NEAR EAST UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF BANKING AND FINANCE
BANKING AND ACCOUNTING PROGRAM

THE VALUE RELEVANCE OF ACCOUNTING INFORMATION WITHIN TURKEY: EVIDENCE FROM NON-FINANCIAL FIRMS

ABDALRAHMAN KARIM

MASTER'S THESIS

NICOSIA
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THESIS SUPERVISOR
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ACCEPTANCE/APPROVAL

We as the jury members certify the '**The Value Relevance of Accounting Information Within Turkey: Evidence From Non-Financial Firms**' prepared by the Abdalrahman Othman Karim defended on 30/05/2019 has been found satisfactory for the award of degree of Master

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DECLARATION

I am a master's student at the Banking and Accounting department, hereby declare that this dissertation entitled 'The Value Relevance of Accounting Information Within Turkey: Evidence From Non-Financial Firms'' has been prepared myself under the guidance and supervision of ''**Assoc. Prof. Dr. Aliya ISIKSAL**'' in partial fulfilment of the Near East University, Graduate School of Social Sciences regulations and does not to the best of my knowledge breach any Law of Copyrights and has been tested for plagiarism and a copy of the result can be found in the Thesis.

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DEDICATION

I would like to thank God first and dedicate this study to my parents for their sacrifices during this time and the accomplishment of this thesis would have not been possible without them. I would also like to express my deep gratitude to my sister (Marjan) for her support and encouragement,

Also, I want to express my very great appreciation to all my family members and my friends who helped me during the process of writing this thesis**.**

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ABSTRACT

THE VALUE RELEVANCE OF ACCOUNTING INFORMATION WITHIN TURKEY: EVIDENCE FROM NON-FINANCIAL FIRMS

This study examines the value relevance of accounting information within Turkey for non-financial firms listed on the Borsa Istanbul for the period 2008-2017. Based on panel data regression, we used valuation model developed by Ohlson (1995). In this study, there are two main objectives of the research the first one is to examine the value relevance from book value and earnings reported by non-financial firms listed on the BIST during the period 2008-2017. The second one is to examine the extent to which other possible factors, namely dividend per share, and leverage ratio, significantly impact the relationship between accounting information and stock prices.

This research findings indicate that book value and earnings were positively and significantly related to stock prices from 2008 to 2017. However, the leverage ratio has an insignificant and negative impact on stock prices. The results of this paper make several valuable contributions. They provide useful insights for investors and creditors in terms of value relevance from accounting information in non-financial firms listed on the BIST in Turkey during the period 2008-2017.

Keywords: Value Relevance, Accounting Information, Non-Financial Firms, Turkey, Leverage, Dividend.

ÖZ

THE VALUE RELEVANCE OF ACCOUNTING INFORMATION WITHIN TURKEY: EVIDENCE FROM NON-FINANCIAL FIRMS

Bu çalışma, 2008-2017 dönemi için Borsa İstanbul'da listelenen finansal olmayan firmaların Türkiye içindeki muhasebe bilgilerinin önemini incelemektedir. Panel veri regresyonuna dayanarak, Ohlson (1995) tarafından geliştirilen değerleme modelini kullandık. Bu çalışmada, araştırmanın iki temel amacı vardır: Bunlardan ilki, 2008-2017 döneminde BIST'te listelenen finansal olmayan firmalar tarafından rapor edilen değer ve defter değeri ile kazanılan değer arasındaki ilişkiyi incelemektir. İkincisi, hisse başına temettü ve kaldıraç oranı gibi diğer olası faktörlerin muhasebe bilgileri ile hisse senedi fiyatları arasındaki ilişkiyi ne ölçüde etkilediğini incelemektir.

Bu araştırma bulguları, defter değeri ve kazançların, 2008'den 2017'ye kadar hisse senedi fiyatları ile pozitif ve anlamlı şekilde ilişkili olduğunu göstermektedir. Ancak, kaldıraç oranının hisse senedi fiyatları üzerinde önemsiz ve olumsuz bir etkisi vardır. Bu yazının sonuçları birkaç değerli katkı sağlar. Yatırımcılara ve alacaklılara, 2008-2017 döneminde Türkiye'de BIST'te listelenen finansal olmayan firmalarda muhasebe bilgilerinden değer alaka açısından anlamlı bilgiler sağlar.

Anahtar Kelimeler: Değer Alaka, Muhasebe Bilgisi, Finansal Olmayan Firmalar, Türkiye, Kaldıraç, Temettü.

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LIST OF ABBREVIATIONS

ASX: Australian Securities Exchange

BSE: Bucharest Stock Exchange

BIST: Borsa Istanbul Turkey

CSE: Colombo Stock Exchange

COG: Cost of goods sold

CMB: Capital Markets Board of Turkey

CAS: Chinese Accounting Standards

CSRC: Chinese Securities Regulatory Commission

D-W: Durbin Watson test

EHM: Efficient Market Hypothesis

EU: European Union

FE: Fixed Effect

FASB: Financial Accounting Standards Board

GAAP: Generally accepted accounting principles

GDP: Growth Domestic Product

HGB: Handelsgesetzbuch literally (German accounting regulations)

IAS: International Accounting Standards

IASB: International Accounting Standards Board

IFRS: International Financial Reporting Standards

IFA: International Federation of Accountants

IASC: Inter-Agency Standing Committee

ISE: Integrated Systems Europe

IBEX: Indice Bursátil Español, literally (Spanish Exchange Index)

IGBM: Madrid Stock Exchange General Index

KSE: Karachi Stock Exchange

KSM: Korean Stock Market

LSE: London Stock Exchange

MOF: Ministry of Finance

NYSE: New York Stock Exchange

OLS: Ordinary Least Squared

OSE: Oslo Stock Exchange

RE: Random Effect

ROA: Return on Asset

SEC: The U.S. Securities and Exchange Commission

SOX: Sarbanes-Oxley

SOX 404: Sarbanes-Oxley Act Section 404

STA: Sales to Asset

SET: Stock Exchange of Thailand

SG&A: Sales, General and Administration

TSEC: Thailand Securities Exchange Commission

TSPAKB*:* Türkiye Sermaye Piyasası Aracı Kuruluşları Birliği

TASC: Thai Accounting Standards Committee

TSX: Tehran Stock Exchange

U.S: United States

UK: United Kingdom

CHAPTER ONE

INTRODUCTION

1. 1 Background of the Study

In this study, we investigate the value relevance of accounting information processed by non-financial firms listed on the Borsa Istanbul in Turkey (BIST) across the period from 2008 until 2017. Value relevance in accounting information is a public area of study for academicians in the field of accounting and considered to be particularly important for stakeholders, as accounting information satisfies most information needs of decision makers. One of the goals of financial reporting is to provide information to allow investors and creditors to make informed decisions. As such, the information provided has to be useful, relevant and effective for users' economic decisions; the higher value relevance of information increases its usability in decision making and hence optimises those decisions. The main goal of the research on value relevance is to determine whether the companies provide sufficient, worthy and high-quality accounting information in their financial reports that can enable investors to make better informed decisions. The interest in value relevance research is essentially based on the fact that financial statements act as the most important medium of communication with shareholders and other relevant users, and this reality leads to the conclusion that financial statements facilitate the decision-making processes of those who use the information.

According to partial information disclosure theory, when information among managers and external investors is high, investors are confronted with confusion and uncertainty, which leads to an increase in the costs of collecting, processing, interpreting and using accounting information (costs of analysis). This may in turn spoil the information content of accounting figures, thereby weakening the relationship between accounting corporate stock-prices and value relevance. Stock prices are an indication of performance for investors. The response of the market to distributed accounting information is marked by the coefficient in a regression apply model of stock-price as the dependent variable and accounting measures, like earnings, book value, dividend, and leverage are the independent variables.

Value relevance is defined as the capacity of financial statement information to capture and review of firm value, It is measured as the statistical relationship among financial statement information and stock price values or returns.

This study has developed a progression model for empirical analysis to measure the relevance of the firm value of variables in accounting based on the valuation model from Feltham and Ohlson (1995). They developed an earnings model assuming that the roles of book value and earnings role are important in corporate value determination. Subsequently, they have played an important role in most studies and the majority of studies have used the model of Ohlson (1995) to analyse the book value and earnings. These disclosures should be based on standards and predetermined frameworks.

According to Prather-Kinsey (2006), standards are a set of postulations and regulations that all financial statements are expected to adhere to when reporting diverse operational activities ranging from equity, liabilities and assets. These statements are reduced and communicated to stakeholders in order to facilitate the decision-making process (Takacs, 2012). Hence, information included in the financial statements is a means of disseminating the outcomes of transactions. Thus, it is important for various countries to form a synchronized set of reporting standards in order to facilitate financial and performance comparability between firms at international level as well as to improve decision making with regards to

credit and investments (Herbert, Tsegba, Ohanele & Anyahara,2013). The "International Accounting Standards Board (IASB)" aims to establish high quality and globally accepted accounting standards that would help users to know the significance of accounting information (Barth, Landsman & Lang 2008). From the date of establishment to the present time, various standards have been postulated, changed and updated. Nevertheless, studies have examined the significance of financial information and have resulted in controversial outcome in terms of the changes in the standards in both developed and under-developing countries. Ball (2006) propounded that is uncertain whether a level of convergence can be achieved in financial reporting as accounting is manipulated by political and economic forces. Furthermore, the interface between "accounting standards, preparers' incentives regulation enforcement" and other organizational indicators determine the results of financial reporting (Ball, 2006; Holthausen 2009)

Thus, it is challenging to declare with certainty that the adoption of IFRS results in higher quality reporting. The value relevance of accounting information is the capability of accounting figures to impact the equity share price of quoted firms. Accounting information is value relevant if it possesses a predicated correlation amid market value equity, such as returns on stock (Sharma *et al*., 2012). The purpose of value relevance is to examine whether the information utilized by investors in evaluating corporations' equity is replicated by given accounting statistics (Barth *et al*., 2001). According to the IASB (2010) the" general purpose financial reporting" aims are to give vital information to prospective investors and creditors in making rational decisions with regard to a given corporation. This signifies that financial reporting is not an end in it itself, but has to support investors by providing accounting statistics that will enable them to select investment opportunities using their limited assets. Resultantly, accounting information should be sufficiently useful to aid the process of differentiating information options. Consequently, value relevance is the significance of accounting information, and it is has been described as the ability of financial statement data to impact on stock prices. The value relevance research of Francis and Schipper, (1999) and

Bowerman and Sharma (2016) value relevance research focused on the relationship between accounting information and financial market performance. The significance of accounting data in the advanced markets has been documented in the study by Ball and Brown (1968). However, the function of accounting information in securities pricing in emerging markets still remains an area of uncertainty. Accounting data included financial statements is expected to beneficial for policy makers; hence, financial statements need incorporate some basic features, “If financial reporting is to be beneficial, it ought to be applicable and faithfully constitute what it purports to symbolize, the usefulness of financial reporting is more suitable if it is comparable verifiable timely and understandable” (Conceptual Framework, 2010: A33). The primary qualitative feature of financial statements is that they have relevance. This attempts to approach this topic by analysing the accounting information given in financial statements from non-financial firms listed on the Borsa Istanbul in Turkey (BIST) from 2008 until 2017.

1. 2 Problem Statement

This study investigates the value relevance of accounting information inside Turkey of non-financial firms listed on the Borsa Istanbul. The value relevance of accounting information is important for showing the financial statements of firms. According to the literature, value relevance is influenced by a variety of factors, such as leverage and dividends. This group of factors has different effects on the stock price and composition of the relevance. We aim to determine how the value relevance of accounting information is developed in the economy. In our study, we have examined more accounting amounts and have found no decrease in mutual value relevance from 2008 to 2017. We have determined and estimated in each amount’s value relevance and found increases, most notably for amounts related to dividend per share and leverage ratio, which are important in developing economies. Our findings reveal a more significant relationship among stock price and accounting information within the developing economy of Turkey, which is one of the fastest growing economies in the world.

1. 3 Research Questions

This paper examines and analyses the value relevance of accounting earnings, book value, dividend per share, and leverage ratio for firms listed on the Borsa Istanbul during the period 2008-2017. This study has two main objectives: the first one is to examine the value relevance of accounting information produced from non-financial firms listed Borsa Istanbul in Turkey during the period 2008-2017 in terms of book value per share and earnings per share; the second is to examine the value relevance of financial information during 2008-2017 for dividend per share. and leverage ratio. It also examines whether other possible factors, such as the impact of the relation among accounting information and the prices of stocks. In conformity with the experimental literature of Collins et al., (1997) Khanagha, (2011) claimed that accounting information is “book value and earnings”. Based on the motivation of the research, answers will be sought to the following questions:

Does accounting information have value relevance for non-financial firms listed on the Borsa Istanbul in Turkey?

In order to facilitate the process of answering this question, the following sub-questions are also formulated:

1- Is there any relation between stock-prices and accounting variables, namely dividend per share and leverage ratio?

2- What are the necessary variables for accounting information to be value relevant?

1. 4 Purpose of the Study

This study aims to provide empirical evidence related to the value relevance of earnings per share, book value per share, dividend per share, and leverage ratio on the stock prices of non-financial firms listed on the Borsa Istanbul Tukey (BIST). This study aims to examine the value relevance of accounting information in non-financial firms listed on BIST, specifically in terms of whether earnings per share and book value per share have a positive and statistically significant relation with stock-price. The study purpose is to examine the relationship between accounting information and stock price.

1. 5 Objective of the Study

The main target of the research is to explore the influence of the value relevance of accounting information on stock price. To fulfil the overall objective, the aim is to determine the variables of relevance and to explain the relationship between value relevance and stock price.

1. 6 Hypotheses of the Study

Kargin (2013) examined the value relevance of accounting information by analysing two specific periods: before and after the application of IFRS by Turkish firms. He determined the relation between market value and book value per share and earnings by using the valuation model of Ohlson (1995). He found that book value with per share earnings to have value relevance, so he determined that there is a relationship between market value and stock price. The result shows us that value relevance of accounting information after IFRS considering book values, while improvement has been observed in value relevance of earnings. Adaramola and Oyerinde (2014) investigated the value relevance of accounting information for 66 listed companies using a sample of the Nigerian Stock Exchange. In their study, using accounting rations, they found that accounting information had value

relevance, but it was lower during the periods of military dictatorship and the global economic crisis. Vijltha and Nimalathasan (2014) examined the value relevance of accounting information in the Colombo Stock Exchange. According to their results, there was a significant relationship between earnings, net asset value, and ROE, and stock-prices for firms listed on the exchange.

On the basis of the previous research detailed above, the present study suggests the following hypotheses.

H1: Accounting information has a significant impact on the stock prices of non-financial firms listed on the BIST?

H2: Book value per share has a significant impact on the stock prices of non-financial firms listed on the BIST

H3: Earning per share has a significant impact on the stock prices of non-financial firms listed on the BIST

H4: Dividend per share has a significant impact on the stock prices of non-financial firms listed on the BIST

H5: Leverage ratio has a significant impact on the stock prices of non-financial firms listed on the BIST

CHAPTER TWO

LITERATURE REVIEW

2.1. A Brief History of Financial Reporting in Turkey

The Ministry of Finance published accounting regulations in 1992 aimed at achieving high quality and comparable financial information in Turkey. This uniform accounting system implemented in Turkey was designed according to the Generally Accepted Accounting Principles (GAAP). Turkish entities except those in financial sector have used this uniform accounting system for keeping accounting records and preparing financial reports since 1994. Unfortunately, the Turkish economy has experienced a high inflation environment beginning in the late 1970's until 2004. The high inflation experienced for over 30 years has been raising concerns about the usefulness of financial statements issued in Turkey. To solve this problem, the capital market board of Turkey issued a regulation about inflation accounting and consolidation standards. The implementation of those standards, originally planned for 31 December 2001, was postponed until 2003; firms were required to restate and report their 2003 financial statements according to this regulation. Thereby, the first financial statements prepared by the inflation accounting report were published as of December 31, 2003. Before this date, Turkish companies reported their financial statements under the local accounting standards (GAAP) based on historical cost accounting and they tried to benefit from the incentives in the Turkish tax regulation in order to negate the effects of inflation. The mandatory application of inflation accounting for the financial

statements of listed companies was terminated in 2005 with the adoption of IFRS. Since 2005, the companies listed Istanbul Stock Exchange (ISE) have been required to prepare and present consolidated accounts under IFRS. The application of inflation adjustment and subsequently the implementation full IFRSs (in spite of inflation declining to single digits in 2004 as a result of tight fiscal policies and prudent monetary policies) seem to have reduced the concerns about the usefulness of accounting information being distorted due to the high inflation in Turkey. The implementation of IFRS, consistent with general perspectives around the world, is expected to improve the quality of financial reporting and ensure a better presentation of enterprise performance within Turkey.

2.1.2. Effect of the Financial Crisis on Turkey

Uygur (2010) explained that Turkey is quite familiar with financial crises and the recessions that follow, with the recent 2008-2009 crisis being the fifth in the last 30 years. Turkey experienced a foreign debt crisis in 1979, followed by a “stabilization and liberalization program’’ in January 1980. This program was based on a stand-by agreement with the International Monetary Fund (IMF) and countered the crisis with extensive liberalization in finance and trade.

