1997, Davis 2001, Audoğan and Gürsoy 2001, Goldreyer, Chui and Wei 1998).

4) Results indicate that the most appropriate model to employ to examine decision-usefulness of accounting information to equity investors of the ASE was one that investors actually use as inputs into their investment decision-

making process. A pilot survey was administered to determine and justify which models to use and to test for decision-usefulness of financial information. The choice to use the P/E and P/B models and their underlying components, share price, BVPS and EPS via questionnaires and empirical investigation to examine the usefulness of financial information was due to the preference of both equity investor groups.

5) The prevalent findings from the open-ended questions in the survey indicate that the ASE has had a positive impact on the decision-usefulness of financial information. This was confirmed from the responses given by interviewees.

6) The key findings from the open-ended questions in the survey indicate that the accounting profession has also had a positive influence on the decision-usefulness of financial information. Again this was confirmed from interviewees who said that the JACPA was the most important influence on enhancing the usefulness of financial information to users of external financial reporting. Another influence is the local legislative environment which may influence the compliance or non-compliance of IAS/IFRS.

7) Survey results indicate that investors believe that companies listed in the ASE should comply with the IFRS. They also believe that there are no other financial reporting standards better than the IFRS and therefore Jordan should not develop their own national standards. Institutional investors believe that accounting information produced from financial reports is extremely useful while individuals believe it is very useful. In general, investors believe that the fundamental and enhancing qualities that make financial information decision-useful were important. Therefore, the financial accounting information produced as a result of implementing the IFRS were relevant and therefore provided useful accounting information to investors of the ASE in making their equity investment decisions.

7.2   IMPLICATIONS

The main implications of this study are divided into 4 areas: regulatory implications, implications for users of external financial reporting information, implications for macro-economic planning and research implications.

Regulatory Implications:

1) The results of this study lead to the following question: shall Jordan continue implementing the IFRS or not? The answer is yes, based on the results that indicate the usefulness of the accounting information published in the external financial reporting to the consumers of the information, mainly the equity investors. However, since every country has its own economic characteristics and conditions, it is more beneficial to have an oversight board that issues standards and regulates the accounting and business environment. Accounting has a socioeconomic objective, which is to enhance the economy of a given country. The JACPA already sponsors the JCPA certification that has had a positive influence on decision-usefulness of financial information. However, the JACPA must be more effective in improving the image of the accounting and the auditing profession.

2) Implications for the regulatory role of the Jordan Securities Commission (JSC) is to provide it with more efficient laws and regulations to require more disclosure for companies in their external financial reporting. The laws of the JSC must be reviewed and modernized to cope up with the global economic environment and conditions.

3) Implications for the ASE include reviewing and modernizing the laws and regulations of the exchange in order to provide fair-trading for all investors and eliminate all insider trading and trading based on rumours and gang trading. Specifically the following must be improved: the Internal By-Law, Administrative By-Law, Listing Securities Directives, Trading Directives, Directives for Internet Trading, Disclosure Directives, By-Laws for Fees, Charges and Commissions, Dispute Resolution Directives and the Code of Ethics. The Corporate Governance Code should be amended to indicate which alternative accounting standards companies should implement in the case of non compliance with the IFRS. A more advanced trading system should also be implemented.

Implications for users of external financial reporting:

1) Investors must educate themselves in the International Financial Reporting Standards and be aware of the benefits of information produced through external financial reporting in their investment decisions.

2) The internal managers of companies will benefit from more decision-useful accounting information that will guide them to make more efficient decisions relating to strategic planning and control.

3) Bankers who make credit decisions to corporations will benefit from more decision-useful accounting information.

Implications for macro-economic planning:

1) The decision-usefulness of accounting information to investors is also useful and beneficial to the government in the process of economic planning, i.e., accounting information contained in the GNP computations.

2) When accounting in a given country is producing information useful to local investors, it will also be useful to international investors wishing to invest in Jordan.

Research Implications:

This research opens a new line of empirical research in Jordan and its neighbouring countries.

7.3 RECOMMENDATIONS

These implications lead to two important recommendations. First, there is a need for the establishment of a regulatory body to set enforceable uniform external financial reporting standards that ensure compliance with the IFRS but that are also consistent with local laws and regulations. For example, in some cases, companies cannot apply all IFRS pronouncements because of the different economic and legal environment they operate in. An independent regulatory body should oversee the issuance of alternative pronouncements to IFRS when compliance is difficult. One example is the accounting for leases. Jordanian laws for leasing may prevent the existence of conditions that allow for the implementation of the capital lease method. The establishment of a regulatory body would set unified and consistent accounting standards as an alternative to IFRS to reflect the legal reality in Jordan that impacts the accounting environment. Currently the Corporate Governance Code uses a "compliance or explain" approach which allows companies flexibility for non-compliance from IFRS given

that the non-compliance be explained in the annual report (Jordan Securities Commission, 2012). The JACPA should play a more active role in ensuring that all companies follow uniform accounting standards. "Some of the benefits of compliance include better accountability and increased confidence in the capital markets, whereas the costs of non-compliance include poor standard of audit reporting, poor accountability, lack of confidence in the capital markets, penalty within the law, such as paying a fine and/or imprisonment" (Okike, 1998, p. 143).

Second, investors must be informed of the importance of financial information published in external financial reporting for the equity investment decision-making process. With greater knowledge, shareholders can

Specifically, the following recommendations are suggested from this study:

1) A comprehensive review of all security laws including the accounting standards to upgrade its contents in line with new developments to ensure financial information produced from external financial reporting meets the criteria of decision-usefulness for users of external financial reports. This will enhance transparency in the accounting profession and enhance the investment climate to attract more foreign investors.

2) Governmental support for different professional associations in the areas of accounting, finance, management accounting…etc. The JACPA is composed of a high council that should meet 6 times per year but in reality meets much less frequently. This causes delays in decision-making by the high council and impedes the activities of the JACPA. Specifically the JACPA should be given independence to make decisions. This would enable the JACPA to be more efficient and effective in guiding the accounting and auditing profession.