Aras (2010) examined the effects of the global financial crisis that first erupted in the USA in the second half of 2007, which included a contraction in liquidity and credit channels, unfavourable developments in financing conditions as well as a significant drop in trade volume due to insufficient demand in 2008 when growth performance deteriorated, employment decreased, and expectations worsened all over the world. On the basis of the decisions made at the G-20 Summits in the last quarter of 2008, central banks declined interest rates and raised the level of the liquidity with the introduction of a new field in the financial system. Starting from the last quarter of 2008 in particular, global issues have been reflected in various was in Turkey. The most critical impact of the crisis on the Turkish economy has been the sharp decline in world trade in goods and services. Turkey is an open

economy, where foreign trade accounts for more than 50 percent of the gross domestic product, and exports in 2008 were nearly a quarter of the GDP, where more than half of Turkey's exports go to the EU. Among G-20 countries, Turkish banks are ranked first in terms of capital adequacy, asset profitability and equity. The Turkish banking system has a positive value regarding deposits, loans to GDP ratio, financial depth and the ratio of loans to deposits, which are considered the essential indicators in the banking sector.

2.1.3 Value Relevance, Definition

According to Shreyes and Gowda (2018), value relevance is considered to be one of the essential attributes of the quality of financial statements (Francis et al., 2004). Therefore, Hung (2001) defined value relevance as "the ability of accounting data to summarize information impounded in market prices.

Francis and Schipper (1999) defined the value relevance of accounting information as the ability of accounting numbers to summarize the information underlying the stock prices. Thus, value relevance is indicated by a statistical association between financial information and prices or returns.

However, based on Shreyes and Gowda (2018), the value relevance of accounting information is based on two assumptions, namely that accounting numbers act as inputs to share valuation and accounting information is already impounded in share prices upholding the efficient market hypothesis (EMH).

Miller and Modigliani (1966) and Ball and Brown (1968) were early authors who attempted to establish a link between accounting information and share price. Subsequently, numerous studies have been conducted on value relevance until Ohlson (1995) developed a model that related to the value relevance of earnings and book value.

According to Naimah (2012), financial statements that are published by an entity must actually disclose the condition of the entity, so that information is made publicly available that is useful for decision making and should have value relevance. One of the indicators that accounting information is relevant is that there is a reaction of investors at the time of the announcement of the information. The focus of this research is to examine the coefficients related to accounting earnings and equity book value information. This definition of value relevance relates to the importance of value relevance of accounting information in the framework of the preparation and presentation of financial statements (IASC, 1989). Information has relevance in the sense that it influences the economic decisions of users by helping them evaluate past, present and future events from the investor's perspective. Relevant information is information that contributes to their equity investment decisions. It must be noted that market value relevance as defined above is only one of the possible interpretations of the value relevance concept (Francis and Schipper, 1999).

Furthermore, Brief and Zarowin (1999) examined the Ohlson model and included dividend as a significant variable that has an effect on share prices; there are several reasons may be cited for our study. First, almost all studies on the value relevance of accounting information have focused on earnings and book value. Under the Ohlson model (1995) dividend is not considered to be value relevant with the exception of the study by Brief and Zarowing (1999), who showed that dividend was the most value relevant measure derived from financial statements. Second, the research on value relevance in India was found to be very limited according to studies by Vishnani and Shah (2008) and Manisha (2014). Hence, there is a need to study the value relevance of accounting information to achieve research validity and reliability in India by including a large number of sample units with long windows and by considering dividend as an additional variable in the Ohlson model.

Value relevance has been defined by Suadiye (2013) as the ability of accounting information that is presented by financial statements to provide sufficient information to users in order to enable them to capture and summarize firm value precisely. The relevance of financial statements can also be defined in terms of how useful they are to equity investors (Al-Hogail, 2004). Cormier and Magnan (2010) examined value relevance considering the association between a set of independent accounting variables and market value as the dependent variable (Beaver, 2002; Kousenidis et al., 2010); Devalle et al., 2010). The smaller the difference between accounting information and market valuation, the more relevant this information is thought to be and vice versa (Gjerde et al.,2005; Hillier et al., 2010). In other words, accounting information would be relevant to market value if it were to be significantly associated with any dependent variable.

The main focus of existing value relevance research appears to be the examination of the extent to which published financial statements provide valuable corporate information for investors (Negakis, 2005; Paananen and Parmar, 2008). It is argued by some researchers that value relevance research also provides useful insights into accounting matters, not only for investors, but also for standard setters and other users (Barth et al., 2001). Additionally, Barth et al. (2001) maintained that the primary objective of value relevance research is to supply information concerning the relevance and reliability of accounting numbers as reflected in equity values. Francis et al. (2004) counted value relevance as one of the main attributes of accounting information alongside accrual quality, conservatism, persistence, predictability, smoothness and timeliness.

The examination of value relevance of the combination of accounting earnings and book value of equity has been conducted by some researchers motivated by the results of the studies of Ohlson (1995) and Feltham and Ohlson (1995,1996). Ohlson's study (1995) is used as a theoretical base for the relationship between book value of equity and earnings and share price.

Accounting numbers are said to be value relevant if they have a predicted relationship with the market value of equity (Amir et al,1993) For researchers, the purpose of testing value relevance is to expand the knowledge of the relevance and the reliability of accounting numbers that are reflected in equity values. The value relevance is the empirical operationalization of the relevance and reliability criteria if the accounting numbers reflect information that is relevant to investors in valuing a firm and are reliably measured to be reflected in stock prices. With respect to accounting harmonization, the relevant literature can be divided into two categories: relative and incremental value-relevance research (Biddle et al., 1995; Lin and Chen, 2005). The former compares the value relevance of accounting information produced under different standards, whereas the latter investigates whether one set of accounting information provides additional value relevance beyond another. However, based on Liu et al. (2014), these results lead to the question as to whether or not replacing domestic GAAP with IAS constitutes an improvement in the information-usefulness of accounting reports produced.

Based on Ohlson's (1995) residual valuation model, which is widely used in the accounting literature: Hand (2001) treated external auditors' SOX 404 opinions on internal control as "other information". This paper investigates whether the effectiveness of a firm's internal control can directly affect the value relevance of accounting information in determining the firm's market value. Specifically, we select a sample of firms that have received at least one SOX 404 audit opinion on internal control for the period from 15 November 2004 to 31 March 2009, and research following question: Do firms whose internal controls are not effective, as indicated by having received adverse SOX 404 audit opinions, exhibit lower market value relative to firms that have received unqualified SOX404 audit opinions?

Landsman and Maydew (2002) showed that value relevance has in fact been decreasing over time. Lev (1989) claimed that the changes are in different directions when different accounting items are used. The emerging market of China has been used as an experimental setting, where the majority of publicly listed firms are traditional manufacturing and merchandising firms and the role of

new-economy firms is more limited than in developed markets. The value relevance of earnings has two common interpretations in the literature; in most cross-section research, it only refers to the existence of a significant coefficient on the earnings variable in a regression of market value. Sami and Zhou (2004) examined value relevance and the found the different interpretation of value relevance of earnings is more closely related to research using time series modelling, whereby value relevance is related to the ability of earnings to explain and predict the behavior of market value and returns (Qi et al., 2000). In this paper, we adopt both approaches, bringing them together to address the issue of earnings value relevance. However, the Ohlson model has been challenged based on its linearity assumption (Davidson et al., 2012). the reliability of forecasted proper accounting fundamentals to explain market value (Penman and Reggiani, 2013) and the reliability of forecasted discount rates. In general, the nature of the research question about temporal change suggests that the dynamics of the data as well as the cross-sectional properties should be analysed (Callen and Morel, 2001).

In a study by Willett (2013), it was found that the distributional properties of earnings and book value for Compstat firms are strongly lognormal whether the data are cross-sectional, time series or pooled. Therefore, using this as a starting point, Falta and Willett (2013) proposed a multiplicative theory of the market–accounting relation based on the exponential growth characteristics observed in the fundamental accounting variables, which aligns well with their observed distributional properties.

Collins et al., (1997) investigated systematic changes in the value relevance of earnings and book values over time. Based on a sample of 119,389 firm-year observations for the period 1953 until 1993, they reported that the combined value-relevance of earnings and book values has not declined over the past 40 years and appears to have increased slightly.

Fillip and Raffournier (2010) studied the value relevance of earnings in the Bucharest Stock Exchange. They found that the association between accounting earnings and stock returns is comparable to the levels reported by studies on mature markets and that it is higher for securities issued by small companies.

Chandrapala (2013) examined the effect of ownership concentration and firm size on the value relevance of earnings and book value for firms listed on the Colombo Stock Exchange in Sri Lanka from 2005 to 2009. Based on pooled cross-sectional data regressions, the reported results showed that the value relevance of ownership concentrated firms is higher than that of ownership non-concentrated firms.

Based on Shamki and Rahman (2013), the measures of earnings have been traditionally emphasized by financial reporting practices. Financial economists have acknowledged the relationship between future cash flows and firm value, and the interest in cash flows measures have recently increased. The research has been extended to add more information. In his study, Shamki (2013)extended previous studies by adding cash flows from operations as a new variable with earnings and book value to examine the influence of non-accounting information on the value relevance of the accounting variables in Jordan.

Collins et al. (1997) estimated yearly cross-sectional regressions of stock price on earnings and book values to determine the combined value relevance, as well as stock price on book values alone to determine incremental earnings, and stock price on earnings alone to determine incremental book values. Their findings firstly indicated that the combined value relevance of earnings and book values has increased slightly; second, the explanatory power of book values and earnings has expanded.

Black et al. (2000) provided evidence on how accounting information, earnings and book values are used differently in equity pricing in three countries, namely Germany, Japan and the U.S. They hypothesized that the value relevance of the combined book values and earnings model, and of the earnings model on a stand-

alone basis, would be greater in the U.S. than in Germany and Japan (because of tax conformity, conservatism, relationship banking, etc.). However, for the book values model, the opposite would hold and the results of the earnings alone model supported the prediction. However, the combined book values and earnings model were found to have greater value relevance for Germany than for the U.S.

Ali and Hwang (1999) used data from manufacturing firms from 16 countries over the period 1986-1995 to test the relationship between country-specific factors and the combined value relevance of book value and earnings, among others. They found that for countries with bank-oriented financial systems, public standard setters adopt continental model classification, tax rules significantly influence financial accounting measurements, there is low spending on audit services, and the value relevance of accounting information is lower; Japan belongs to this category.

Easton and Harris's work (1991), commonly known as the return-earnings model, takes earnings level and book value of equity as relevant explanatory variables for returns in contrast. The Ohlson model (1995) suggested that the value relevance of accounting numbers can be measured with the relationship between its accounting data, such as book value per share and earnings, and share prices. This model is currently referred to as the price-earnings model (Alali and Foote, 2009). In addition, Collins et al. (1997) suggested that both book value and earnings can act individually as significant independent variables in explaining stock prices; in other words, book value and earnings are likely to be value relevant in determining stock prices or returns. Suadiye (2013) confirmed that the stock price models measure value relevance according to some statistical relation between financial statements information and stock price or return values. However, there are many studies that have claimed that factors impact on the equation, such as country-specific accounting systems (Graham et al., 2000; Ballas and Hevas, 2005; Chalmers et al., 2011) and industry-specific factors (Ballas and Hevas, 2005; Alfaraih, 2009).

A number of studies have tested these valuation models; for example, Vazquez et al. (2007) in Mexico; and Dahmash and Qabajeh (2012) in Jordan have both tested the Ohlson model (1995). In the Jordanian research, Dahmash and Qabajeh (2012) concluded that the model appeared to be “highly value relevant in capturing share prices for Jordanian industrial, and commercial public companies”. Pirie and Smith (2005) emphasised that both earnings and book value of equity variables can usually explain a substantial part of the variation in share prices and returns. Therefore, the research findings presented here strongly indicate that book value and earnings may well have the ability to measure the value relevance of financial statements.

According to Healy and Palepu (2001), there are four specific areas of accounting standards that are researched to indicate the value relevance of accounting information in the literature. First, the evaluation of the costs and benefits of alternative reporting methods is more likely to provide useful evidence. Second, research on accounting standards can examine optimal standards across countries. Third, assessing the types of standards that are likely to be most useful for market participants. Finally, providing timely information to investors or merely confirming information that is already available to them through other sources.

Kwon (2009) investigated the relative value relevance of the book value of equity, accounting earnings, and net cash flows in Korean stock markets by using the valuation model of Ohlson (1995), and Feltham and Ohlson (1995). He reported that the book value of equity is the most value relevant factor, while cash flows have more value relevance than net income. The results show that the combined value relevance of the book value of equity and net cash flows is more value relevant than that of the book value of equity and net income, thus suggesting that net cash flows can be a substitute for net income in terms of firm value. Furthermore, he provided evidence for deteriorating value relevance of net income and increasing the value relevance of net cash flows in firm value.

Vijitha and Nimalathasan (2014) investigated the value relevance of financial and non-financial information in high-tech industries in Australia with a sample size of 91 companies representing various sectors of the Australian economy. The results showed that value relevance declined in earnings but increased in book value. Evidence from the study also indicated that book value is the most significant factor and earnings are the least significant factor in deciding share prices in high-tech industries in Australia.

Kimouche and Rouabhi (2016) explained that for many decades, French companies have been considered among the pioneers in the creation and manipulation of intangibles. Hence, the French economy has become an indispensable source of competitiveness and wealth generation according to the World Bank (2006), France has been considered among the top ten countries regarding the contribution of intangibles in wealth.

Siyanbola et al. (2015) examined and discussed earnings and book value as the most common explanatory variables in recent value relevant research of late. This may not be unconnected with the frequent usage of the Ohlson model, which uses both of them as the primary independent variables. Although numerous studies have mainly been conducted to ascertain its impact on the value of the firm, the outcomes have not been clear. Some studies have found it to be a significant explanatory variable, while others have found it to be relevant, but not as compelling as dividend and the book value of equity. Some opine that the best strategy is to disaggregate it into sub-components. Some studies equally suggest the inclusion of other variables to improve the value relevance of earnings. In an attempt to gauge the impact of market liberalization on the value relevance of accounting earnings, Song, Douthett & Jung (2003) performed comparative analysis of the coefficients of accounting variables before and after the stock market liberalization for Korean listed firms. The results indicated that the explanatory power of accounting numbers improved significantly after market liberalization, suggesting that market liberalization could improve the value relevance of earnings.

Banker et al. (2009) determined that valuing a firm is not the same as evaluating the manager's contribution to the value of the firm, which is intuitively appealing but provides limited guidance to empirical researchers on the similarities and differences in the way value relevance measures and pay-sensitivities are influenced by the underlying agency and performance measure characteristics. Since both the pay-sensitivities and value relevance measures are endogenously determined and are functions of the characteristics that differ across the agencies in the cross-section, it is essential to understand the impact of the variation of the various characteristics on the association between these endogenous variables in the cross-section.

Gee-Jung (2018) compared the value relevance of accounting information among Asian countries: They focused on information for Korean, Chinese, and Japanese companies and investigated the differences among them. The results of the empirical analysis are as follows: first, the coefficient of accounting earnings was the highest in the samples of all firms in Korea, Japan, and China, followed by the coefficients for operating income, net cash flow, book value, and net operating cash flows. Next, Japan had the largest book value, followed by Korea, but China had a negative value. Japan had the largest coefficient of accounting earnings and net operating cash flow, followed by Korea and China. Japan had the largest coefficient of net cash flow and operating income, followed by China and Korea. The results show that the value relevance of accounting earnings is the largest among independent variables related to firm value, but the net operating cash flow is all independent variables when compared by country.

A significant element of the literature regarding value relevance investigates the possible increase or decrease in the value relevance of financial statement information over given time periods. Researchers frequently use the statistical association coefficient (R2) as a tool to analysis the relationship between accounting data and share prices or return. Consequently, the adjusted R2 is regressed to whatever time period is considered by a study in order to account for changes in the underlying economic variables over that period (Collins et al., 1997;

Brown et al., 1999; Francis and Schipper, 1999; Gjerde et al., 2005; Alfaraih, 2009). As a result of such analytical tools and variables, different results have been claimed by different researchers.

Collins et al. (1997) examined changes in the value relevance of book value, earnings and combined earnings for U.S. firms over a 41-year period from 1953 to1993. Their study revealed three main findings. First, the value relevance of the combination of book value and earnings seems to increase slightly over time rather than decrease. Second, the value relevance of book value appears to increase over the study period but, at the same time, the value relevance of earnings declines. Third, there is a shift in value relevance from earnings to book value; this possibly resulted from an increase in the incidence and significance of one-time items, an increased frequency of negative earnings, and changes in intangible intensity levels and average firm size over the study period. As a result, Collins et al. (1997) claimed that there was an increase in the value relevance of financial reporting information over the research period.

Brown et al. (1999) also conducted a long-term study in the US, and explored whether the value relevance of both book value and earnings changed over the period from 1958 to 1996 in the US. The results of their research concluded that the value relevance of accounting data declined over the considered period Lev and Zarowin (1999) also studied the US and highlighted that the usefulness of reported earnings, cash flows, and book value has deteriorated over the period from 1976 to 1996.

In a more recent study, Alfaraih (2009) similarly identified a decrease in the relevance of financial information in Kuwait over the period 1995-2006. The main argument for this observed decline was that investors had increasingly relied upon non-financial data, instead of solely financial information. This is consistent with a well-known argument in finance, which suggests that investors are not all rational in the market (Hillier et al., 2010; Damodaran, 2001). Rationality can broadly BE summarized when investors depend only on financial information (Fama, 1998). In other words, the findings from Brown et al. (1999), Lev and Zarowin (1999) and

Alfaraih (2009) all suggest that the reliance of investors on financial information when making economic decisions has decreased over time (i.e. irrationality has increased). Therefore, it could be further surmised that the association between accounting information and market valuation has similarly decreased.

In parallel with Brown et al. (1999), Lev and Zarowin, (1999), and Alfaraih (2009), Francis and Schipper (1999) also reported a decline in the value relevance of book value. Their study investigated the potential change in the value relevance of financial statements of firms listed on the NASDAQ over the period 1952-1994. The main concern of their research was whether investments based on financial statement information earn progressively less over time. The consequences of their tests illustrated a lessening in the relevance of earnings information, and an increase in the relevance of book value information over the sampled period. These results are consistent with the results of Collins et al. (1997), Chang (1999), Ely and Waymire (1999) when questioning whether the value relevance changes might vary between low- and high-technology firms.

Chang (1999) examined modifications in the value relevance of book value and earnings for the U.S. companies from 1953-1996. He also studied the factors associated with those changes. In considering the residual income valuation method, Chang (1999) investigated three measures of value relevance: portfolio return measures, variation measures and valuation lag measures. Chang found that based on his examination of portfolio return measures, the value relevance of both book value and earnings decreased over time; nevertheless, he also found that the returns from earnings-based portfolios had remained stable over the period. The results of variation measures confirmed that the value relevance of book value and earnings had likewise decreased over the period studied. His research also illustrated a nonlinear change in the valuation lag measure over time. Additionally, Chang's paper (1999) discussed the factors associated with changes in the value relevance of both book value and earnings. The results demonstrated that intangible asset intensity, growth difference and nonrecurring items are all inversely associated with the value relevance of book value and earnings.

However, in a more recent study, Gjerde et al. (2005) argued that the value relevance of financial reporting information for investors has increased significantly. Their work covered the period between 1964-2003 focusing on the Oslo Stock Exchange. They argued that the main factors leading to these increases are the efforts of Norwegian accounting regulators and standard setters aimed at achieving more value relevant financial information over the time period. This finding suggests that a positive change in Norway's accounting regulations could potentially have increased the value relevance of accounting information.

Similar to Gjerde et al. (2005), Brimble and Hodgson (2007) also identified an improvement in the value relevance of accounting earnings. Their research investigated changes in the value relevance of accounting earnings for valuations in Australia between 1973 and 2001 using nonlinear regressions and adjusting for likely stock market inefficiencies. In another European study, Bartov et al. (2005) similarly found that the value relevance of accounting data had enhanced regarding German firms over the period 1990-2000.

2.2. Value Relevance and IFRS Adoption

Kargin (2013) investigated the value relevance of accounting information for listed companies in Turkey both pre- and post-IFRS adoption for the period between 1998 and 2011, and reported that accounting information was value relevant in the post-IFRS adoption era. The study concluded that the increase in value relevance level was positively influenced by a common legal system, a high level of external economic openness, strong investor protection, the full protection of minority shareholders and by advanced capital markets based on the Ohlson (1995) model and the modification of the model that includes cash flow from operations and dividends to ascertain the value relevance of accounting information. They found that earnings, cash flow and dividends were statistically significantly associated with firm value, but book value was related but not statistically significant. Based on these findings, it is suggested that the focus of investors should be on earnings, dividends and cash flows, while less emphasis should be placed on book value.

Latridis (2010) focused on the adoption of IFRS in the UK and concentrated on the switch from the UK GAAP to IFRS in order to conclude whether this adoption led to higher quality accounting numbers. By examining company accounting measures reported under the UK GAAP and IFRS, the findings showed that the implementation of IFRS reduced the scope for earnings management. This is related to more timely loss recognition and led to more value relevant accounting measures. In another study, data from six countries were used to examine the impact of IFRS adoption on the value relevance of reported accounting information of 325 listed companies from the UK, Australia, Hong Kong, Singapore, South Africa and Malaysia. The results indicated that within the year of adoption, there was no difference in the value relevance of book value of equity and net income between IFRS and national GAAP in all six countries. This result was supported by the study of Muharani and Sinegar (2014), which indicated that the overall accounting information reported during the period towards full convergence of IFRS was value relevant for listed companies in the three countries, but no incremental value relevance was observed during the period of the study.

El Shamy and Kaled (2005) examined the value relevance of earnings and book values derived under the Kuwaiti accounting system declaring compliance with IFRS. By using the relation model between stock price, earnings and book values, they showed that earnings and book values are jointly and individually positively and significantly related to stock prices. Earnings add more to the overall explanatory power of the valuation model than book values for financial institutions, whereas book values show superiority only for the industrial sector.

Tsalavoutas et al. (2012) focused on the case of Greece to examine the effect of the transition to IFRS on the combined value relevance of equity and net income, and investigated the impact of the early adoption of IFRS. Barth et al. (2008) and Daske and Gebhardt (2006) both found a significant improvement in the financial reporting quality of those firms that switched from local GAAP to IFRS. Notably, Barth et al. (2008) found increased value relevance of earnings under IFRS, while Daske and Gebhardt (2006) observed that users perceived IFRS financial

statements to be of significantly higher quality than those prepared under local GAAP. Although these early studies provided evidence for increased financial reporting quality, it was only after the 2005 mandatory adoption of IFRS by the European Union (EU) and Australia that the impact of reporting under IFRS could be further examined by using more opulent datasets. The IFRS is a set of financial statement standards issued by the IASB. The primary objective of the accounting standards is to develop "a high-quality set of standards that increases transparency and harmonizes accounting practices across jurisdictions" Armstrong et al. (2009) cited in Horton and Serafeim, (2010)argued that having clear, consistent standards could then assist users of that information to make economic decisions more efficiently inside the world's capital markets (Epstein and Mirza, 2002). In other words, the relevance, reliability and comparability of financial information are likely to be the main objectives of the IASB.

According to Epstein and Jermakowicz (2008) the IASB is the independent, accounting standard-setting body of the IFRS foundation, and is responsible for developing and promoting the use and application of these standards. The point at which the IFRS was adopted, 1st January 2005, is widely considered as an event that brought significant change to accounting systems across many countries. Accordingly, extensive developments have been made in the literature, which has sought to explore the varying impact of the IFRS implementation. In particular, its effects on the value relevance of accounting information have been studied broadly. Some studies have claimed that the adoption of the IFRS has had insignificant (or even negative) impacts on the value relevance of accounting data (Hung and Subramanyam, 2007; Aubert and Grudnitski, 2011; Chalmers et al., 2011) whereas others, arguably the majority, have concluded that the financial information produced under the IFRS is more value relevant (Jermakowicz et al., 2007; Kousenidis et al., 2010; Aharony et al., 2010; Chua et al., 2012; Elias, 2012). The empirical literature on value relevance and IFRS adoption can be partitioned into two main groups: studies that offer an international comparison, and those that focus on value relevance within a country.

2.3. Value Relevance Research in Another Country

Nobes (1983) classified Japanese accounting practices as belonging to the macro-uniform category and further classified them under the government sub-class in the law-based family, compared to a microeconomic group where accounting attempts to reflect economic reality and consequently is flexible (USA, UK). Accounting in the macroeconomic group has developed as an instrument of national economic policies, characterized by high conformity between tax and financial accounting.

Habib (2002) found that tax law has a substantial influence on Japanese accounting. Many expense allowances, calculated from experience rates in the U.S., must be recorded in Japanese financial statements at percentages provided by tax authorities. A vital characteristic of the Japanese style of corporate governance is cross-corporate, interlocking ownership through investment in the equity of other firms. Over the period 1976-1999, financial institutions and other corporations held, on average, 63% of outstanding shares of Japanese firms, while the comparable figure for individuals was only 29%.

According to Hu et al. (2013), President Bush signed SOX into law on 30 July 2002. The SEC issued SOX 302 and SOX 404 on 29 August 2002 and 27 May 2003, respectively. The SOX 302 addresses corporate responsibility for financial reports, which requires managers (1) to certify that the financial report contains no misrepresentations and that the financial information is fairly presented, and (2) to disclose material weaknesses and material changes in internal control to the public. SOX 302 does not require attestation by an independent external auditor. The Chinese situation is different from that in the West, which creates a unique opportunity for the application of the value relevance framework. Given the increasingly important effect of intangible assets on a firm’s value in a modern economy (Lev and Zarowin, 1999) and the increasing difficulty in valuing firms (Jenkins, 1994), especially young firms, it would also be interesting to investigate these issues in the emerging market of China. Although it may be argued that the development of accounting in the West has stagnated in recent decades, this is

not the case in China, which has constructed an entire market-oriented accounting system from the ground up since the early 1990s, when a modern accounting framework was virtually non-existent. There are reasons to believe that the value relevance of Chinese firms' financial statements has improved over time.

Xiao (1999) found evidence of a high level of compliance with accounting regulations in China. Bao and Chow (1999) and Sami and Zhou (2004) investigated the value relevance of accounting information based on domestic Chinese GAAP and international accounting standards. Although the international accounting standards had better value relevance, they found that the explanatory power of the earnings and book values for share prices increased over the period of study for both sets of financial information. This style of corporate governance allows value-relevant (inside) information about a firm's prospects and business strategies to be shared exclusively within the cross-owned network through direct communications between managers and cross-corporate shareholders (Jiang and Kim, 2000). Barth et al. (2018) investigated the annual relationship between equity price and accounting amounts from 1962-2014, and measured value relevance as the explanatory power of the estimated relation. Prior research has largely estimated a linear relation, and has not precisely identified how each accounting amount maps into future cash flows and therefore into equity value. Bhattacharya, (2010) explained that accounting information has been shown to be valuable in many settings. Extant research contends that earnings in particular is the premier source of financial information, with investors and managers using earnings more than any other summary measure of performance (e.g., Liu, Nissim and Thomas, 2002; and Graham et al., 2005).

According to Kevin et al. (2013), China implemented the accounting standards for Business Enterprises, which represented the first step in a series of accounting and regulatory reforms in the world's fastest growing economy. The reforms transformed the Chinese accounting system from a Soviet-style central-planning-oriented system to one that aimed to harmonize with international practices. In the period since 1992, improvements in accounting standards have necessitated the

parallel development of auditing standards that are, in various ways, modelled after the standards promulgated by the International Federation of Accountants. There are reasons to believe that the value relevance of Chinese firms' financial statements has improved over time. Xiao (1999) found evidence of a high level of compliance with accounting regulations in China. Sami and Zhou (2008) investigated the value relevance of accounting information based on domestic Chinese GAAP and that based on international accounting standards accounting reforms in China underwent three stages. (Chen et al., 2002). The first stage was from 1992-1997, during which all listed A-share firms were required to follow the experimental accounting system for joint stock limited enterprises and the accounting standard for business enterprises issued in 1992 by the Ministry of Finance (MOF), as well as the accounting regulations issued by the Chinese Securities Regulatory Commission (CSRC). The second stage was from 1998-2000, which was characterized by the adoption of the accounting system for joint stock limited enterprises in 1998. During this period, firms were required to follow the Chinese Accounting Standards (CAS) issued by the MOF and the accounting law issued by the state council in 1995. Financial statements were also more commonly audited by independent auditors during this stage in the US. Considerable empirical evidence supports the belief that accounting information is associated with firm value (Beaver, 1998). The relative relevance of accounting standards and security regulation in Thailand, however, raises the question regarding the extent to which Thai security pricing reflects Thai accounting information. Value relevance can be evaluated from two major perspectives; it is measured either from a signalling perspective or from a measurement perspective. The signalling perspective refers to studying whether there is a reaction to the announcement of accounting information.

Amir et al. (1993) used this methodology to study the value relevance of US generally accepted accounting principles (GAAP) with non-US GAAP. The measurement perspective measures the explicit relationship between market indicators of the value of the company and accounting measures.

Katerina (2006) stated that t large comparative studies quantify institutional factors, while studies investigating individual countries describe the institutional background in a qualitative manner, which is also the case of the present study. The following five factors that influence the degree of and changes in value relevance are identified as: development of accounting regulation, control mechanisms, business climate change, internationalization and business cycle, economic development and industry structure.

Francis et al. (2004) specified seven different market- and accounting-based attributes of accounting quality and found that even if it is not the only one, value relevance is one of the most important attributes of accounting quality. They also argued that value relevance seems to be a more important attribute of accounting quality than conservatism or timeliness.

Barth et al, (2006) used a sample of 428 firms in different regions and examined the effect of accounting quality for companies applying IAS from 1990 to 2004. The results indicated that the accounting quality (value relevance) of IFRS is lower than US GAAP but higher than other domestic GAAPs.

Hung and Subramanyam (2007), corroborated by the study of Paglietti (2009), compared the financial statements prepared under the German Accounting rules (HGB) with those of International Accounting Standards (IAS) during the period 1998-2002 by regressing stock prices on book values of equity and net income. They found that the book values of equity have higher coefficients under IFRS and net incomes have higher coefficients under the German GAAP. They concluded that the total assets and book value of equity as well as variability of book value and net income are significantly higher under IAS than under HGB. It is a common practice in value relevance literature to define earnings as earnings before extraordinary items per share (Barth et al., 2001); however, reported earnings are commonly used as the basis of valuation instead of considering earnings before extraordinary gains and losses (Ou and Sepe, 2002). Thus, the value relevance of earnings was demonstrated to be characterized by mixed results with the value relevance of earnings indicating declining value relevance over time.

In recent years, value relevance research has emphasized the study of book value. Subramanyam et al. (2007) attributed two reasons for this change: first, under the clean surplus-based valuation framework developed by Ohlson (1995), book value provides an anchor role in valuation by representing the net share of resources that generate future 'normal' earnings (Easton et al., 1992). Second, book value is hypothesized to provide information about the liquidation value (Barth et al., 2001). several empirical pieces of evidence found very high-value relevance of book value; therefore, value relevance researchers look to book value as having high information content.

Miller and Modigliani's (1961) dividend irrelevance theory set a tone for research on the relationship between dividend and share prices. Several studies have established a relationship between dividend and the persistence of earnings changes (Guay and Harford, 2000). However, they provided no support for the dividend irrelevance theory and it was concluded that dividend policies did affect the firm value and the firms that paid larger dividend faced less risk regarding share price volatility since then. Several studies have found a positive relationship between dividend and share prices (Brief and Zarowin, 1999) According to Kumar et al. (2010), the dividend represents the portion of the profit after tax that is distributed to the shareholders for their investment and risk bearing in a company. The amount of dividend paid to the shareholders depends on the dividend policy adopted by the firm. A stable dividend policy helps in resolving uncertainty from the perspective of investors and also plays an essential role in creating a healthy investment climate.

Shamki and Rahman (2013) explained that when a company is financed with debt, it will be considered as a highly leveraged one if the debt to asset ratio has increased. This will imply more operation risk for the company. This variable has been measured as debt to total asset ratio for the current study because this ratio is positively and significantly associated with disclosed information.

Alali and Foote (2009) showed that accounting information is more value relevant for small firms than large firms because of more competing information sources about larger firms in the market. Additionally, they explained the differences between the UAE and Egyptian markets and showed that these differences are driven by the size of firms and involvement in foreign operations. It is theoretically expected that the impact of IFRS on the relevance of financial reporting would be highly significant for those countries where local standards are considerably different from international standards (European continental countries), and vice versa concerning places more closely aligned to international accounting standards (Paananen and Parmar, 2008); Gaston et al., 2010); Tsalavoutas and Evans, 2010; Punda, 2011). The primary principle behind this is that common law countries have better accounting systems and better protection of investors than code law countries (La Porta et al., 2006; Bhattacharjee, 2009). Using this notion, the empirical impact should be lower in the UK, as it can be classified as an Anglo-Saxon country (Gaston et al., 2010).

Morais and Curto (2009) conducted a study assessing whether the value relevance of European-listed companies increased after the mandatory application of IFRS. Their study investigated the relation between book value and net income with the market price of shares in 14 European countries, including the UK, for the period from 2000 to 2005. The results of the investigation demonstrated that the value relevance of financial information is higher for the post-IFRS period, and they also claimed that countries where accounting and tax are clearly separated show more relevant accounting information.

Devalle et al. (2010) used a sample of 3,721 companies listed on five European stock exchanges, including the London Stock Exchange. Their evidence presented a mixed picture of increases in the value relevance of both book value of equity and earnings in the UK. Despite this, the relation between book value and share price decreased following the introduction of IFRS in Germany, France, Italy and Spain. However, Aubert and Grudnitski (2011) investigated the same issue, covering a relatively wider sample of countries (13 European countries), including

the UK. It is interesting to note that they identified remarkably different results to what was expected by Devalle et al. (2010), particularly in regard to the UK. The results of Aubert and Grudnitski's study suggest that there is no statistical evidence for any of the samples confirming that financial reporting presented under IFRS regulation was any more value relevant than the financial reporting produced using previous domestic accounting practices. In other words, these findings suggest that the value relevance of accounting data is unlikely to change because of the adoption of IFRS, even in the UK. Nevertheless, it is important to weigh this evidence alongside opposite results that have been put forward by several studies involving the UK in comparisons (Manganaris et al., 2011); Iatridis, 2010); Gaston et al., 2010).