3) The IFRS and the International Standards on Auditing should be freely available to all accountants and auditors to increase understandability, maintain the profession updated and foster greater consistency in compliance.

4) The Corporate Governance Code and the Code of Ethics should be to reviewed to provide greater guidance for the management of companies. In addition, "improve transparency in disclosures in the annual reports by making the governance of companies better understood by shareholders" (Okike, 2007, p. 189).

5) Initiating international conferences to be held in Jordan annually rather than every two years which will enhance the understandability of the seriousness of financial information regarding investment decisions. Accounting changes are continuous and keeping up with them should be a priority.

6) Initiating professional training sessions or workshops in the areas of investment and the use of financial information in the investment decision-making process for shareholders, investors and others.

7.4 LIMITATIONS

The study may have been subject to several limitations. The researcher had limited time and resources to collect more data for each research method. This was not a problem with the main quantitative research method as data was collected for a 29-year period that has not been done before. With the secondary research methodologies, the survey and qualitative methods, more time and resources would have enabled administration of a greater number of questionnaires and interviews to be conducted, transcribed and analysed. The interview process in particular is a time-consuming process. The study may have been subject to other limitations that include:

1) Model Specification: As is the case in empirical research if the models, which represent the core of the study, are misspecified then the results might not be accurate.

2) If the data for the different variables do not meet the regression model assumptions such as the normality assumption then the results might be distorted or the estimated coefficients of the regression will not be BLUE (Best Linear Unbiased Estimators). However data was normal.

3) Results indicated low standard errors, therefore, tests for autocorrelation, heteroscedasticity and multicollinearity were not performed. However, this represents a limitation of the study.

4) The data for different variables are measured according to the accounting regulations of the IFRS in Jordan. If these standards or regulations do not fit with the Jordanian economy, then the results may be inaccurate.

5) The data gathered for analysis may be subject to time period bias where results are limited to the time they are collected. The time period for the statistical research was sufficiently long (29 years) to overcome this bias. Respondents of the questionnaires or the interviews however may be subject to time period bias as well as response bias. Limitations for the interviews include the selection of interviewees and interviewer bias.

6) There may be researcher bias for results that required subjective analysis and interpretation. These were overcome by using objective results where numbers tell the story and subjective research results where people tell the story. Results were compared and crosschecked to increase validity of findings and reliability of the study.

7) The study may be limited because it is not possible to establish the use of clean surplus accounting during the period 1980-1989.

8) The study may be limited by the absence of sensitivity analysis for the date the stock price is taken, i.e., year-end price.

7.5   CONTRIBUTION TO KNOWLEDGE

The decision-usefulness of accounting information is examined by finding the statistical association between the BVPS and REPS and share market prices for a sample of companies from all four sectors that were listed on the ASE, Jordan's national stock market during the period 1980–2009. This research employs this study period because it can be used to compare the period before the implementation of IAS/IFRS and the periods after to test for the usefulness of accounting information. There have not been any studies on the ASE that have employed this study period nor that have compared the period pre and post implementation of the IAS/IFRS in Jordan. Therefore, this study fills this gap in the literature by providing greater insight into the decision-usefulness of accounting information to equity investors in Jordan resulting in a deeper understanding of the appropriateness of using the IAS/IFRS in an emerging country such as Jordan. Thus, the findings in this research represent an original contribution to knowledge.

Secondly, the study adds to the debate regarding the decision-usefulness of financial information from applying the IAS/IFRS in a developing country. This was achieved by using a mixed method research approach that employs three research methods. The quantitative methodology used the residual earnings model to empirically examine decision-usefulness of financial information in Jordan. Other studies used similar methodology and reported similar results include Graham and King (2000) and Gornik-Tomaszewski & Jermankowicz (2001). The second research methodology used survey research via questionnaires. 300 questionnaires are administered to two groups of equity investors of the ASE to enable data cross-checking of the hypothesis testing of decision-usefulness of financial information. Obaidat (2007) administered questionnaires to 25 equity investors and 29 auditors of the ASE to compare their view regarding the importance of qualitative characteristics of useful financial information. Their results indicated a gap between the groups. This study examines the opinions of individual and institutional investors regarding their use of financial information, investment models and implementation of IAS/IFRS. The third research method employed qualitative research via interviews conducted to experts in the ASE and the accounting profession.

In addition, this study uses Jordan as a case study that employed a comprehensive study period of 29 years of archival financial data from the ASE to examine the decision-usefulness of financial information. Three different sources of evidence were used to answer the same research questions. This enabled data verification, multiple analyses which enhanced the reliability of the findings and increased the validity of the study.

The study is timely for several reasons. It comes after more than 20 years of implementation of IAS/IFRS in Jordan. Second, given the sluggish economic situation in Jordan, this investigation may provide useful guidance for improving financial information dissemination. Finally, the study will add to the debate about the need to develop national financial reporting standards in Jordan that more closely reflect its economic development.

Furthermore, this study signifies another step towards development and awareness of the importance of the tools available to investors to enable better, more informed decision-making. Additionally, the importance of this research is derived from its implications previously detailed. For these reasons, it is a relevant time to examine the decision-usefulness of the financial information produced as a result of applying IAS/IFRS in Jordan.

7.6   SUGGESTIONS FOR FURTHER RESEARCH

This research investigation has examined contemporary accounting issues that add to the debate about the decision-usefulness of accounting information produced from the implementation of IAS/IFRS in a wider context. As a result, the study makes an original contribution to knowledge that will stimulate further research.

Similar research may be conducted for countries within the Middle East and compared. Research may be conducted by adding more accounting variables which maybe a more accurate predictor. Additional research may be conducted to examine the incremental explanatory power of the BVPS and the REPS. Research may be conducted in accounting areas that locally deviate from IFRS pronouncements. Lastly, further research may be conducted to examine the treatment of earnings and book value figures produced from applying the IFRS during the financial crisis to investigate differences in the usefulness of the information.

APPENDICES

APPENDIX A: ECONOMIC DATA

Table A-1: Severity of human soil degradation in Jordan

Severity	Map-ped	Mapped (km2)	Population	Population %	Population density	Waste-land (km2)	Infrequent (km2)	Very frequent (km2)	Dominant (km2)	Degraded (km2)	Degraded %
None	3.3	2,961	95,944	1.9	32.41	2,961	-	-	-	0	0.00
Light	0.5	439	56,164	1.1	127.87	-	11	-	-	11	0.01
Moderate	64.7	58,434	504,276	10.1	8.63	-	-	20,452	-	20,452	22.65
Severe	14.0	12,601	4,251,628	85.5	337.40	-	-	4,410	-	4,410	4.88
Very Severe	17.6	15,864	66,540	1.3	4.19	-	-	-	11,898	11,898	13.18
TOTALS	100.0	90,299	4,974,552	100.0	55.09	2,961	11	24,862	11,898	36,771	40.72

Source: FAO (2005) National Soil degradation Maps Page, Land and Water development division, Last update: 12 December 2005
http://www.fao.org/landandwater/agll/glasod/glasodmaps.jsp?country=JOR&search=Display+map+%21

Table A-2: Population by age and sex group, 2005 (percent)

Population			
Age Group	Total	Male	Female
	207173	104681	102492
Percent	100	100	100
0-4	12.1	12	12.3
5-9	12.7	12.8	12.5
10-14	12.9	13	12.9
15-19	11.8	12	11.6
20-24	10.3	10.8	9.9
25-29	7.9	8	7.7
30-34	6.7	6.4	7
35-39	6.1	5.8	6.4
40-44	4.8	4.6	4.9
45-49	3.6	3.5	3.7
50-54	2.7	2.6	2.8
55-59	2.5	2.4	2.6
60-64	2.2	2.3	2.1
65+	3.7	3.9	3.5

Note: Slight differences in the totals of some tables are due to weighting procedures and rounding of figures
Source: Department of Statistics/Employment &Unemployment Survey-Annual Report 2005

Table A-3: World potash producers

World Potash Producers			
Country	2001	2002	2003
(By Principal Countries)	World Production of Potash (In '000 tonnes of K2O content)		
Belarus	4495	3791	4229
Canada (chloride)	8181	8815	9140
Germany (potassium salt)	3549	3472	3563
Israel (Chloride)	1774	1918	1958
Jordan	1178	1174	1177
Russia	4258	4432	4653
USA (Potassium salt0	1200	1200	1100
Other countries	2465	2398	2480
World Total	27100	26900	28300
Source : World Mineral Production. 1999-2003			

Table A-4: Jordanian unemployed persons age 15+ years by sex and broad age groups (percentage distribution)

Broad Age Groups	Sex		
	Total	Male	Female
Total	7298	5360	1937
Percent	100	100	100
15 - 19	15.8	20.6	2.4
20 - 24	38	34.5	47.5
25 - 39	37.7	34.8	45.7
40 - 54	7.2	8.4	4
55 - 64	1.3	1.6	0.3
65 +	0.1	0.1	0.1

Note: Slight differences in the totals of some tables are due to weighting procedures and rounding of figures
Department of Statistics/Employment and Unemployment Survey- Annual Report 2005

Table A-5: Jordanian membership in international organizations

1.	ABEDA: Arab Bank for Economic Development in Africa
2.	ACC: Arab Cooperation Council
3.	AFESD: Arab Fund for Economic and Social Development
4.	AL: Arab League (1945)
5.	AMF: Arab Monetary Fund
6.	CAEU: Council of Arab Economic Unity
7.	CCC: Customs Cooperation Council
8.	CTBTO: Preparation Commission for the Nuclear-Ban-Treaty Operation
9.	ESCWA: Economic and Social Commission for West Africa
10.	FAO: Food and Agricultural Organization (1951)
11.	G-77: Group of 77
12.	IAEA: International Atomic Energy Agency (1966)
13.	IBRD: International Bank for Reconstruction (1952)
14.	ICAO: International Civil Aviation Organization (1947)
15.	ICC: International Chamber of Commerce
16.	ICJ: International Court of Justice (1955)
17.	ICCt: International Criminal Court (2002)
18.	ICFTU: International Confederation of Free Trade Unions
19.	ICRC: International Committee of the Red Cross (1948)
20.	ICRM: International Red Cross and Red Crescent Movement
21.	ICSID: International Centre for Settlement of Disputes (1972)
22.	IDA: International Development Association
23.	IDB: Islamic Development Bank (1974)
24.	IFAD: International Fund for Agricultural Development (1979)
25.	IFC: International Finance Corporation (1956)
26.	IFRCS: International Federation of Red Cross and Red Crescent Societies (1950)
27.	ILO: International Labour Organization (1956)
28.	IMF: International Monetary Fund (1952)
29.	IMO: International Maritime Organization (1973)
30.	Intelsat: International Telecommunications Satellite Organization
31.	Interpol: International Criminal Police Organization (1956)
32.	IOC: International Olympic Committee (1963)
33.	IOM: International Organization for Migration (1999)
34.	IPU: Inter-Parliamentary Union (1964)
35.	ISESCO: Islamic Educational Scientific and Cultural Organization (1982)
36.	ISO (correspondent): International Organization for Standardization (1947)
37.	ITSO: International Telecommunications Satellite Organization (1965)
38.	ITU: International Telecommunication Union
39.	ITUC: International Trade Union Confederation