Kontopoulos et al. (2010) used a regression model to examine the value relevance of accounting information for a significant sample of 200 companies (50 each in France, Germany, the Netherlands and the UK) from 2003-2006. They followed the Ohlson model (1995) by testing the relation between accounting variables and share prices. additionally, their research concentrated upon the country-specific accounting system (investor vs. creditor-oriented systems). Their results indicated that there was an overall increase in the value relevance of accounting information; however, the size of the changes varied from country to country due to the differences within their accounting systems. Kontopoulos et al. (2010) claimed that financial statements of creditor-oriented countries (France and Germany) seem to be more relevant than investor-oriented countries (the Netherlands and the UK), because of the transition to IFRS. This is consistent with the theoretical expectations of Paananen and Parmar (2008), Gaston et al. (2010), from Kontopoulos et al. (2010) results. It can equally be observed that the impact of IFRS adoption on value relevance might realistically be empirically different from one country to another, due to the operation of different accounting systems.

Aharony et al. (2010) investigated the impact of IFRS adoption on the value relevance of accounting information in 14 European countries for the period 2003-2006, including the UK, by comparing the return and price-based value relevance

models in addition to the book value of equity and earnings variables. This study included three other accounting information items to their investigation of supplementary variables, namely goodwill, research and development expenses, and asset revaluation. Their starting hypothesis was that measurements under IFRS were likely to differ substantially from measurements under domestic accounting practices. Data from the 2010 study indicates that the implementation of IFRS has enhanced the value relevance of the three accounting numbers in the EU for investors in equity securities. In other words, Aharony et al. (2010) suggested that a tangible positive impact from the IFRS adoption on value relevance can be clearly seen within Europe, regardless of the influence of other factors such as any country-specific accounting systems (Kontopoulos et al., 2010; Gaston et al., 2010; & Chalmers et al., 2011) and enforcement (Daske et al., 2008).

A comparison study performed by Clarkson et al. (2011), examined the impact of IFRS adoption on the relevance of book value and earnings in 15 countries and categorized the countries into two main groups on the base of code-law and common-law countries. They used a non-linear pricing model for the period 2004-2005. Their results suggested that there is no observable change in value relevance for firms in either code law or common law countries, whereas the results are more contrary (both increases and decreases are observed) in relation to linear pricing models.

Gaston et al. (2010) studied the effect of IFRS adoption on the relevance of financial reporting of firms listed on the Madrid Stock Exchange General Index (IGBM) and the Financial Times Stock Exchange Index 100 (FTSE 100) The results of their study indicated that despite the fact that the effect of IFRS on financial reporting relevance was significant only in Spain, the IFRS regulations have nevertheless had a negative effect on the value relevance of financial reporting in both the UK and Spain. Thus, contrary to the findings of Aharony et al. (2010), Gaston et al. (2010) highlighted the absence of any enhancement in the value relevance of accounting information after the adoption of IFRS regarding both countries. Likewise, Hung and Subramanyam (2007) asserted that the book

value of equity has not become more relevant under IFRS in Germany. In addition, Callao et al. (2007) also found that there was no improvement in the relevance of financial reporting to local stock market operators in Spain (IBEX-35 companies), because the gap between book and market values widened when IFRS was applied.

In contrast, Manganaris et al. (2011) recently investigated the value relevance of accounting information based on the return model of Easton and Harris. Data from this study suggests that any impacts of IFRS implementation on the value relevance in the code-law European countries, such as Germany, France and Greece, are almost negative. This was also supported by Psaroulis (2011) regarding Greece; however, Kousenidis et al. (2010) claimed an increase in the value relevance of earnings for Greek companies after IFRS adoption.

2.3.1. With Country Value Relevance Research

Kargin (2013) investigated the value relevance of accounting information pre- and post-adoption of IFRS for Turkish listed firms from 1998-2011. He found and indicated that the value relevance of accounting information has improved in the post-IFRS period (2005-2011) considering book values while enhancements have not been observed in the value relevance of earnings. Therefore, IFRS has been developed by the International Accounting Standards Board, accepted by more than 100 countries around the world, and is required for different types of companies with the growth of economies and an increase in the number of publicly traded companies. The Capital Markets Board of Turkey (CMB) has required publicly traded companies to apply IFRS starting on January 1st, 2005. Before 2005, Turkish firms were using the Turkish uniform accounting system (Turkish GAAP) that was legislated in 1994.

Suadiye (2013) examined the value relevance of Turkish firms. He investigated whether the accounting data provided based on the IASB standards are higher value-relevant than these items provided based on the Turkish accounting standards. He regressed the market of price from shares (as of six months later that year-end), between book value and earnings for both (per share), during application to calculate the R squared for Turkish registered firms subsequent to the implementation of IFRS. He observed that the value-relevance from accounting information increased after the implementation of IFRS. The effect is compatible to prior literature that explains this selection from the IFRS enhances the value relevance.

Omokhoje (2015) examined the value relevance of accounting information, addressing the degree to which accounting information summarizes the information that is impounded in share prices. Therefore, the purpose of this paper was to contribute to the empirical literature on value relevance by examining the extent to which accounting information is related to firm value in the context of an emerging market. This study used the basic Ohlson (1995) model and a modified version of the model that included cash flow from operations and dividends to ascertain the value relevance of accounting information in Nigeria. The paper accommodated the documented relative inefficiency of the market by using stock price at three months and six months after year end as the dependent variable. he used a pooled and panel data in the regression of share price and returns on accounting numbers and ordinary least square (OLS) estimation and dynamic model estimation, where the Random and Fixed effects variants were used in the regression. He found that earnings, cash flow and dividends were statistically significantly related with firm value, but book value had no statistically significant relation. Based on these findings, it is suggested that the focus of investors should be on earnings, dividends and cash flows, while less emphasis should be placed on book values. Moreover, the accounting information for investment purposes should be communicated to the investing public, and such information should be of high quality to avoid sub-optimal investment decisions by investors, with negative consequences for the overall economy.

Jennifer (2001) examined the value relevance of accounting earnings, book value of equity, and cash flows from operations for Korean firms during the period 1995-1998. The results indicated that the value relevance of accounting earnings for Korean firms significantly declined from the pre-crisis (1995-1996) to the in-crisis (1997-1998) period. The declining importance of earnings, however, was not replaced by the increasing value relevance of book value of equity during the same period. There was also evidence that cash flows from operations became more value-relevant in the 1997-1998 period. Finally, the results held after controlling for the amount of foreign exchange translation gains and losses included in earnings and book value.

Graham et al. (2000) made a comparison between accounting standards in the US and those in Thailand, where accounting standards were only recently developed in June 1999. For example, the US had issued 137 FASB standards while the Thai Accounting Standards Committee (TASC) had issued 30 accounting standards by the end of 1997. Additionally, compared to the US, the Thai securities markets and the regulation of stock issuers developed even more recently; while trading has been conducted on the New York Stock Exchange since 1792, trading began on the Stock Exchange of Thailand (SET) in 1975. Security regulation in the US dates back to the passing of the Securities and Exchange acts of 1933 and 1934. The Thailand Securities Exchange Commission (TSEC), on the other hand, was established in 1992. Furthermore, they found that Thai book values and earnings have value relevance, but the relation between market prices and accounting numbers changed over the sample period; in particular, the value relevance of book values alone and of earnings alone each declined. This decline in the value relevance of earnings was particularly pronounced after the devaluation of the baht in July 1997. In addition, the incremental value relevance of book values (i.e., the value relevance of book value over and above that of earnings) increased after July 1997.

Kouser and Azeem (2011) examined the relationship between share price and both book value and earnings for non-financial public limited companies listed on the Karachi Stock Exchange in Pakistan over the period of 2002-2009. They used OLS regression for data analysis. The results of this study suggested that both relationships were likely to reveal stronger figures after the adoption of IFRS in 2005.

Chalmers et al. (2011) investigated changes in the value relevance of accounting information resulting from the adoption of IFRS for firms listed on the Australian Securities Exchange (ASX). They conducted a longitudinal study that covered pre-IFRS and post-IFRS periods during the period 1990–2008. Their study confirmed that IFRS adoption has had a significant impact on the relation between accounting information and share prices in particular. They found that earnings became more value relevant while the book value of equity remained almost the same. In addition, although their study considered company size factor, categorizing the sample firms into large and small, they claimed the same results regardless the size of the firms. The size of company does not seem to be a significant factor influencing the possible impact of IFRS adoption on the value relevance of financial reporting. Nevertheless, Collins et al. (1997), Gjerde et al. (2005) and Alfaraih (2009) all asserted the opposite, claimed that company size is a factor that impacts on the value relevance of accounting information.

Similar to Chalmers et al. (2011), Chua et al. (2012) examined the same issue in the same market, although the covered duration was remarkably different. Chua et al.'s (2012) study covered a period of 8 years from 2001-2008, whereas the duration of Chalmers et al. (2011)'s study was longer, including the 10 years from 1998-2008. The conclusions of Chua et al. (2012)'s paper suggested that the extent of the relationship between accounting data and share prices strengthened as a result of the mandatory adoption of IFRS in Australia. A similar result was suggested by Elias (2012) concerning Australia. Despite this closer relation, Chambers et al. (2011) claimed that the relevance of book value has neither increased nor decreased during the four post-IFRS years (2005-2008); this

difference might have occurred because of differences in the observation sample size. Chalmers et al.'s (2011) investigation included a relatively larger observation and it also covered a considerably longer period than had been considered by the studies of both Chua et al. (2012) and Elias (2012). Further research was carried out by Tsalavoutas et al. (2012), which examined the combined value relevance of book value and net income from 2001-2008, before and after the mandatory application of IFRS in Greece. Their findings indicated that value relevance was not affected by the IFRS implementation in Greece. Similarly, Tsalavoutas et al. (2009) found no significant change in the value relevance of book value and earnings regarding small and developed markets in Greece between 2004-2005. However, Psaroulis (2011) whose work was published in between these other studies, observed a lower value relevance of accounting numbers in Greece, resulting from the adoption of IFRS.

Balachandran and Mohanram (2006) also determined that the value relevance of accounting information declines for firms with the least conservative accounting and does not change significantly for firms with the most conservative accounting In addition, Manganaris et al. (2011) investigated whether any potential change in the value relevance of financial reporting after IFRS adoption might result from such a change in the level of conservatism. The assumption is stronger that conservatism corresponds to lower value relevance of earnings and vice versa. The results of their research provided evidence that after 2005, levels of conservatism decreased only in France and Germany. Contrary to expectations, the value relevance of earnings had decreased throughout Germany, France and Greece. In other words, their findings seem to be empirically different to what they theoretically expected to find in that there should have been an increase in the value relevance regarding France and German companies' accounting information due to the experimental decrease in the level of conservatism after the IFRS adoption.

The Table 2.1 Summary of Previous Empirical Studies

Authors & Year	Country	Period	Method	Findings
Shreyes and Gowda (2018)	India	2000-2012	Ohlson model, Panel data regression	There is a significant relation between the share of price and (earnings, dividend, and book value)
Alali and Foote (2009)	UAE	2000-2006	Models developed by Easton and Harris (1991), and Ohlson, Panel data regression	Earnings climbed with the beginning from period price mean positively and important(significantly) compared on collective returns and that earnings and book value (per share) are absolutely (positively) and significantly linked on the price (per share).
Vijitha and Nimalathasan (2014)	Colombo	2008-2012	Ohlson model, Panel data regression	The relevance of accounting information becomes an important(significant) influence on the price of shares and the relevance of accounting information has a significant association with the price of shares.
Purswani and Anuradha (2017)	Bombay	2011-2015	Ohlson model, Panel data regression	EPS and BVP were found to have a positive and significant influence on the market price per share. book-value was discovered to have a negative and unimportant (insignificant) influence on the share price.

Clacher et al. (2013)	Australia	2000-2010	Ohlson model, Panel data regression	There was an important (significant) increase in the relevance from direct cash flows after IFRS.
Burke and Wieland (2017)	NYSE and NASDAQ	2004-2014	Using a sample of banks, apply Ohlson model, Panel data regression	Cash flow from banks operations are predictive of future earnings and cash flows. Applying a modified Ohlson's (1995) valuation model, they documented that banks' cash flows from operations remain positively and importantly (significantly) linked with share prices.
Elbakry et al. (2017)	Germany and United Kingdom	2002-2007	vector error correction model (VECM), Ohlson model, Panel data regression	These critical controls of linear equity estimate models are found to be larger in the United Kingdom than within Germany. Also a long-run Granger-causal correlation exists between accounting variables and stock prices in general law nations like the United Kingdom.
Siyanbola et al. (2015)	Nigeria	2005-2012	Ohlson model, Panel data regression	Regression analysis did apply into that analysis and that result shows this in general (accounting-information) of the relevant.
Alfaraih, (2009)	Kuwait-KSE-listed firms	1995-2006	Ohlson model, Panel data regression	The results showed that book value and earning per share have value relevance in accounting information and declined compliance, after the adoption of IFRS.
Barth, (2018)	C14, G10, G18, M40, M41	1962-2014	Classification and Regression Trees (CART), and Ohlson model, panel data	He found that primarily earnings have lost relevance. We consider more accounting amounts and find no decline in combined value relevance, considering developing economies, non-developing economy profit, and non-developing economy loss firms. Although the relevance trends are most pronounced for developing economy firms, they are economy-wide.

Kargin, (2013)	Istanbul Stock exchange ISE	1998-2011	Ohlson model, Panel data regression	He founded that market value is related to book value and earnings per share by using the Ohlson model (1995). Overall book value is value relevant in determining market value or stock prices. The results show that The value relevance of accounting information has improved in the post-IFRS period (2005-2011) considering book Values, while improvements have not been observed in the value relevance of earnings.
Suadiye, (2012)	Istanbul Stock exchange ISE	2000-2002 2005-2009	Ohlson model, Panel data regression	Using the equity valuation model as suggested by Ohlson (1995), firstly, the value relevance of earnings and book values of equity produced under Turkish Local Standards (during 2000-2002) and under IFRS (during 2005-2009) were analysed. The analysis results showed that earnings and book value are, jointly and individually, positively and significantly related to stock price under the two different reporting regimes. Additionally, the results indicated that book value of equity is more value relevant than earnings.

CHAPTER THREE

Methodology

3.1. Variables

The variables used in the basic empirical model are the book value per share (BVP), earning per share (EPS), dividend per share (DIV), and leverage (LEV) as the independent variables, while stock price (P) is the dependent variable, based on the Ohlson Valuation Model.

P = Natural Logarithm of Stock Price

EPS = Earnings Per Share

BVP = Book Value Per Share

DIV = Dividend Per Share

LEV = Leverage Ratio

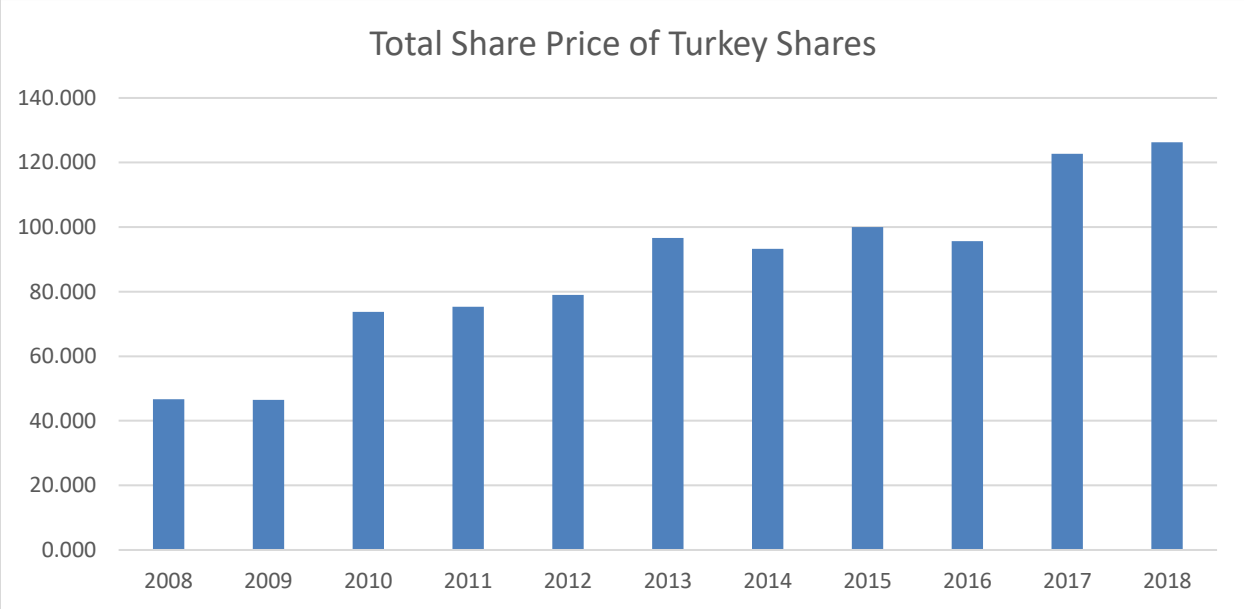


Figure 3.1: Total Share Price of Turkey Shares Firms over 2008- 2017
Source: prepared in Excel based on the data

Earnings Per Share

This is an important financial measure, which indicates the profitability of a company. It is calculated by dividing the company's net income with its total number of outstanding shares, and is a tool that market participants use frequently to gauge the profitability of a company before buying its shares.

EPS= Net profit / Outstanding Number of shares

Book Value Per Share

Book value is a company's assets minus its liabilities. In simple terms, it would be the amount of money that a shareholder would get if a company were to liquidate.