40.	MIGA: Multilateral Investment Guarantee Agency (1988)
41.	MINURSO United nations Mission for the Referendum in Western Sahara
42.	MONUC: UN Organization Mission in the Democratic Republic of the Congo
43.	NAM: Non-aligned Movement (1964)
44.	NPT: Nuclear Non-Proliferation Treaty (1970)
45.	OIC: Organization of Islamic Conference (1969)
46.	OPCW: Organization for the Prohibition of Chemical Weapons (1997)
47.	OSCE: (partner): Organization for Security and Cooperation in Europe
48.	PCA: Permanent Court of Arbitration (1992)
49.	UN: United Nations (1955)
50.	UNAMSIL: United Nations Mission in Sierra Leone
51.	UNCTAD: United Nations Conference on Trade and Development (1964)
52.	UNESCO: United Nations Educational, Scientific, and Cultural Organization (1950)
53.	UNHCR: United Nations High Commissioner for Refugees
54.	UNICEF: United Nations Children's Fund
55.	UNIDO: General Assembly United Nations Industrial Development Organization(1985)
56.	UNMEE: United Nations Mission in Ethiopia and Eritrea (2000)
57.	UNMIBH: United Nations Mission in Bosnia and Herzegovina
58.	UNMIK: United Nations Interim
59.	Administration Mission in Kosovo
60.	UNMOP: United Nations Mission (1992)
61.	UNMOT: United Nations Observer Mission in Tajikistan (1994)
62.	UNOMIG: United Nations Observer Mission in Georgia (1994)
63.	UNRWA: United Nations Relief & Works Agency for Palestine Refugees in the Near East (1952)
64.	UNTAES: United Nations (1996)
65.	UPU: Universal Postal Union (1947)
66.	UNWTO: World Tourism Organization (1975)
67.	WB: World Bank (1952)
68.	WCO: World Customs Organization (1964)
69.	WFTU: World Federation of Trade Unions
70.	WHO: World Health Organization
71.	WIPO: World Intellectual Property Organization (1972)
72.	WMO: World Meteorological Organization (1955)
73.	WTO: World Trade Organization (2000)

Source: Mapzones, 2011
http://www.mapzones.com/world/middle_east/jordan/organizationindex.php
http://www.worldstatesmen.org/International_Organizations.html

APPENDIX B: AMMAN STOCK EXCHANGE DATA

This is an example of the financial data available from the Jordanian Shareholding Companies Guide 2005 for the Arab Bank, a firm listed in the ASE.

Table B-1: Financial data for a firm listed in the ASE during 2001-2004

ARAB BANK	2004	2003	2002	2001
Trading Information				
Par Value/Share (JD)	10.00	10.00	10.00	10.00
Closing Price (JD)	237.80	305.00	184.00	200.00
Value Traded (JD)	822,921,283	177,501,090	222,108,252	207,897,823
No. of Shares Traded	3,403,570	748,540	1,135,090	1,189,980
No. of Transactions	33,856	14,314	9,080	11,730
Subscribed Shares	17,600,000	8,800,000	8,800,000	8,800,000
Market Capitalization	4,185,280,000	2,684,000,000	1,619,200,000	1,760,000,000
Fiscal Year Ended	12/31/2004	12/31/2003	12/31/2002	12/31/2001
Assets (JD)				
Cash & Balances at Central Banks	2,253,477,000	2,103,607,000	1,735,788,000	1,629,226,000
Balances at Banks & Financial Institutions	3,444,403,000	3,770,014,000	3,864,377,000	3,755,995,000
Deposits at Banks and Financial Institutions	500,751,000	583,714,000	476,339,000	497,851,000
Trading Investments	820,840,000	642,516,000	561,299,000	468,896,000
Available for Sale Investments	1,918,425,000	1,500,996,000	1,433,663,000	1,028,434,000
Held to Maturity Investments, Net	822,527,000	773,263,000	877,143,000	1,372,410,000
Investments in Affiliates	239,302,000	201,622,000	182,274,000	163,372,000
Direct Credit Facilities, Net	6,386,255,000	5,513,450,000	5,189,256,000	5,235,743,000
Provision for Credit Facilities	305,735,000	302,015,000	306,179,000	309,058,000
Interests in Suspense	118,142,000	106,420,000	91,981,000	73,275,000
Fixed Assets, Net	156,820,000	148,120,000	140,481,000	130,111,000
Other Assets	243,228,000	239,810,000	253,533,000	266,797,000
Total Assets	16,786,028,000	15,477,112,000	14,714,153,000	14,548,835,000
Liabilities &Shareholders' Equity (JD)				
Customers Deposits	11,096,182,000	10,572,042,000	10,052,167,000	9,175,787,000
Banks & Financial Institutions Deposits	2,359,315,000	2,027,478,000	2,110,080,000	3,072,811,000
Cash Margins	1,127,390,000	999,671,000	804,329,000	725,666,000
Other Liabilities	602,762,000	444,395,000	461,551,000	398,976,000
Total Liabilities	15,185,649,000	14,043,586,000	13,428,127,000	13,451,903,000
Shareholders' Equity (JD)				
Authorized Capital	176,000,000	88,000,000	88,000,000	88,000,000
Subscribed Capital	176,000,000	88,000,000	88,000,000	88,000,000
Paid In Capital	176,000,000	88,000,000	88,000,000	88,000,000
Legal Reserve	107,000,000	88,000,000	88,000,000	88,000,000
Voluntary Reserve	262,000,000	313,000,000	284,000,000	253,000,000
Other Reserves	857,000,000	804,000,000	748,000,000	613,000,000
Issuance Premium/Discount	0	0	0	0
Treasury Stocks	0	0	0	0
Proposed Dividends	35,200,000	35,200,000	35,200,000	35,200,000
Foreign Currencies Translation	100,982,000	82,239,000	40,568,000	12,773,000
Accumulated Change in Fair Value	49,796,000	3,537,000	(22,822,000)	(8,418,000)
Retained Earnings	12,401,000	19,550,000	25,080,000	15,377,000
Total Shareholders' Equity	1,600,379,000	1,433,526,000	1,286,026,000	1,096,932,000
Total Liabilities &Shareholders' Equity	16,786,028,000	15,477,112,000	14,714,153,000	14,548,835,000
Income Statement (JD)				
Interest Income	539,934,000	499,583,000	585,661,000	775,153,000
Interest Expense	262,550,000	251,086,000	325,469,000	506,754,000

Net Interest Income	277,384,000	248,497,000	260,192,000	268,399,000
Net Commissions Income	95,127,000	79,641,000	72,822,000	70,327,000
Gains from Financial Assets & Instruments	15,239,000	16,844,000	8,248,000	17,565,000
Other Operations Income	89,094,000	87,024,000	66,662,000	56,041,000
Net Operational Income	476,844,000	432,006,000	407,924,000	412,332,000
Depreciation & Amortization	17,031,000	16,774,000	15,674,000	14,207,000
Provision for Credit Facilities	24,853,000	35,848,000	31,435,000	41,511,000
Total Operational Expenses	291,576,000	282,726,000	254,200,000	253,246,000
Operational Income	185,268,000	149,280,000	153,724,000	159,086,000
Other (Expenses) Revenue	(1,224,000)	(2,335,000)	1,425,000	5,983,000
Minority Interest	0	0	0	0
Net Income Before Tax	184,044,000	146,945,000	155,149,000	165,069,000
Income Tax (Period)	39,844,000	26,745,000	24,949,000	25,869,000
Income Tax (Previous years)	0	0	0	0
Other Provisions	0	0	0	0
Net Income	144,200,000	120,200,000	130,200,000	139,200,000
Cash Flow (JD)				
Cash Balance (Beginning)	3,900,208,000	3,669,904,000	2,570,270,000	2,489,040,000
Net Cash Flow from (Used In) Operating Activities	20,302,000	224,474,000	1,067,350,000	178,369,000
Net Cash Flow from (Used In) Investing Activities	(487,321,000)	3,331,000	36,064,000	(59,260,000)
Net Cash Flow from (Used In) Financing Activities	(20,994,000)	(39,172,000)	(31,575,000)	(34,690,000)
Differences in Exchange	18,743,000	41,671,000	27,795,000	(3,189,000)
Cash Balance (Ending)	3,430,938,000	3,900,208,000	3,669,904,000	2,570,270,000
Financial Ratios				
Turnover Ratio %	19.34	8.51	12.90	13.52
Earnings Per Share (JD)	8.19	13.66	14.80	15.82
Dividend Per Share (JD)	2.00	4.00	4.00	4.00
Book Value Per Share (JD)	90.93	162.90	146.14	124.65
Price Earnings Ratio (Times)	29.02	22.33	12.44	12.64
Dividend Yield %	0.84	1.31	2.17	2.00
Dividends Per Share to Earnings Per Share	24.41	29.28	27.04	25.29
Price to Book Value (Times)	2.62	1.87	1.26	1.60
Return On Assets %	0.86	0.78	0.88	0.96
Return On Equity %	9.01	8.38	10.12	12.69
Net Interest and Commissions Income/Operational Income%	78.12	75.96	81.64	82.15
Credit Interest/Credit Facilities, Net%	8.45	9.06	11.29	14.81
Net Income/Total Revenues %	19.50	17.60	17.75	15.15
Total Revenues / Total Assets %	4.40	4.41	4.98	6.32
(Provision for Credit Facilities + Interest in Suspense) / Credit Facilities%	6.64	7.41	7.67	7.30
Equity Ratio %	9.53	9.26	8.74	7.54
Shareholders Equity/Total Deposits%	11.89	11.38	10.57	8.96
Debt Ratio %	90.47	90.74	91.26	92.46
Total Deposits / Total Assets%	80.16	81.41	82.66	84.19
Net Credit Facilities to Total Assets%	38.05	35.62	35.27	35.99
Net Credit Facilities to Total Deposits%	47.46	43.76	42.67	42.75
Shareholders' Equity to Credit Facilities, Net	25.06	26.00	24.78	20.95
Quick Ratio (Times)	0.46	0.51	0.50	0.48
Cash & Investments to Total Deposits%	74.32	76.00	75.08	72.79
Cash+Trading Investments/Total Deposits (Times)	0.52	0.56	0.55	0.52
Source: ASE Annual Shareholders' Guide 2005				

Appendix C: Questionnaires and Interview Protocol

Pilot Survey for Individual Equity Investors of the Amman Stock Exchange

Please answer the following questions by ticking the answer that most applies to you.

1. Do you invest in the common shares of the Amman Stock Exchange (ASE)? ☐ Yes ☐ No
    1a) If yes, indicate the number of years you have been investing in shares?
    ☐ 1-2 yrs ☐ 3-5 yrs ☐ 6-9 yrs ☐ 10-15 yrs ☐ 16-19 yrs ☐ 20 yrs or more
    1b) If yes, indicate the number of companies listed in the ASE in which you own shares?
    ☐ 1-2 ☐ 3-5 ☐ 6-9 ☐ 10-15 ☐ 16-20 ☐ 21 or more

2. What is the current value of your investment portfolio in Jordanian dinars (JDs)? _____
☐ under 5,000 ☐ 5,001-10,000 ☐ 10,001-20,000 ☐ 20,001-40,000 ☐ 40,001-60,000
☐ 60,001-100,000 ☐ 100,001-150,000 ☐ 150,001-200,000 ☐ 200,001-500,000
☐ 500,001-1,000,000 ☐ 1,000,000 or greater

3. What sources of financial information do you use in selecting shares for your investment portfolio?
    ☐ Newspapers daily stock information   ☐ Heard on the street news
    ☐ ASE Annual Shareholders guide   ☐ ASE website financial information
    ☐ Advice from professional analysts/brokers ☐ Company audited financial reports
    ☐ Other (explain): _____

4. Do you use investment models to evaluate and select shares for your investment portfolio? ☐ Yes ☐ No
4a) If yes, based on your experience, rank the following investment models according to degree of usefulness?