Book Value = Total Equity / outstanding number of shares

Dividend Per Share

Dividend is a payment made by a company to its shareholders usually as a distribution of profits. When a company makes profit, it can either re-invest it in the business or distribute it to its shareholders as dividends. The dividend payout ratio is the number of dividends paid to shareholders relative to the amount of total net profit of a company. A reduction in dividends paid is not appreciated by investors and usually the stock price moves down as this could point to difficult times ahead for the company; on the other hand, a stable dividend payout ratio indicates a solid dividend policy by the company's management

Div = total dividend /number of outstanding shares

Leverage

Leverage is measured by the ratio of total debt to total shareholders. This is harmonious with prior studies by Wallace et al., (1994), Al-Shammari et al., (2008), and Gallery et al., (2008). Furthermore, in line with prior research, the ratio of the

"book value of total debt to the market value of equity plus book value of total debt" is used as a supplementary test in the reliability test.

Debt-to-Equity Ratio = Total Debt/Total *Equity*

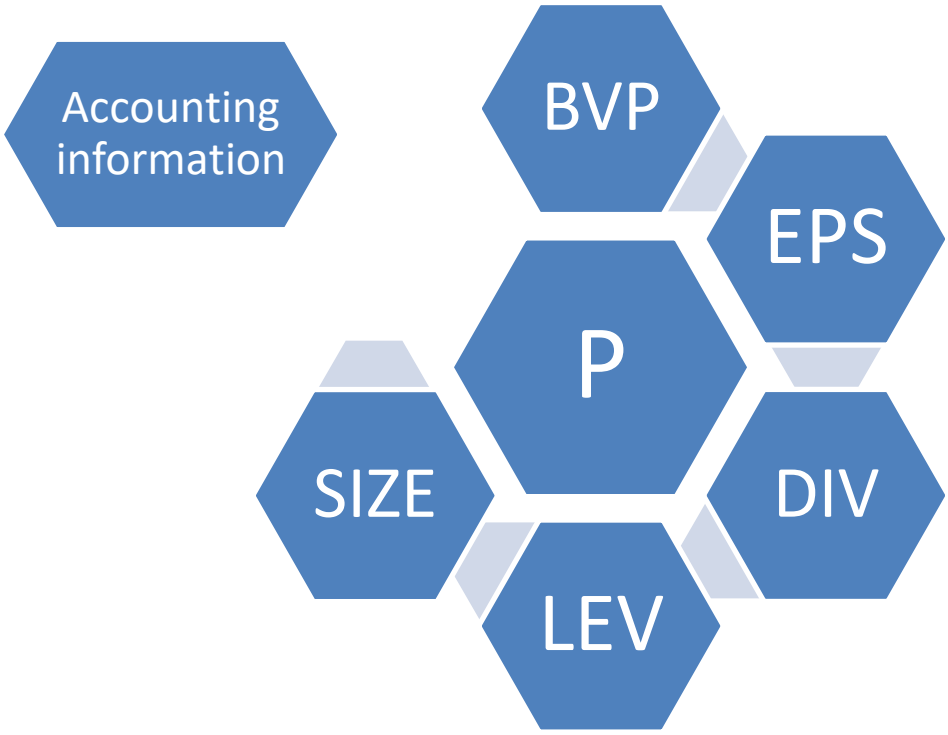


Figure 3.2: Conceptual Framework of the Study

3.2. The Stock Market Capital

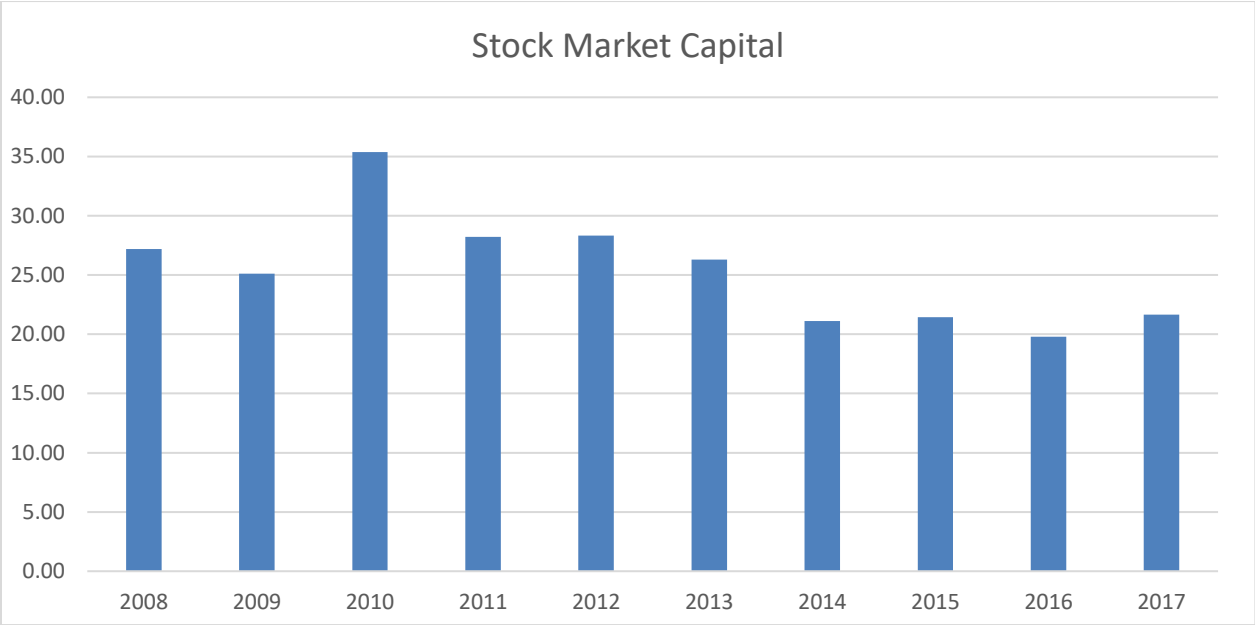


Figure 3.3: Stock Market Capital of Turkish Firms over 2008- 2017
Source: prepared in Excel based on the data

The stock market capital in Turkey and other countries is calculated as the number of shares traded on the stock exchange times their prices. It is measure of the size of the stock market in the country. It is usually reported as percent of GDP thus facilitating the evaluation of the size of the stock market relative to the size of the economy. Stock market capital of about 50 percent of GDP or more is an indication of a well-developed stock market; yet, in most countries where stock markets do not exist, the capital is close to zero. It should be considered that large stock market capital does not necessarily mean that the stock market is active; the stock market could be composed of several large companies whose shares are seldom traded.

3.2.1. Sample and Data

The survey covers a ten-year period from 2008 – 2017. Secondary data is collected from firms listed on the BIST from 2008 - 2017 from the DataStream database. Panel regression models are applied to investigate the proposed model where data was collected from Reuters.

3.2.2. Valuation Of The Model Value Relevance

The five hypotheses (H1–H5) discuss this relevance in accounting based on the book-value and earnings from the BIST non-financial firms' partners across the period 2008-2017. Studies regarding value relevance ordinarily examine the relation with stock price including returns, moreover a collection from accounting-data. This value relevance method considers every possible influence from accounting information upon assets estimated by Cormier and Magnan,(2010) furthermore, that relevant investigation points into giving practical data into stock price for help by business choice producing by Alfaraih, in (2009) accordingly, this relevant gives stock price by beneficial data, exploring whereby the firm-value able to be illustrated with either assigned progressively on accounting-data adoption of each that stock price design does argumentative inside study Barth, (2001) proved this the reply coefficients design is limited biased consequently, the investigation applies the Ohlson model of stock price in (1995) to examine the relevance of accounting data in the context of Turkey. The model examines the relationship between stock price, book value and earnings

The Ohlson model enables researchers to empirically investigate the value relevance of accounting book-value and earnings. The model is defined as follows:

$$P_{it} = P_{it}(-1)\,\beta_0 + \beta_1 BVP_{it} + \beta_2 EPS_{it} + \varepsilon_{it} \qquad (1)$$

Collins et.al. (1997) evaluated the explanatory power of book value and earnings on stock prices independently. This is expressed in the equations below.

$$P_{it} = P_{it}(-1)\ \beta_0 + \beta_1 BVP_{it} + \varepsilon_{it} \qquad (2)$$

$$P_{it} = P_{it}(-1)\beta_0 + \beta_2 EPS_{it} + \varepsilon_{it} \qquad (3)$$

Where:

P_{it}	= Stock Price Per Share for firm i at time t
$\beta_1 BVP_{it}$	= The Book Value Per Share of firm i at time t
$\beta_2 EPS_{it}$	= The Earnings Per Share of firm i at time t
ε_{it}	= Error term
T	= The years 2008-2017

The primary metric used to measure the value relevance of accounting numbers is the statistical relation between stock prices and both book value and earnings. This relationship can be measured by the explanatory power (R^2) of the regression model, the relationship would exist between stock prices and book value and earnings only if the accounting variables are value relevant to investors. Consequently, the coefficients of those variables will be statistically significant. Any observed relation can be used to study the value relevance from that period 2008-2017.

3.2.3. Factors Influencing Value Relevance

A number of research studies have claimed that several factors can influence the value relevance of book value and earnings, such as Ballas and Hevas, (2005), Hellstrom, (2006) and Alfaraih, (2009). These factors and their potential impacts are considered below.

The Effect of Dividend Per Share

Miller and Rock (1985) suggested dividends can act as indicators, and thus help predict future earnings in the presence of information asymmetry, thereby making dividends relevant to firm value. Consistent with this suggestion, Watts (1973) found a positive relationship between dividends and future earnings. In addition, financial statement analysis textbooks suggest that dividend discount and dividend growth models can be appropriate for estimating firm value (Palepu and Healy, 2008). However, Floyd, Li, and Skinner (2015) found a decrease from 1980-2012 in the propensity for firms, other than banks, to pay dividends, which leads us to expect dividends' relevance to decline. However, our expectations might not be borne out if firms' decreased propensity to pay dividends increases their relevance for firms that pay them. Capital expenditure reflects investments in tangible assets if tangible assets become more important for firm value. Capital expenditure could become more relevant, however, if the new economy's focus is only on intangible assets. Capital expenditure could become less relevant. COGS and SG&A can have implications for future earnings different from current earnings. Lev and Gu (2016) included liabilities, because liabilities are the difference between assets and equity book value; additionally, including assets effectively includes asset-based ratios, such as return-on-assets and sales-to-assets ratios, which prior researchers have found to be relevant (Ou and Penman, 1989). However, we have no expectations regarding relevance trends for capital expenditure, COGS, SG&A, or assets.

The Effect of Leverage Ratio

Fakhari (2018) examined value relevance. This study seeks to determine how the information environment is related with the value relevance of accounting information based on an innovative method. It combines various observable variables including firm size, institutional ownership, growth opportunities, age, bid-ask spread, number of shareholders, earnings forecast errors, stock turnover, Amihud share illiquidity and stock return, and converts them into a comprehensive

index to measure the information environment. Following Ohlson's (1995) model, earnings per share-to-market value ratio and book value per share-to-market value ratio are used as indices of income statement and balance sheet, respectively, to measure the value relevance of accounting information. The resultant 400 firm-year observations of the firms listed on the Tehran Stock Exchange during the years 2011-2015 using panel data revealed that the corporate information environment enhances the relevance of earnings value per share (value relevance of income statement) and the relevance of book value per share (value relevance of balance sheet).

3.2.4. Supplementary Models

Dividend and leverage are used as controlled variables to broaden the model, which is expressed below:

$$P_{it} = P_{it}(-1)\beta_0 + \beta_1 BVP_{it} + \beta_2 EPS_{it} + \beta_3 DIV_{it} + \beta_4 LEV_{it} + \varepsilon_{it} \quad (4)$$

Where

P_{it} = Stock Price Per Share for firm i at time t

$\beta_1 BVP_{it}$ = The Book Value Per Share of firm i at time t

$\beta_2 EPS_{it}$ = The Earnings Per Share of firm i at time t

$\beta_3 DIV_{it}$ = The Dividend Per Share of firm i at time t

$\beta_4 LEV_{it}$ = The Leverage of Total Debt to Total Asset of firms i at time t

ε_{it} = Error term

T = The years 2008-2017

CHAPTER FOUR
Results and Discussion

In this chapter, we present and explain the analysis of the evaluation of the value relevance of book value and returns and dividend with leverage presented by the non-financial firms listed on the Borsa Istanbul in Turkey across the period 2008 - 2017. This chapter contains two parts: part one explains the descriptive statistics and the bivariate relationship among the variables; part two shows the unit root of all the variables.

4.1.1. Descriptive Statistics

Based on our valuation model, the pooled cross-sectional, time-series example in Table 4.1 reveals the descriptive statistics for the dependent and independent variables.

Table 4.1: Descriptive Statistics for dependent and independent variables

	P_{it}	BVP_{it}	EPS_{it}	DIV_{it}	LEV_{it}
Mean	1.17	4.61	0.52	0.26	0.24
Median	0.97	1.98	0.13	0.00	0.20
Maximum	5.86	110.28	52.12	16.42	7.23
Minimum	-2.30	-11.11	-5.40	0.00	0.00
Std. Dev.	1.34	10.40	2.46	1.02	0.32
Skewness	0.78	6.012	11.80	9.62	9.58
Kurtosis	3.73	45.74	199.19	121.26	165.56
Jarque-Bera	209.12	136.6	270.54	993.3	185.13
Probability	0.00	0.00	0.00	0.00	0.00
Sum	1955.17	7669.08	877.84	445.14	410.21
Sum Sq. Dev.	2990.909	179754.6	10097.37	1737.12	178.50
Observations	1660	1660	1660	1660	1660

In this section, the descriptive statistics of the explained and explanatory variables are presented, which enables to have an overview of the variables being studied. It can be seen from Table 4.1 that the descriptive statistics precisely encompass mean, median, max, min, standard deviation, skewness, kurtosis, and normality of the variables as well as the number of observations. Each variable consists of 1660 observations. The dependent variable of this study, stock price, is the measurement of value relevance of accounting information.

The table above shows that the median (mean) stock price per share for the period is about ৳ 0.97 (৳1.17), ranging from (৳ -2.30 to 5.86) from 2008 to 2017. However, the table further shows the median book value per share across the paper is (৳1.98) and the mean of book value per share is (৳ 4.61), ranging from (৳ -11.11) to (৳ 110.28) in study period. Hence, the median earnings per share over the10-years study period is (৳ 0.13) and the mean of earning per share is (৳ 0.52), ranging from (৳ -5.40) to (৳ 52.12) between 2008-2017. The median of dividend per share is (৳ 0.00), and the mean of dividend is (৳ 0.26). The median of leverage is (৳ 0.20), so the mean of leverage is (৳0.24).

After testing the research data 10-years for normality by applying the OLS, the Jarque-Bera shows that BVP, EPS, DIV, and LEV for all 10-years are normally distributed. While we transform the data as necessary. However, stock-price is transformed by taking a natural log transformation to be (P). Next, skewness and kurtosis values of 0.25 and 3.64, respectively, are implications of the changing process. This further shows the stock price has a standard deviation of 1.34.

4.1.2. Bivariate Correlation Results

The Pearson correlation coefficient measures the bivariate relation between each pair of our research variables including all dependent and explanatory ones. The values are between -1 for perfect negative linear correlation and +1 for perfect positive linear correlation. This test is also very commonly used in sciences to study the type of the relationship that exists between two variables. Nonetheless, the test cannot identify the direction of the impact from one variable to another one. As already mentioned in the previous chapter, the correlation test is applied for two reasons: the first is to detect the strength of the correlation associations between the explained and explanatory variables, and the second reason is to examine the multicollinearity problem of the econometric model in this thesis. The results of the correlation analysis are presented in Table 4.2. Not surprisingly, there is a correlation between (P) and (BVP, EPS, DIV, and LEV). One of the essential assumptions of classical regression model OLS is the absence of a multicollinearity problem in the regression model. Multicollinearity refers to the high (not perfect) correlation between the explanatory variables in a regression model; if a regressor is an exact linear combination of another regressor, then it can be said that the model sufferers from perfect multicollinearity (Wooldridge, 2006). Churchill and Iacobucci (2005) argued that in the case of the presence of multicollinearity, the volume of information about the impact of regressors on the regressed decreases. In regard to the volume of correlation that causes multicollinearity, the issue is still not clear. Some authors consider that a correlation below 90% does not cause serious multicollinearity issues (Hair et al., (2006) and

Malhotra (2007) argued that the multicollinearity issue exists when the correlation among independent variables is greater than 75%. Therefore, we confirm that the models of the present thesis are not suffering from the multicollinearity problem.

Table 4.2: Bivariate Correlations Between Variables

Variables	P_{it}	BVP_{it}	EPS_{it}	DIV_{it}	LEV_{it}
P_{it}	1.00				
BVP_{it}	0.60	1.00			
EPS_{it}	0.42	0.68	1.00		
DIV_{it}	0.47	0.60	0.59	1.00	
LEV_{it}	-0.12	-0.17	-0.09	-0.07	1.00

4.2. Panel Unit Root Test

The unit root test aims to address the stationarity of the variables. Stationarity is one of the preliminary tests that ought to be investigated before developing any econometric model. Variables are stationary if their mean, variance and auto-covariance are constant over time. If the series is not stationary in the regression analysis, the hypothesis tests cannot be undertaken correctly where the assumption of asymptotically distribution is not valid and the t-statistic is not following t-distribution and consequently the hypothesis tests are incorrect. The unit root causes spurious problem in the regression analysis, although two variables may be totally unrelated, if we regress one on the other, we gain a high R-squared and the outcome will be misleading (Gujarati, 2009).