	Very useful	somewhat useful	useful	a little useful	not useful
P/E multiple	☐	☐	☐	☐	☐
P/BV multiple	☐	☐	☐	☐	☐
EPS	☐	☐	☐	☐	☐
Dividends	☐	☐	☐	☐	☐
P/Sales	☐	☐	☐	☐	☐
Other 1: _____	☐	☐	☐	☐	☐
Other 2: _____	☐	☐	☐	☐	☐
Other 3: _____	☐	☐	☐	☐	☐
Other 4: _____	☐	☐	☐	☐	☐

5. Do you take advise from investment analysts or brokers?   ☐ Yes   ☐ No
    5a) If yes, how helpful are their recommendations?
    ☐ very helpful   ☐ somewhat helpful   ☐ a little helpful   ☐ not helpful
    5b) If no, explain why you do not take advice from investment professionals?

The following statement refers to questions 6 and 7.

After the economic crisis in 1988, the International Financial Reporting Standards (IFRS) was adapted in Jordan in 1990. As a result, all public shareholding companies listed on the ASE are required to comply with the IFRS in their external financial reporting. Current debate focuses on the usefulness of the IFRS.

6. Are you familiar with the IFRS required by the ASE for listed companies? ☐ yes ☐ no

7. Do you agree that companies listed in the ASE should comply with the IFRS? ☐ Yes ☐No

   7a) If yes, please explain why you believe companies listed in the ASE should follow the IFRS?

_____

   7b) If no, please explain why you believe companies listed in the ASE should not follow the IFRS?

_____

8. Do you use financial information from the ASE website or ASE annual shareholders guide? ☐ yes ☐ no

   8a) If yes, please rate to what extent is the financial information useful, relevant, reliable, timely and comparable in making your investment portfolio decisions.

	not at all 0%	a little 1-29%	somewhat 0-59%	very 60-89%	extremely 90-100%
Useful	☐	☐	☐	☐	☐
Relevant	☐	☐	☐	☐	☐
Reliable/ Faithfully Represented	☐	☐	☐	☐	☐
Timely	☐	☐	☐	☐	☐
Comparable	☐	☐	☐	☐	☐

9.Explain why you believe the financial information **is or is not** useful, relevant, reliable, timely or comparable?

Useful   _____

Relevant   _____

Reliable   _____

Timely   _____

Comparable_____

10. Please give your comments on any of the above questions?

_____

_____

_____

Note: This survey is being conducted to do research on the usefulness of IFRS accounting information in Jordan. Information used from this survey will be anonymous and respondents will be exempt from any responsibility for their opinions expressed in any publication on this research. No information disclosed will be released to external sources without prior permission of respondents.

Questionnaire for Individual Equity Investors of the Amman Stock Exchange

يهدفهذاالاستبيانلانجازبحثيتعلقبفائدةمعاييرالمحاسبةالدوليةفيانتاجالمعلوماتالمحاسبيةفيالأردن.
انمعلوماتهذاالاستبيانستكونسريةويعفىالأشخاصالمجيبونعلىهذاالاستبيانمنأيةمسؤوليةفيحالالنشرالبحثلتعبيرهمعنرأيهم.
ولنيتمالكشفعنالمعلوماتلمصادرخارجيةبدونالحصولعلىالسماحالمسبقمنالأفرادالذينأجابواعلىالاستبيان.

Note: This survey is being conducted to do research on the usefulness of IFRS accounting information in Jordan. Information used from this survey will be anonymous and respondents will be exempt from any responsibility for their opinions expressed in any publication on this research. No information disclosed will be released to external sources without prior permission of respondents.

أرجوالأجابةعلىالأسئلةالتاليةباختيارالجوابالأكثرملائمةلك

Please answer the following questions by ticking the answer that most applies to you.

1)هلتستثمرفيالأسهمالعاديةفيسوقعمانالمالية؟   نعم ☐   لا ☐

1. Do you invest in the common shares of the Amman Stock Exchange (ASE)? ☐Yes ☐No

أ)اذا كانت الاجابة نعم فما هو عدد السنوات التي كنت فيها مستثمر في الأسهم؟1

1a) If yes, indicate the number of years you have been investing in shares.

☐ 1-2   ☐ 3-5   ☐ 6-9   ☐ 10-15 ☐ 16 >

1ب)اذا كانت الاجابة نعم فما هو عدد الشركات المدرجة في سوق عمان المالية التي تمتلك فيها أسهم؟

1b) If yes, indicate the number of companies listed in the ASE in which you own shares.

☐ 1-2   ☐ 3-5   ☐ 6-9   ☐ 10-15 ☐ 16 >

2) ماهيالقيمةالجاريةلحقيبةاستثماركفيالدينارالأردني؟

2. What is the current value of your investment portfolio in Jordanian dinars (JDs)?

☐< 5,000 ☐ 5,001-20,000 ☐ 20,001-50,000 ☐ 50,001-100,000 ☐ 100,001-250,000
☐ 250,001-500,000 ☐ 500,001-1,000,000   ☐>1,000,001

3) ماهيمصادرالمعلوماتالماليةالتيتستخدمهافياختياركلأسهملحقيبةاستثمارك؟

3. What sources of financial information do you use in selecting shares for your investment portfolio?

اشاعات	☐	احصائات الاسهم اليومية في الصحف ☐
Heard on the street news		Newspapers daily stock statistics
التقارير المالية المدققة للشركة☐		قاعة التداو☐
Investors trading floor for live market trading		Company audited financial reports
نصائح من المحللين الماليين☐		موقع سوق عمان المالية☐
Advice from professional analysts/brokers		ASE websites: www.ase.com.jo

Other (explain): _____ :اخرى

نعم☐لا☐ 4) هل تستخدم هياكل رياضية من أجل تقييم الأسهم لاختيارها لحقيبة استثمارك؟

4. Do you use investment models to evaluate and select shares for your investment portfolio?☐Y ☐N

Page 1

4أ) اذا كان الجواب نعم و بناء على خبرتك, رتب الهياكل الرياضية التالية بناء على درجة فائدتها.

4a) If yes, based on your experience, rank the following investment models according to degree of usefulness.

	غير مفيد not useful	مفيد قليلا little useful	مفيد useful	مفيد جدا very useful
التحرك في سعر السهم Stock price movements on ticker board	☐	☐	☐	☐
سعر السهم/ الأرباح للسهم الواحد P/E multiple	☐	☐	☐	☐
سعر السهم/ القيمة الدفترية P/BV multiple	☐	☐	☐	☐
توزيعات الأرباح Dividends	☐	☐	☐	☐
التحليل التقني Technical analysis	☐	☐	☐	☐
Other/اخرى _____	☐	☐	☐	☐

5) هل تأخذ بنصيحة المحلل المالي أو السمسار؟　☐نعم　☐لا

5. Do you take advise from investment analysts or brokers?　☐ Yes ☐ No

5أ) اذا كان الجواب نعم الى أي مدى كانت توجيهاتهم مفيدة؟

5a) If yes, how helpful are their recommendations?

غيرمفيدة ☐ very helpful	مفيدةقليلا ☐ helpful	مفيدة ☐ little helpful	مفيدةجدا ☐ not helpful

5ب) اذا كان الجواب لا فوضح لماذا لا تأخذ بنصيحة مهنيو الأستثمار؟

5b) If no, explain why you do not take advice from investment professionals.

غياب الثقة　☐(Lack of trust)

دم وجود خبرة كافية لأسس الاستثمار　☐(Lack sufficient knowledge of investment fundamentals)

النصيحة تقوم على منافع شخصية　☐(Advice given based on their own self interests)

الثقة بنفسي على قدرتي باتخاذ قراراتي　☐(Trust my own decision making ability)

التكلفة الناتجة عن الرجوع الى النصيحة من المهنيون　☐(Costly to seek professional advice)

اخرى _____　☐Other)

<div dir="rtl">

الفقرةالتاليةتتعلقبالأسئلة 6 الى 9:
لقدتماختيارمعاييرالمحاسبةالدوليةفيالأردنفيعام 1990 بعدحدوثالمشاكلالاقتصاديةفيعام 1988.
نتيجةلذلكفأصبحعلىجميعالشركاتالمساهمةالمدرجةفيسوقعمانالماليةأنتتبعمعاييرالمحاسبةالدوليةفياعدادتقاريرهاالماليةالخارجية.
يدورحالياًنقاشنظريوعمليالمدىفائدةهذهالمعايير.

</div>

The following statement refers to questions 6 through 9.
After the economic crisis in 1988, the International Financial Reporting Standards (IFRS) was adapted in Jordan in 1990. As a result, all public shareholding companies listed on the ASE are required to comply with the IFRS in their external financial reporting. Current debate focuses on the usefulness of the IFRS.

<div dir="rtl">

نعم ☐ 6) هل أنت على علم بمعايير المحاسبة الدولية الدولية المطلوب اتباعها قبل الشركات المدرجة في سوق عمان المالية؟لا☐

</div>

6. Are you familiar with the IFRS required by the ASE for listed companies?☐ yes   ☐ no

<div dir="rtl">

☐ لا ☐) هل توافق على أن الشركات المدرجة في سوق عمان المالية يجب أن تتبع المعايير الدوليةنعم7

</div>

7. Do you agree that companies listed in the ASE should comply with the IFRS? ☐Yes☐No

<div dir="rtl">

7أ) اذا كان الجواب نعم, فمن فضلك قم بترتيب المعلومات المالية بناء على فائدتها, ملئمتها, مصداقيتها, توقيتها و مقارنتها:

</div>

7a) If yes, please rate to what extent is the financial information useful, relevant, reliable, timely and comparable in making your investment portfolio decisions.

	درجةعالية	درجةجيدة	قليلةنسبيا	قليلا	لاشيء
		nothing	a little	somewhat	very	extremely
مفيد Useful	☐	☐	☐	☐	☐
ملائمة Relevant	☐	☐	☐	☐	☐
مصداقية Reliable or Faithfully Represented	☐	☐	☐	☐	☐
توقيت Timely	☐	☐	☐	☐	☐
مقارنة Comparable	☐	☐	☐	☐	☐

<div dir="rtl">

8) أرجو أن توضح لماذا المعلومات المالية الناتجة عن استخدام معايير المحاسبة الدولية تتميز بأنها مفيدة, ملائمة, صادقة, توقيتها, و امكانية المقارنة.

</div>

8. Explain why you believe IFRS financial information **is** useful, relevant, reliable, timely or comparable.

_____

<div dir="rtl">

9) أرجوأنتوضحلماذاالمعلوماتالماليةغيرمفيدة , غيرملائمة, غيرصادقة, وتوقيتهاغيرمناسب, وصعوبةمقارنتها.

</div>

9. Explain why you believe IFRS financial information **is not** useful, relevant, reliable, timely or comparable.

_____

<div dir="rtl">

10) أرجوأنتعطيقعلنأيمنالأسئلةالسابقة.

</div>

10. Please give your comments on any of the above questions.

_____

_____

Page 3

**Questionnaire for Institutional Equity Investors
of the Amman Stock Exchange**

This questionnaire is part of a research project to examine the decision-usefulness of accounting information produced from implementing the International Financial Reporting Standards (IFRS) of the Amman Stock Exchange (ASE) to equity investors in Jordan. The questionnaire should only take about 10-15 minutes to complete. If you would like to add further comments, please feel free to do so in the areas provided. The information you provide will be treated in the strictest of confidence. You can choose to be anonymous, as you will not be asked for your name or address unless you wish to give this information. The information you provide will be used as supporting data for my research work at the University of Sunderland in the UK. If you have any questions or would like further information, please do not hesitate to contact me by email at beatriz@sky.edu.jo.

Thank you for your help.

Beatriz Africano

Please answer the questions by ticking the answer that most apply to you.