The current study uses panel data to investigate the value relevance of accounting information. Common panel unit root tests are Levin, Lin & Chu (LLC) test, and the Phillips-Perron (PP) test. We applied the two tests to check for robustness in the results of the unit root test. The null hypotheses both tests are the presence of a unit root, whereas the alternative indicates there is no unit root and the variables are stationary at level. The level of confidence interval we apply is 90% across the tests.

To perform the stationarity test, this thesis uses the Levin, Lin & Chu t* and Philips and Peron (PP) criteria. The mentioned criteria perform the unit root test using the following hypothesis:

H0: Panel data has a unit root or is not stationary
H1: Panel data has not unit root or is stationary

Table 4.3 Panel Unit Root Test at Level

Variables	PP - Fisher Chi-square	Levin, Lin & Chu t*
P_t	817.75*	-28.20*
BVP_t	414.53*	-5.96*
EPS_t	783.59*	-30.04*
DIV_t	457.40*	-98.77*
LEV_t	621.13*	-583.11*

Note: Null Hypothesis: Data is not stationary. Asterisks (*), denotes 10% significant level respectively. t represents the most common model with intercept and trend.

Table 4.3 shows the results of the tests for variables used in this study. The two tests for unit root confirm together that all the variables of our study are stationary at level I (0) except the stock-price for which we take log, which is still stationary at level based on LLC t* and PP chi-square for all the variables. We can reject the null hypotheses of unit root tests at the 1% level. The lag length selections were automatic and based on Akaike information criterion. Resultantly, it is concluded that that based on different approaches, all the dependent and independent variables are stationary.

4.2.1 Checking of Hypothesis and Analysis

In addition to the normality and multicollinearity tests, the data set has been examined to remove the risk of other potential statistical problems, and thus to ensure that the multiple regression results are biased and reliable because we take lag for the model. To reduce the effects of extreme values, the smallest and largest one-half percent of the observations for each regression variable were excluded. Such extreme data points, well outside the norm, can arise for a number of reasons, and are termed outliers. Removing them is consistent with previous research by Kothari and Zimmerman, (1995), Collins et al., (1997), Ball et al., (2000). This results in a more reliable and strong correlation coefficient of the regression model.

4.2.2. Value Relevance of Book Value and Earnings

This research hypothesises that the information provided concerning book value (H1) and earnings (H2) was value relevant to the non-financial firm's participants between 2008 -2017 The price model, which expresses firm value as a linear function of book value, earnings and other value relevant information, was used to investigate these hypothesis. According to this model, developed by Ohlson (1995) and applied in many subsequent empirical studies, this investigation used the following equation to examine the relationship between stock price and book value and earnings:

$$P_{it} = P_{it}(-1)\beta_0 + \beta_1 BVP_{it} + \beta_2 EPS_{it} + \varepsilon_{it} \qquad (1)$$

Drawing on the work of Collins et al. (1997), the following two models were also employed to determine the relative explanatory power that book value and earnings value individually have in respect to stock prices:

$$P_{it} = P_{it}(-1)\beta_0 + \beta_1 BVP_{it} + \varepsilon_{it} \qquad (2)$$

$$P_{it} = P_{it}(-1)\beta_0 + \beta_2 EPS_{it} + \varepsilon_{it} \qquad (3)$$

As has been mentioned in the methodology (Chapter 3), the adjusted R^2 from models (one, two, three) is the key indicator of the value relevance of financial statement information. Supplementary to the adjusted R^2, the significance of the explanatory variable coefficients can be used to indicate the value relevance of the explanatory variables, separately.

Table 4.4 presents the pooled results of the regressing price on both book value and earnings together in model one and separately in models two and three.

Table 4.4 The Price Approaching Book-Value and Earnings (OLS)

(MODEL ONE)

Variables	**Coefficient**	**t-statistic**	**Prob.**
$\boldsymbol{BVPS_{it}}$	0.005	3.46	0.00
$\boldsymbol{EPS_{it}}$	0.014	2.52	0.011
$\boldsymbol{C}$	0.222	16.44	0.00
$\boldsymbol{R^2}$		0.90	
Adj- $\boldsymbol{R^2}$		0.90	
F-statistic		391.32	
Durbin-Watson		1.79	
Observations		1494	

(MODEL TWO)

Variables	**Coefficient**	**t-statistic**	**Prob.**
$\boldsymbol{BVPS_{it}}$	0.007	6.33	0.00
$\boldsymbol{C}$	0.220	16.27	0.00
$\boldsymbol{R^2}$		0.90	
Adj- $\boldsymbol{R^2}$		0.90	
F-statistic		426.13	
Durbin-Watson		1.80	
Observations		1494	

(MODEL THREE)

Variables	**Coefficient**	**t-statistic**	**Prob.**
$\beta_2 EPS_{it}$	0.025	5.86	0.00
$\boldsymbol{C}$	0.222	16.37	0.00
$\boldsymbol{R^2}$		0.90	
Adj- $\boldsymbol{R^2}$		0.90	
F-statistic		387.13	
Durbin-Watson		1.83	
Observations		1494	

After regression model one on the pooled sample, the result shows us that the model is significant at level ($F = 5009$, $p < 0.01$). The adjusted R^2 explained how the model can jointly explain the stock price together. Model one shows that book value and earnings jointly explain 90% of the stock prices variation of the non-financial firms listed on Borsa Istanbul in Turkey across 2008-2017, while models two and three have the same result when we tested them individually. Book value and earnings can explain individually by the adjusted R-square value of 91%. The pooled technique showed that the coefficient of book value and earnings are positive and significant ($p < 0.01$) and impact on stock prices. This result suggests that book value and earnings are important elements in determining the stock valuation for firms listed on the (BIST).

The value relevance of financial statement information across the 10 year period (2008-2017) in Turkey is higher than the figure proposed by the findings of previous studies, such as those by Siyanbola et al. (2015), Qu W. and Oliver (2012), Kargin (2013), Suadiye, G. (2012), Vijitha and Nimalathasan (2014), Shreyes and Gowda (2018), Alali and Foote (2009) contributed to the finding investors should give importance to information when making the decision to invest, especially book value and earning because they jointly explain the stock-price by 90% and impact on the stock price. Therefore, it is necessary for making

decisions in terms of investment and financial statements. These results obtained from the regression analysis provide evidence indicating that the book value and earnings of the non-financial firms listed on the Borsa Istanbul in Turkey between 2008 and 2017, played a significant role in equity value.

4.2.3 Pooled OLS Regression for the Model

To investigate the relationship between stock price per share and book value per share, earning per share, dividend per share, and leverage ratio, we firstly applied the pooled OLS technique. The dependent variables of our study were separately regressed on the explanatory variables along with the control variables. Table 4.5 presents the results of the regression models, where stock price per share is the depended variable. The results show that the impacts of all the explanatory and (control) variables are statistically significant at the 10% level. It can explain 91% variance of the dependent variable that is stock price per share; moreover, the F-statistics confirm that the model is good fitted since the probability of the test is significant at a 99% confidence interval. This means we can reject the null hypothesis that there are no differences between the variances (H0: $\sigma^2 1 = \sigma^2 2 = \sigma^2 3 = \ldots = 0$) in favour of the alternative hypothesis. Therefore, we can confirm the good fitness of our model.

More precisely, the results of the model show that book value per share has a positive influence on stock price per share and it is significant at the 10% level. Every 1% increase in book value per share leads the stock price per share to increase by 0.5 % with a standard deviation of 1.32. In other words, we can say the impact of the book value per share on stock price is positively significant at the 0.005 level. The high price by listed non-financial firms in Turkey significantly increases the stock price per share for those firms. However, the impact of earnings per share (coefficient and prob) is (0.015 and 0.008), so we can say that the impact of earning per share on the dependent variable is positive and significant. In terms of dividend per share, the coefficient is – 0.005 and probability is 0.65, which shows and explains that the impact is negative and it has an

insignificant influence on the dependent variable. The impact of leverage on the stock-price coefficient is -0.066 with a probability (0.036) at the 10% level. In addition, the coefficient of the constant indicates that, holding all the variables constant, the stock price per share of the non-financial firms listed on the Borsa Istanbul in Turkey has increased by 91% over the period 2008-2017. In our model we took one lag of the dependent variable.

$$P_{it} = P_{it}(-1)\beta_0 + \beta_1 BVP_{it} + \beta_2 EPS_{it} + \beta_3 DIV_{it} + \beta_4 LEV_{it} + \varepsilon_{it}$$

Table 4-5 Pooled OLS Regression Extend Model

Variables	Coefficient	t-Statistic	Prob.
BVP_{it}	0.05	(3.18) *	0.000
EPS_{it}	0.015	(2.63) *	0.008
DIV_{it}	-0.005	(-0.44)	0.65
LEV_{it}	-0.066	(-2.09) *	0.03
$\boldsymbol{R^2}$	0.91		
Adj. $\boldsymbol{R^2}$	0.91		
F-statistic	342.76		
Durbin-Watson	1.81		
Observations	1494		

Note: * relationship is significant at the level of 10 %, (two-tailed) in the brackets (t-statistics).

4.2.4 Fixed and Random Effect Hausman Test

Fixed and Random Effect Test: In statistics, a random effects model, also called a variance components model, is a kind of hierarchical linear model. It assumes that the data being analysed are drawn from a hierarchy of different populations whose differences relate to that hierarchy. In panel data analysis, the term random effects estimator (also known as the within estimator) is used to refer to an estimator for

the coefficients in the regression model including those random effects (one time-invariant intercept for each subject). The Hausman test allows us to find out whether the fixed or random effect is the most appropriate or fit to our series before we apply the main estimation through OLS panel regression. In particular, in this study we follow the Hausman test to examine the fixed-random cross section effect. The data set of this study consists of both cross-section and time series dimension, and thus panel model is adopted as the best econometric method of estimation. Common methods of panel regression are fixed-effect and random effect. As already mentioned in the previous chapter, in order to detect which method is best fit to the nature of our data, this study follows the Hausman test. The test detects whether the fixed-cross effect or random-cross effect is most suitable for the panel data. Based on the Hausman test, the hypothesis for testing is expressed as follows:

H0: Random effect model is appropriate
H1: Fixed effect model is appropriate

As it can be seen from Table 4.6 that the null hypothesis can be rejected for the model, implying that the fixed-cross effect is suitable for the model. The next step will be regression analysis using the fixed-cross effect.

Table 4.6 Panel Random Effect- Hausman Test

Model	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	(20.27)	4	0.0010

4.2.5 Fixed Effect Analysis and Interpretations

After taking into account the preconditions for panel regression such as unit root, in order to check the models of this study such as serial correlation and multicollinearity and normality distribute the data, on the other hand, the Hausman test proposes both fixed-effect and random-effect model as the appropriate models. We performed pooled Ordinary Least Square (OLS), Fixed-Effect (FE) models, which are the most utilized strategies for estimating panel data. The regression analysis produced the following results:

The test of variables by FE control firm specific characteristics; therefore, the results are more dependable compared to pooled OLS regression. Accordingly, we run both to regress the used dependent measures of stock price per share on the explanatory and control variables. We decided to use the Fixed Effect models after checking the Hausman test, which helps to choose the best model between FE and RE. The results of the Hausman test confirm that we can reject the null hypothesis that RE, we appropriate the fixed effect FE, because the probability of Chi-squared is greater than 10%.

The results of Table 4.7 show that book value has a positive influence on stock price and it is significant at the 5% level. Specifically, a 1% increase in book value leads to a 0.005 increase in stock price, and has positive significant at 5% level. The result shows that they can jointly explain value relevance, it is again confirmed that the high book value of non-financial firms listed on the Borsa Istanbul in Turkey significantly increases the stock price for those firms; however, based on the results of FE, the impact is same to those for the pooled OLS model. On the other hand, we can say that the impact of dividend is negative by -0.005 on stock-price and significant, 1% increases in dividend per share decrease stock price by -0.005% is negative impact and not significant. Although the impacts of book-value earnings and leverage are statistically significant, the adjusted R-squared in the fixed effect model indicates that these variables can explain 90% of the variance in the dependent variable. Additionally, the probability of F-statistics confirms the good fitness of the model. The results of FE model show that the impact of book

value and earnings on the stock price is positive and statistically significant at the 5% level. Whenever dividend per share has negative statistically and not significant, a 1% increase in earnings per share caused increase stock price by 0.015 positive and significant at 5% level, but 1% increase in leverage decreases stock price decreases by -0.066 negative impact and significant at 0.5% level. This again confirms that it has a negative influence on the stock price per share of the non-financial firms listed on the Borsa Istanbul in Turkey. The results of the model fixed effect show that the explanatory and control variables can together explain 90% variance in the dependent variable, which is stock price. This is claimed based on the adjusted R-squared obtained in the regression in the extended fixed effect model. Moreover, the F-statistics confirm that the model is good fitted.

$$P_{it} = P_{it}(-1)\beta_0 + \beta_1 BVP_{it} + \beta_2 EPS_{it} + \beta_3 DIV_{it} + \beta_4 LEV_{it} + \varepsilon_{it}$$

Table 4-7: Fixed Effect Test

Variables	Coef.	t-Sta	Pro.
BVP_{it}	0.005	(3.694) *	0.0005
EPS_{it}	0.015	(3.013) *	0.0020
DIV_{it}	-0.005	(-0.513)	0.6080
LEV_{it}	-0.066	(-2.403) *	0.0161
$\boldsymbol{R^2}$	0.91		
Adj. $\boldsymbol{R^2}$	0.90		
F-statistic	83.72		
Durbin-Watson	1.83		
Observations	1494		

Note: * correlation is significant at 10% level, (two-tailed); in the brackets (t-statistics).

CHAPTER FIVE

CONCLUSION

5.1. Summary and Results

In the previous chapter, we performed empirical tests on the collected data for the research hypothesis. According to the cross-sectional result analysis performed, “book value and earnings” are a significant with positive influence and are related to stock-price both individually and together, significantly and positively. The results obtained from the pooled panel analysis also show that book value and earnings have a significant and positive impact on the explanation of stock price for non-financial firms listed on the Borsa Istanbul in Turkey during the period 2008-2017. The adjusted R2 explains and show that book value and earnings collectively explain 90% of the variation of stock price over the 10-year periods. This result related to the research hypothesis of book value and earnings supported the value relevance of stock price. In other words, we can say that “book value and earnings”, have value relevance for investors considering (BIST) firms during 2008-2017. This supports the results in the literature reported by the studies of Siyanbola et al. (2015), Qu W. and Oliver (2012), Kargin (2013), Suadiye, G. (2012), Vijitha and Nimalathasan (2014), Shreyes and Gowda (2018), Alali and Foote (2009) Barth (2018).

Our results have been compared with other research on value relevance, such as Kargin, (2013) and Suadiye, (2012). Our results indicated the high value relevance of BIST-listed non-financial firms’ earnings and book value, which were seen to be significant benefits for stakeholders investing in developing markers, and are

greater than in many emerging nations. However, when compared to research by previous researcher such as Kargin, (2013) and Suadiye, (2012) the same result was found. Consequently, the “value relevance of earnings and book value” was studied to determine whether a significant increase in value relevance happened across 2008–2017.

This results in our study are consistent with previous studies conducted on the U.S. by Chang, (1999) Brown et al.,(1999) who assumed that the relevance of earnings and book values, together and separately, increased during their research periods. Our results are supported by these studied because they show that financial statements aid investor and creditors when making decisions in the economy.

The results from models one, two and three for the stock-price regression provide conclusions for developed markets (Collins et al., 1997). For instance, during this research, frequently used measurements for value relevance were found to be earnings and book value. Collins et al. (1997) used the stock price model valuation on U.S. data collected for the period 1953–1993. He “reported that earnings and book value describe 54% of the cross-sectional variation in security stock-prices for their research time period”. The present study adjusted R^2 obtained 90%. of the cross-sectional regressions of stock-price on the earnings and book value in comparison to the research of Collins et al., which reported an adjusted R^2 of 75%, This result implies that the BIST-listed non-financial corporations have earnings and book values that commonly show features similar to those in advanced markets. However, it is fascinating to see that the coefficients on earnings and book values for BIST-listed non-financial corporations are usually greater than those stated by Collins et al. In particular, BIST-quoted firms show coefficients on earnings as 0.005 and book value of 0.014 solely, which were less than the values of 3.41 and 0.54 stated by Collins et al. Furthermore, when analysing the investigation result of earlier examinations of developing countries, the earnings and book values of BIST-listed non-financial firms appear more value relevant. Furthermore, Bae and Jeong (2007) examined the value relevance for Korean firms’ earnings and book values from 1987–1998. Their results illustrated that

earnings and book value described 34% of Korean firm stock-prices during this time, which was 90% lower than for BIST-listed non-financial firms. The value relevance of BIST-quoted non-financial firms' profits and book values is typically consistent with those of advanced markets (Collins et al., 1997; Francis and Schipper, 1999; and higher than some emerging markets (Chen et al., 2001; Bae and Jeong, 2007)these research issues are connected besides previous relevance research in Turkey Kargin, (2013) and Suadiye, (2012). The value relevance of earnings and book value shown in this study is greater than that achieved before.

Similarly to the literature, leverage is seen as a change factor impacting the value relevance of book value and earnings. The results show that leverage had the same impact on the stock price; in other words, we can accept H4 because it is significant at the 10% level and had a negative influence on stock-price. This means that leverage can explain the value relevance of BIST listed non-financial firms in Turkey.