1. Position: _____

2. Company type: _____

3. Do you invest in the common shares of the ASE? ☐ Yes ☐ No

4. What sources of financial information do you use in selecting shares for your investment portfolio? (Please select all options that apply to you)

☐ Heard on the street news   ☐ Newspapers daily stock statistics

☐ Investors live market trading floor   ☐ Company audited financial reports

☐ In house equity research reports   ☐ ASE websites: www.ase.com.jo

Other (specify): _____

5 Do you use any accounting information to make investment decisions? ☐ Yes ☐ No

6 If yes, specify which accounting or financial information you use? _____
_____

7 For what purpose do you use the accounting information? _____
_____

8 Based on your experience, rank the investment models you have used according to degree of usefulness. (Please tick **only one** per model)

	extremely useful (5)	very useful (4)	moderately useful (3)	slightly useful (2)	not useful (1)
Dividend Discount Model	☐	☐	☐	☐	☐
Discounted CF Model	☐	☐	☐	☐	☐
Dividends	☐	☐	☐	☐	☐
P/sales	☐	☐	☐	☐	☐
P/E multiple	☐	☐	☐	☐	☐
P/B multiple	☐	☐	☐	☐	☐
P/CF	☐	☐	☐	☐	☐
Free CF model	☐	☐	☐	☐	☐
Capital Asset Pricing Model	☐	☐	☐	☐	☐
Technical Analysis	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐

(Please specify)_____

IFRS:

The following statement refers to questions 9 through 16.

After the Jordanian economic crisis in 1988, all public shareholding companies listed on the ASE were required to comply with the International Accounting Standards, which were later replaced by the International Financial Reporting Standards (IFRS). The main objective of financial reporting is to provide financial information that is useful to present, potential equity investors and other users in making investment decisions. Current debate focuses on the decision-usefulness of financial information produced from implementing the IFRS.

9) Are you familiar with the IFRS required by the ASE for listed companies? ☐ Yes ☐ No

10) Do you agree that companies listed in ASE should comply with the IFRS? ☐ Yes ☐ No

11) Rank the extent to which financial information produced from implementation of the IFRS is useful, relevant, faithfully represented, verifiable, timely and comparable for making investment decisions in the ASE. (Please tick **only one** per row)

	Extremely (5)	Considerably (4)	Moderately (3)	Slightly (2)	Not at all (1)
Useful	☐	☐	☐	☐	☐
Relevant	☐	☐	☐	☐	☐
Faithfully Represented	☐	☐	☐	☐	☐
Verifiable	☐	☐	☐	☐	☐
Understandable	☐	☐	☐	☐	☐
Timely	☐	☐	☐	☐	☐
Comparable	☐	☐	☐	☐	☐

12) Explain why accounting information produced from applying the IFRS **is** or **is not** useful.

_____

_____

_____

13) Are there any other financial reporting standards that you believe would produce more decision-useful accounting information?

☐ Yes (specify)_____   ☐ No

15) How have developments within the **ASE** influenced the decision-usefulness of accounting information?

_____

_____

_____

_____

_____

16) How have developments within the Jordanian **accounting profession** influenced the decision-usefulness of accounting information?

_____

_____

_____

_____

17) Should Jordan develop their own national financial reporting standards? ☐ Yes ☐ No

18) How many years you have been investing in shares in the ASE.

☐1-2　　☐ 3-5　　☐ 6-9　　☐10-15　　☐16>

19) Who do you buy and sell common shares for? (Please select all options that apply to you)

☐ Myself　☐ My company　　☐ Individual clients　　☐ Institutional clients

20) How many companies listed in the ASE do you or your clients own shares.

	1-2	3-5	6-9	10-15	16 >
Myself	☐	☐	☐	☐	☐
My company	☐	☐	☐	☐	☐
Individual clients	☐	☐	☐	☐	☐
Institutional clients	☐	☐	☐	☐	☐

21) What is the value of the investment portfolio(s) you make investment decisions (JDs)?

☐< 50,000　　　☐ 50,001-100,000　　☐ 100,001- 500,000　　☐ 500,001-1mil
☐>1mil -10mil　　☐>10mil - 50mil　　☐>50mil -100mil　　☐>100mil

Please write any additional comments you may have.

_____

_____

_____

_____

If additional clarification of answers is needed, are you available to clarify? ☐ Yes ☐No

Email address (optional):

Thank you for completing this questionnaire

Interview protocol

Confidentiality statement: The information you provide during the course of this interview will remain confidential and your identity will not be released without your written consent. The information and findings from this interview will be used as supporting data for my research work at the University of Sunderland, UK.

Name of interviewee:

Date of interview:

Length of interview:

Contact information:

Purpose of interview: To gather opinions, thoughts and facts from accounting experts regarding how developments within the ASE and the Jordanian accounting profession have influenced the decision-usefulness of financial accounting information produced from the implementation of IAS/IFRS?

Objective of the research study: this interview is part of a research study to evaluate the decision-usefulness of accounting information produced from implementing the IFRS to equity investors of the ASE during the period 1980-1989 and 1991-2009.

1st Q: How have developments within the ASE influenced the decision-usefulness of accounting information produced from implementation of the IFRS?
Response:

2nd Q: How have developments within the accounting profession influenced the decision-usefulness of accounting information produced from implementation of the IFRS?
Response:

Follow-up questions:

   1)

Response

   2)

Response

   3)

Response

Notes and impressions:

Appendix D: Results

Chi-square hypothesis test results for individual and institutional investors' rank of qualitative characteristics of useful financial information.

Table D-1: Chi-square test results for qualitative characteristics of useful financial information for individual investors

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The categories of Usefulness occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
2	The categories of Relevance occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
3	The categories of Faithful Representation occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
4	The categories of Timeliness occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
5	The categories of Comparablility occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table D-2: Chi-square test results for qualitative characteristics of useful financial information for institutional investors

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The categories of Usefulness occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
2	The categories of Relevance occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
3	The categories of Faithful Representation occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
4	The categories of Timeliness occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
5	The categories of Comparablility occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
6	The categories of Understandability occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
7	The categories of Verifiability occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

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