However, based on studies by Siyanbola et al. (2015), Qu W. and Oliver (2012), Kargin (2013), Suadiye, G. (2012), Vijitha and Nimalathasan (2014), Shreyes and Gowda (2018), Alali and Foote (2009) Barth (2018), the impact of dividend per share on the stock-price is insignificant and negative. This means that the variable dividend per share has no impact on value relevance in our study examining the non-financial firms listed on the Borsa Istanbul in Turkey during this period 2008-2017. Our research is based on non-financial firms listed on Borsa Istanbul in Turkey. The obtained results indicate that non-financial firms in Turkey have value relevance during the period 2008-2017, with a total of 166 firms and 1660 observations. analysed.

Table 5.1 The Result of Hypotheses and Research Questions Corresponding

Research Question	Hypotheses	Result
Does accounting information have value relevance in non-financial firms listed on the Borsa Istanbul in Turkey?	H1: Accounting information has a significant impact on the stock price of non-financial firms listed on the BIST. H2: Book value per share has a significant impact on the stock price of non-financial firms listed on the BIST. H3: Earning per share has a significant impact on the stock price non-financial firms listed on the BIST.	Supported Supported Supported
Is there a relation between stock prices and accounting variables which were observed and scientifically confirmed on developed dividend per share, and leverage ratio?	H4: Dividend per share has a significant impact on stock price of non-financial firms listed on the BIST. H5: Leverage ratio has a significant impact on stock price of non-financial firms listed on the BIST.	Not supported Supported

5.2. Major Contributions and Implication

This study provides useful insights in terms of the value relevance of accounting data in Turkey. It also adds to the literature through its investigation of the value relevance over the stated ten-year period, which appears to be the longest test regarding this issue. A significant implication of these findings is the identifiable need for the non-financial firms listed on the BIST to take serious actions on compliance issues with listed companies. Levels of compliance have been shown to be positively correlated with the value relevance of accounting information (Alfaraih, ,2009; Kargin, (2013; Suadiye, G. 2012). The observed increase in the value relevance of accounting information may well be due to the increase in the level of compliance.

5.3. Limitations and Suggestions

5.3.1. Limitations

Similar to any research, consideration should be given to certain limitations when interpreting the results. The limitations of this study are outlined in four points:

1- This study period was limited to only ten years in examining the value relevance of information reported in the financial statements of non-financial firms listed on the Borsa Istanbul in Turkey (BIST). Comparable financial statements are only available for this 10-year period.

2- Due to the time limitations this research, this study concentrated mainly on the non-financial firms listed on the Borsa Istanbul in Turkey. Consequently, it does not cover all listed companies in Turkey like financial firms, banks, and insurance companies.

3- Because of the variation in the economic growth, accounting and legal environment between the Turkey and some other countries, generalizing the results of this paper to other stock prices should be done with some caution. For example, countries that operate a code law regime may well present significantly different results.

4- This study has only used Ohlson's price model to analyse and explain the variations in the value relevance of accounting information.

5.3.2. Suggestions

The limitations of this study may help with the identification of potential areas for future study:

1- Future studies could cover a longer period investigating the value relevance of accounting information, considering whether the same pattern of decline can be observed over a longer time frame.

2- Future research may include all the listed companies in Turkey, such as banks, financial and insurance companies.

3- Future research could employ the return model in addition to the price model. This is likely to verify whether there are any differences between the results of the two models, and if there are differences, produce valuable data to understanding the meaning and implications.

REFERENCES

Alali, F. and Foote, P. (2012), The Value Relevance of International Financial Reporting Standards: Empirical Evidence in an Emerging Market, *The International Journal of Accounting*, 47, pp. 85–108.

Alfaraih, M. (2009), *Compliance with international financial reporting standards (IFRS) and the value relevance of accounting information in emerging stock markets: evidence from Kuwait*, PhD thesis, Queensland University of Technology, Available at: http://eprints.qut.edu.au/36377/.

Aubert, F., and Grudnitski, G. (2011), The impact and importance of mandatory adoption of International Financial Reporting Standards in Europe, *Journal of international financial management and accounting*, 22(1), pp. 1-26.

Aharony, J., Barniv, R. and Falk, H. (2010), The Impact of Mandatory IFRS Adoption on Equity Valuation of Accounting Numbers for Security Investors in the EU, *European Accounting Review*, 19(3), pp. 535–578.

Al-Shammari, B., & Al-Sultan, W. (2010). Corporate governance and voluntary disclosure in Kuwait. *International Journal of Disclosure and Governance*, *7*(3), 262-280.

Ali, A., Hwang, L.S.(1999). Country-specific factors related to financial reporting and the value relevance of accounting data. Working paper, University of Arizona and City University of New York.

Amir, E. et al. (1993), A comparison of the value relevance of U.S. versus non-U.S. GAAP accounting measures using Form 20-F reconciliations, Journal of Accounting Research, 31(Suppl.), pp. 230–264.

Al-Hogail, A. (2004), *The valuation effect of investor behavior on the relevance of financial information*, PhD thesis, Case Western Reserve University, Ohio, United States.

Aras, O. N. (2010), Effects of the global economic crisis on Turkish banking sector.

Bhattacharjee, S. (2009), Problems of adoption and application of International Financial Reporting Standards (IFRS) in Bangladesh, *International Journal of Business and Management*, 4(12), pp. 165-175.

Ball, R. (2006), “IFRS: Pros and Cons dor Investors” Accounting &Business Research, 36(4): 5-27.

Ball R and Brown P (1968), “An Empirical Evaluation of Accounting Income Numbers”, Journal of Accounting Research, Vol. 6, No. 2, pp. 159-177.

Banker, R. D., Huang, R., & Natarajan, R. (2009), Incentive contracting and value relevance of earnings and cash flows. Journal of Accounting Research, 47(3), 647-678.

Brimble, M. and Hodgson, A. (2007), On the intertemporal value relevance of conventional financial accounting in Australia, *Accounting and Finance*, 47(4), pp. 599-622.

Ballas, A. and Hevas, D. L. (2005), Differences in the Valuation of Earnings and Book Value: Regulation Effects or Industry Effects? *The International Journal of Accounting*, 40(4), pp. 363–389.

Bao, B.H., Chow, L., (1999). The usefulness of earnings and book value for equity valuation in emerging capital markets: evidence from listed companies in the People's Republic of China. Journal of International Financial Management and Accounting 10 (2), 85–104.

Bowerman, S. and Sharma, U.P. (2016), "The effect of corporate social responsibility disclosures on share prices in Japan and the UK".

Brown, S., Lo, K. and Lys, T. (1999), Use of R2 in accounting research: measuring changes in value relevance over the last four decades, *Journal of Accounting and Economics*, 28(2), pp. 83-115.

Barth M, Beaver W H and Landsman W R (2001), "The Relevance of the Value Relevance Literature for Accounting Standard Setting: Another View", Journal of Accounting and Economics, Vol. 31, Nos. 1-3, pp. 77-104.

Barth, M. E., Li, K., & McClure, C. (2018). Evolution in value relevance of accounting information.

Barth, M. E., W. R. Landsman and M. H. Lang,(2008).'International Accounting Standards and Accounting Quality', Journal of Accounting Research, Vol. 46, No.3.

Barth, M.E., Elliott, J.A., Finn, M.W.,(1999). Market rewards associated with patterns of increasing earnings. J. Account. Res. 37 (2), 387–413.

Barth, M.E., W.R. Landsman, M. Lang and C. Williams, (2006), Accounting quality: International accounting standards and US GAAP. Working paper (University of North Carolina and Stanford University).

Basu, S., (1997), “The Conservatism Principle and the asymmetric Timeliness of Earnings”, *Journal of Accounting and Economics* 24, p.

Bauman, M. P., & Shaw, K. W. (2018), Value relevance of customer-related intangible assets. *Research in Accounting Regulation*, *30*(2), 95-102.

Beaver, W.H., Kettler, P. and Scholes, M. (1970), The association between market-determined and accounting determined risk measures. Accounting reviews, 45 (3): 654-682.

Bartov, E., Goldberg, S. and Kim, M. (2005), Comparative Value Relevance among German, U.S. and International Accounting Standards: A German Stock Market Perspective, *Journal of Accounting, Auditing and Finance*, 20(2), pp. 95–119.

Beaver, W. (2002), Perspectives on recent capital market research, *The Accounting Review*, 77(2), pp. 453-474.

Beaver, W. H. (1998). *Financial reporting: an accounting revolution* (Vol. 1). Upper Saddle River, NJ: Prentice Hall.

Biddle, G.C., Seow, G.S. and Siegel, A.F. (1995), “Relative versus incremental information content”, Contemporary Accounting Research, Vol. 12 No. 1, pp. 1-23.

Burke, Q. L., & Wieland, M. M. (2017). Value relevance of banks' cash flows from operations. *Advances in accounting*, *39*, 60-78.

Black, E.L., Sellers, K., White, J.J., 2000. A comparison of the value relevance information across Germany, Japan and the U.S. Working paper, University and Northern Kentucky.

Brief R P and Zarowin P (1999), “The Value Relevance of Dividend, Book Value and Earnings”, available at www.stern.nyu.edu/~rbrief/zarowin.pdf.

Chang, J. J. (1999), *The decline in value relevance of earnings and book values*, PhD Thesis, Harvard University.

Callao, S., Jarne, J. I. and Laínez, J. A. (2007), Adoption of IFRS in Spain: Effect on the comparability and relevance of financial reporting, *Journal of International Accounting, Auditing and Taxation*, 16(2), pp. 148-178.

Callen, J., Morel, M., (2001), Linear accounting valuation when abnormal earnings as AR(2). Rev. Quant. Finance Account. 16 (3), 191–204.

Chandrapala, P. (2013), The value relevance of earnings and book value: The Importance of ownership concentration and firm size. Journal of Competitiveness, 5 (2), 98-107.

Chelsea Liu, Graeme Gould, Barry Burgan, (2014),"Value-relevance of financial statements: Evidence from A- and B-share markets in China", International Journal of Managerial Finance, Vol. 10 Issue: 3.

Chen, S., Sun, Z., Wong, Y., (2002), Evidence from China on whether harmonized accounting standards harmonize accounting practices. Accounting Horizons 16 (3), 183–197.

Chua Y., Cheong C. and Gould G. (2012), The impact of mandatory IFRS adoption on accounting quality: Evidence from Australia, *Journal of international accounting research*, 11(1), pp. 119–146.

Chalmers K., Clinch G. and Godfrey J. (2011), Changes in value relevance of accounting information upon IFRS adoption: Evidence from Australia, *Australian Journal of Management*, 36(2), pp. 151–173.

Chalmers, K., Navissi, F., & Qu, W. (2010). Value relevance of accounting information in China pre-and post-2001 accounting reforms. *Managerial Auditing Journal*, *25*(8), 792-813.

Collins, D. W., Maydew, E. L., and Weiss, I. S. (1997), Changes in the value-relevance of earnings and book values over the past forty years. Journal of Accounting and Economics, 24, 39- 67.

Collins, D., Pincus, M. and Xie, H. (1999), "Equity valuation and negative earnings: the role of book value of equity", The Accounting Review, Vol. 74 No. 1, pp. 29-61.

Clacher, I., De Ricquebourg, A. D., & Hodgson, A. (2013). The value relevance of direct cash flows under International Financial Reporting Standards. *Abacus*, *49*(3), 367-395.

Cormier, D. and Magnan, M. (2010), Financial reporting under IFRS is relevant for investors, but is it reliable and comparable? *Capital Markets Magazine*, pp. 48-50.

Clarkson, P., Hanna, J. D., Richardson G. and Thompson, R. (2011), The impact of IFRS adoption on the value relevance of book value and earnings, *Journal of Contemporary Accounting & Economics*, 7, pp. 1–17.

Conceptual Framework for Financial Reporting. (2010). September.

Daske, H., and G. Gebhardt, (2006), ‘International Financial Reporting Standards and Experts’ Perceptions of Disclosure Quality’, Abacus,Vol. 42, Nos 3 – 4.

Daske, H., Hail, L., Leuz, C. and Verdi, R. S. (2008), Mandatory IFRS Reporting around the world: early evidence on the economic consequences, *Journal of Accounting Research*, 46(5), pp. 1085−1142.

Devalle, A., Onali, E. and Magarini, R. (2010), Assessing the value relevance of accounting data after the introduction of IFRS in Europe, Journal of international financial management and accounting, 21(2), pp. 85-119.

Davidson, I., Guo, Q., Song, X., Tippett, M., (2012), Constructing asset pricing models with specific factor loadings. Abacus 48 (2), 199–213.

Dhiaa Shamki, Azhar Abdul Rahman, (2013), "Does financial disclosure influence the value relevance of accounting information?", Education, Business and Society: Contemporary Middle Eastern Issues, Vol. 6 Issue: 3/4, pp.216-232.

Easton, P. and Harris, T. (1991), Earnings As an Explanatory Variable for Returns, *Journal of Accounting Research*, 29(1), pp. 19-36.

Ely, K. and Waymire, G. (1999), Accounting standard-setting organizations and earnings relevance: longitudinal evidence from NYSE common stocks, 1927-93, *Journal of accounting Research*, 37(2), pp. 293-317.

Epstein, B. and Mirza, A. (2002), *IAS 2002; interpretation and application of international accounting standards*, John Wiley & Sons Inc, US.

Epstein, B. J. and Jermakowicz, E. K. (2008), *Wiley IFRS 2008: Interpretation and Application of International Accounting and Financial Reporting Standards 2008*, John Wiley & Sons Inc, US.

Elias N. (2012), Discussion of the impact of mandatory IFRS adoption on accounting quality: Evidence from Australia, *Journal of International Accounting Research*, 11(1), pp. 147-154.

El Shamy, M. A., and Kaled, M. A. (2005), The value relevance of earning and book values in equity valuation: An international perspective – the case of Kuwait. International Journal of Commerce and Management, 14, 68-79.

Elbakry, A. E., Nwachukwu, J. C., Abdou, H. A., & Elshandidy, T. (2017), Comparative evidence on the value relevance of IFRS-based accounting information in Germany and the UK. Journal of International Accounting, Auditing and Taxation, 28, 10-30.

Falta, M., Willett, R.J., (2013), The impact of exponential growth variables on regression models of the market-accounting relation. J. Account. Audit. Finance 28, 243–272.

Feltham, G., and J. Ohlson, (1995), “Valuation and Clean Surplus Accounting for Operating and Financial Activities”, *Contemporary Accounting Research* 11 , p. 689-731.

Filip, A., and Raffournier, B. (2010), The value relevance of earnings in a transition economy: The case of Romania. The International Journal of Accounting, 45(1), 77-103.

Francis, J. and Schipper, K. (1999), “Have financial statements lost their relevance?”, Journal of Accounting Research, Vol. 37 No.2, pp. 319-352.

Francis, J. et al. (2004) Costs of equity and earnings attributes, Accounting Review, 79(4), pp. 967–1010.

Fakhari, H., & Pitenoei, Y. R.(2018). Information Environment and Value Relevance of Accounting Information.

Graham, J.R., C.R. Harvey and S. Rajgopal (2005), 'The Economic Implications of Corporate Financial Reporting', *Journal of Accounting & Economics*, Vol. 40, Nos. 1–3 (December), pp. 3–73.

Graham, R., King, R. and Bailes, J. (2000), The value relevance of accounting information during a financial crisis: Thailand and the 1997 decline in the value of the baht, *Journal of International Financial Management & Accounting*, 11(2), pp. 84-107.

Guay W and Harford J (2000), "The Cash-Flow Permanence and the Information Content of Dividend Increases versus Repurchases", Journal of Financial Economics, Vol. 57, No. 3, pp. 385-415.

Gjerde, O., Knivsfla, K. and Sættem, F. (2005), *The value-relevance of financial reporting on the Oslo Stock Exchange over the period 1964–2003*, Discussion papers (23), Department of Finance and Management Science, Norwegian School of Economics and Business Administration.

Gaston, S., Garcia, C., Jarne, J. and Gadea, J. (2010), IFRS adoption in Spain and the United Kingdom: Effects on accounting numbers and relevance, *Advances in Accounting, incorporating Advances in International Accounting*, 26, pp. 304–313.

Habib, A,(2002), Changes in the value relevance of accounting book values and earnings: empirical evidence from Japan, Hitotsubashi Journal of Commerce and Management, 37 (1). 55-82.

Hail, L. (2013), “Financial reporting and firm valuation: relevance lost or relevance regained?”, Accounting and Business Research, Vol. 43 No. 4, pp. 329-358.

Hillier, D. J., Ross, S. A., Westerfield, R. W., Jaffe, J. and Jordan, B. D. (2010), *Corporate finance* (1st European edition), McGraw-Hill.

Hellstrom, K. (2006), The value relevance of financial accounting information in a transition economy: The case of the Czech Republic, *European Accounting Review*, 15(3), pp. 325-344.

Holthausen, R.W. (2009), “Accounting Standards, Financial Reporting Outcomes and Enforcement” Journal of Accounting Research, 47(2):447-458.

Horton, J. and Serafeim, G. (2010), Market reaction to and valuation of IFRS reconciliation adjustments: first evidence from the UK, *Review of Accounting Studies*, 15(4), pp. 725-751.

Healy, P. and Palepu, K. (2001), “Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature”, Journal of Accounting and Economics, Vol. 31, pp. 405-440.

Hu, N., Qi, B., Tian, G., Yao, L., & Zeng, Z. (2013), The impact of ineffective internal control on the value relevance of accounting information. *Asia-Pacific Journal of Accounting & Economics*, *20*(3), 334-347.

Hung M (2001), “Accounting Standards and Value Relevance of Financial Statements: An International Analysis”, Journal of Accounting and Economics, Vol. 30, No. 3, pp. 401-420.

Ho, L. C. J., Liu, C. S., & Sohn, P. S. (2001). The value relevance of accounting information around the 1997 Asian financial crisis—the case of South Korea. *Asia-Pacific Journal of Accounting & Economics*, *8*(2), 83-107.

Hung, M. and Subramanyam, K. R. (2007), Financial statements effects of adopting International Accounting Standards: the case of Germany, *Review of Accounting Studies*, 12(4), pp. 623−671.

Hope, O. K. (2003), Disclosure practices, enforcement of accounting standards, and analysts' forecast accuracy: an international study, *Journal of Accounting Research*, 41(2), pp. 235−272.

IASB, C.F. (2010), The Conceptual Framework for Financial Reporting, as in September
2010, International Accounting Standards Board, London, UK.

International Accounting Standards Board (2010), *International Accounting Standards Board: Framework for the preparation and presentation of financial statements*, Available at: http://www.iasplus.com.

Jenkins, E,(1994), An examination highway in need of capital improvements. Journal of Accountancy (May), 77–80.

Jermakowicz, E. K., Prather-Kinsey, J. and Wulf, I. (2007), The Value Relevance of Accounting Income Reported by DAX-30 German Companies, *Journal of International Financial Management and Accounting*, 18(3), pp. 151-191.

Jiang, L., & Kim, J. B. (2000), Cross-corporate ownership, information asymmetry and the usefulness of accounting performance measures in Japan. The International Journal of Accounting, 35(1), 85-98.

Jetty, J., & Beattie, V. A. (2008). Factors influencing narrative disclosure by large UK charities: Interview evidence. *Available at SSRN 1308180*.

Kousenidis, D., Ladas, A. and Negakis, C. (2010), Value Relevance of Accounting Information in the Pre-and Post-IFRS Accounting Periods, *European Research Studies Journal*, 13(1), pp. 143-152.

Kargin, S. (2013), The impact of IFRS on the value relevance of accounting information: Evidence from Turkish Firms. The International Journal of Economics and Finance, 5 (4), 71-80.

Katerina Hellström (2006), The Value Relevance of Financial Accounting Information in a Transition Economy: The Case of the Czech Republic, European Accounting Review, 15:3, 325-349, DOI: 10.1080/09638180600916242.

Kevin C.K. Lam, Heibatollah Sami, Haiyan Zhou (2013), Changes in the value relevance of accounting information over time: Evidence from the emerging market of China, journal of Contemporary accounting and economics no.9, 123-13.

Kimouche, B., & Rouabhi, A. (2016), The impact of intangibles on the value relevance of accounting information: Evidence from French companies. Intangible Capital, 12(2), 506-529.

Kouser, R. and Azzem, M. (2011), Relationship of share price with earnings and book value of equity: paramount impact of IFRS adoption in Pakistan, *Economics and Finance Review*, 1(8), pp. 84 – 92.

Kwon, G.-J. (2009), “The value relevance of book values, earnings and cash flows: evidence from South Korea”, International Journal of Business and Management, Vol. 4 No. 10, pp. 28-42 (in Korean).

Kumar, M., & Woo, J. (2010). Public debt and growth. *IMF working papers*, 1-47.

Khanagha, J. B. (2011), Value Relevance of Accounting Information in the United Arab Emirates. International Journal of Economics and Financial Issues, 1(2), 33-45.

Lambert, R. A. (1993), The use of accounting and security price measures of performance in managerial compensation contracts: a discussion. Journal of Accounting and Economics, 16(1-3), 101-123.

Landsman, W., Maydew, E., (2002), Has the information content of quarterly earnings announcements declined in the past three decades? Journal of Accounting Research 40 (3), 797–808.

Latridis, G. (2010), International Financial Reporting Standards and the quality of financial statement information. International Review of Financial Analysis ,19, 193–204.

Lev, B. and Zarowin, P. (1999), The boundaries of financial reporting and how to extend them, *Journal of Accounting Research*, 37(2), pp. 353-385.

Lev, B., (1989), On the usefulness of earnings: lessons and directions from two decades of empirical research. Journal of Accounting Research (Suppl.), 153– 182.

Lin, Z.J. and Chen, F. (2005), “Value relevance of International Accounting Standards harmonization: evidence from A- and B-share markets in China”, Journal of International Accounting Auditing and Taxation, Vol. 14 No. 2, pp. 79-103.

Liu, J., D. Nissim and J. Thomas (2002), ‘Equity Valuations Using Multiples’, *Journal of Accounting Research*, Vol. 40, No. 1 (March), pp. 135–72.

La Porta, R., Lopez de Silanes, F. and Shleifer, A. (2006), What works in securities laws? *The Journal of Finance*, 61(1), pp. 1−32.

Leuz, C., Nanda, D. and Wysocki, P. D. (2003), Earnings management and investor protection: an international comparison, *Journal of Financial Economics*, 69, pp. 505−527.

Manganaris P., Floropoulos J. and Smaragdi I. (2011), Conservatism and value relevance: Evidence from the European financial sector, *American Journal of Economics and Business Administration*, 3(2), pp. 254-264.

Manisha Khanna (2014), “Value Relevance of Accounting Information: An Empirical Study of Selected Indian Firms”, International Journal of Scientific and Research, Vol. 4, No. 1, pp. 1-6.

Morais, A. I. and Curto, J. D. (2009), Mandatory Adoption of IASB Standards: Value Relevance and Country-Specific Factors, *Australian Accounting Review*, 19(2), pp. 128-143.

Miller M H and Modigliani F (1966), “Some Estimates of the Cost of Capital to the Electric Utility Industry 1954-57”, The American Economic Review, Vol. 56, No. 3, pp. 333-391.

Muharani, A., and Sinegar, S.V. (2014), The Effects of IFRS Convergence on Value Relevance of Accounting Information: Cross –Country Analysis of Indonesia, Malaysia and Singapore. Universities Mataran (Universities Indonesia), 24-27.

Naimah, Z. (2012), Bias in accounting and the value relevance of accounting information. *Procedia Economics and Finance*, *2*, 145-156.

Negakis, J. (2005), Accounting and capital markets research: A review, *Managerial Finance*, 31(2), 1-23.

Nobes, C.W., (1983), A judgmental classification of financial reporting practices. Journal Business Finance and Accounting.

Ohlson J (1995), “Earnings, Book Values and Dividend in Equity Valuation,” Contemporary Accounting Research, Vol. 11, No. 2, pp. 661-687.

Ou J A and Sepe J F (2002), “Analysts Earnings Forecasts and the Roles of Earnings and Book Value in Equity Valuation”, Journal of Business Finance and Accounting, Vol. 29, No. 3, pp. 287-316.

Oyerinde, D. T. (2009, May). Value relevance of accounting information in emerging stock market in Nigeria. In *Proceedings of the 10th Annual International Conference. International Academy of African Business and Development (IAABD), Uganda*.

Omokhudu,o .Ibadin,p,.(2013),The Value Relevance Of Accounting Information Evidence From Nigeria. www.sciedupress.com/afr Accounting and Finance Research Vol. 4, No. 3; 2015http://dx.doi.org/10.5430/afr.v4n3p20.

Purswani, G., & PS, A. (2017). Value Relevance of Accounting Information: An Empirical Study on Construction Companies Listed on Bombay Stock Exchange. *IUP Journal of accounting research & audit practices*, *16*(2).

Paglietti, P (2009), Earnings management, timely loss recognition and value relevance in Europe following mandatory adoption: Evidence from Italian listed Companies, Economia Aziendale Online (2003), 4 (2009), 97117.

Psaroulis, A. (2011), *Did financial reporting quality improve after the adoption of IFRS in Greece?* University of Piraeus, Thesis Project, Available at: http://digilib.lib.unipi.gr/dspace/bitstream/unipi/4705/1/Psaroulis.pdf.

Penman, S. (2003), 'The Quality of Financial Statements: Perspectives from the Recent Stock Market Bubble', *Accounting Horizons*, Vol. 17, pp. 77–96.

Penman, S.H., (2010), Financial forecasting, risk, and valuation: accounting for the future. Abacus 46, 211–228.

Penman, S.H., Reggiani, F.,(2013), Returns to buying earnings and book value: accounting for growth and risk. Rev. Account. Stud. 18 (4), 1021–1049.

Paananen, M. and Parmar, N. (2008), *The Adoption of IFRS in the UK*. Working paper, University of Hertfordshire, Available at: http://www.ssrn.com/.

Pirie, S. and Smith, M. (2005), *Relationships between Stock Prices and Accounting Information: A Review of the Residual Income and Ohlson Models*, Working paper, Available at: https://www.ecu.edu.au/.

Prather-Kinsey, J. (2006), Developing Countries with Developed –Country Accounting

Standards: Evidence from South Africa and Mexico. The International Journal of Accounting, 41, 141-162.

Perera, R. A. A. S., & Thrikawala, S. S. (2010), An Empirical Study of the Relevance of Accounting Information on Investor's Decisions. University of Kelaniya, Kelaniya, Sri Lanka. Retrieved from http://repository.kln.ac.lk/91/1/FIN002.pdf.

Qu W., Fong M. and Oliver J. (2012), Does IFRS convergence improve quality of accounting information? Evidence from Chinese stock market, *Corporate Ownership & Control*, 9(4), pp. 187-196.

Qi, D.D.,Wu, Y.W., Xiang, B.,(2000), Stationarity and cointegration tests of the Ohlson model. J. Account. Audit. Finance 15 (2), 141–160.

Suadiye, G. (2012), Value Relevance of Book Value & Earnings under the Local GAAP and IFRS: Evidence from Turkey, *Ege Academic Review*, 12(3), pp. 301-310.

Sami, H., Zhou, H., (2008), The economic consequences of increased disclosure: evidence from cross-listings of Chinese firms. Journal of International Financial Management and Accounting 19 (1), 1–27.

Shamki, D. (2013), "The influence of economic factors on the value relevance of accounting information in Jordan", International Journal of Business and Management, Vol. 8 No. 6, pp. 89-104.

Shreyes, N. R., & Gowda, K. N. (2018), An Empirical Study of Value Relevance of Financial Reporting in Indian Corporate Sector. IUP Journal of Accounting Research & Audit Practices, 17(2).

Siyanbola, A., Ogbole, F., & Masoyi, D. (2015), Price Models and the Value Relevance of Accounting Information of Listed Deposit Money Banks in Nigeria.

Song, I., Douthett, E. B., & Jung, K. (2003), The role of accounting information in stock market liberalization: Evidence from Korea. Advances in International Accounting, 16(1), 67-84.

Subramanyam K R and Venkatachalam M (2007), “Earnings, Cash Flows, and Ex-Post Intrinsic Value of Equity”, The Accounting Review, Vol. 82, No. 2, pp. 457-481.

The World Bank (2006). Where is the wealth of Nations? Measuring Capital for the 21st Century. Washington: The World Bank.

Tsalavoutas, I. and Evans, L. (2010), Implementation of international financial reporting standards in the EU – Greek evidence of effects on financial statements, *Managerial Auditing Journal*, 25(8), pp. 814–842.

Tsalavoutas, I., André, P. and Evans, L. (2009), Transition to IFRS and value relevance in a small but developed market: A look at Greek evidence, *32nd Annual Congress of the European Accounting Association*.

Uygur, E. (2010). The global crisis and the Turkish economy (No. 2010/3). Discussion Paper, Turkish Economic Association.

Vázquez, R. D., Valdés, A. L. and Herrera, H. V. (2007), Value relevance of the Ohlson model with Mexican data, *Contaduría y administración*, (223), pp. 33-52.

Vijitha, P., & Nimalathasan, B. (2014). Value relevance of accounting information and share price: A study of listed manufacturing companies in Sri Lanka. Merit Research Journal of Business and Management, 2(1), 1-6.

Vishnani S and Shah B (2008), "International Differences in the Relation Between Financial Reporting Decisions and Value Relevance of Published Financial Statements – With Special Emphasis on Impact of Cash Flow Reporting", International Research Journal of Finance and Economics, Vol. 17, No. 1, pp. 1450-2887.

Willett, R.J., (2015), Logarithmic transformations in cross section regression models of the long run relation between market and accounting values. Working Paper, available on SSRN.

Watts, R. L. (2003). Conservatism in accounting part I: Explanations and implications. *Accounting horizons*, 17(3), pp. 207-221.

Xiao, Z., (1999). Corporate disclosures made by Chinese listed companies. International Journal of Accounting 34 (3), 349–373.

Zhou, H., (2007). Auditing standards, increased accounting disclosure, and information asymmetry: evidence from an emerging market. Journal of Accounting and Public Policy 26 (5), 584–620.

APPENDIX

Descriptive Statistics

Date: 06/07/19
Time: 23:44
Sample: 2008 2017

	P	BVP	EPS	DIV	LEV
Mean	1.177815	4.619932	0.528821	0.268157	0.247119
Median	0.974560	1.981000	0.136000	0.000000	0.203124
Maximum	5.866468	110.2820	52.12000	16.42000	7.237010
Minimum	-2.302585	-11.11900	-5.409000	0.000000	0.000000
Std. Dev.	1.342698	10.40919	2.467067	1.023276	0.328024
Skewness	0.789097	6.012103	11.80705	9.621652	9.582884
Kurtosis	3.730784	45.74949	199.1913	121.2692	165.5665
Jarque-Bera	209.2112	136.600	270.5412	993.3543	185.1354
Probability	0.067100	0.049910	0.016200	0.015900	0.009120
Sum	1955.173	7669.087	877.8433	445.1400	410.2181
Sum Sq. Dev.	2990.909	179754.6	10097.37	1737.128	178.5081
Observations	1660	1660	1660	1660	1660

Bivariate Correlation

	P	BVP	EPS	DIV	LEV
P	1.000000	0.609705	0.420511	0.479213	-0.123043
BVP	0.609705	1.000000	0.686486	0.609143	-0.176671
EPS	0.420511	0.686486	1.000000	0.595774	-0.097360
DIV	0.479213	0.609143	0.595774	1.000000	-0.072409
LEV	-0.123043	-0.176671	-0.097360	-0.072409	1.000000

Stock price approaching Book value and earnings (OLS)

Dependent Variable: P
Method: Panel Least Squares
Date: 06/07/19 Time: 19:50
Sample (adjusted): 2009 2017
Periods included: 9
Cross-sections included: 166
Total panel (balanced) observations: 1494

Variable	Coefficient	Std. Error	t-Statistic	Prob.
P(-1)	0.912712	0.009792	93.20827	0.0000
BVP	0.005350	0.001544	3.465413	0.0005
EPS	0.014068	0.005561	2.529826	0.0115
C	0.222568	0.013532	16.44720	0.0000

R-squared	0.909790	Mean dependent var	1.275502
Adjusted R-squared	0.909608	S.D. dependent var	1.326047
S.E. of regression	0.398679	Akaike info criterion	1.001353
Sum squared resid	236.8278	Schwarz criterion	1.015567
Log likelihood	-744.0104	Hannan-Quinn criter.	1.006649
F-statistic	391.3200	Durbin-Watson stat	1.791570
Prob(F-statistic)	0.078100		

Stock price approaching Book value (OLS)

Dependent Variable: P
Method: Panel Least Squares
Date: 06/07/19 Time: 19:52
Sample (adjusted): 2009 2017
Periods included: 9
Cross-sections included: 166
Total panel (balanced) observations: 1494

Variable	Coefficient	Std. Error	t-Statistic	Prob.
P(-1)	0.912025	0.009806	93.00567	0.0000
BVP	0.007742	0.001223	6.330668	0.0000
C	0.220108	0.013522	16.27814	0.0000

R-squared	0.909403	Mean dependent var	1.275502
Adjusted R-squared	0.909281	S.D. dependent var	1.326047
S.E. of regression	0.399400	Akaike info criterion	1.004300
Sum squared resid	237.8450	Schwarz criterion	1.014961
Log likelihood	-747.2121	Hannan-Quinn criter.	1.008272
F-statistic	426.1300	Durbin-Watson stat	1.800331
Prob(F-statistic)	0.049100		

Stock price approaching Earnings (OLS)

Dependent Variable: P
Method: Panel Least Squares
Date: 06/07/19 Time: 19:53
Sample (adjusted): 2009 2017
Periods included: 9
Cross-sections included: 166
Total panel (balanced) observations: 1494

Variable	Coefficient	Std. Error	t-Statistic	Prob.
P(-1)	0.929632	0.008519	109.1201	0.0000
EPS	0.025868	0.004413	5.861718	0.0000
C	0.222355	0.013582	16.37137	0.0000

R-squared	0.909063	Mean dependent var	1.275502
Adjusted R-squared	0.908941	S.D. dependent var	1.326047
S.E. of regression	0.400148	Akaike info criterion	1.008041
Sum squared resid	238.7366	Schwarz criterion	1.018702
Log likelihood	-750.0069	Hannan-Quinn criter.	1.012014
F-statistic	387.1300	Durbin-Watson stat	1.814594
Prob(F-statistic)	0.015300		

pooled OLS regression

Dependent Variable: P
Method: Panel Least Squares
Date: 06/07/19 Time: 19:55
Sample (adjusted): 2009 2017
Periods included: 9
Cross-sections included: 166
Total panel (balanced) observations: 1494

Variable	Coefficient	Std. Error	t-Statistic	Prob.
P(-1)	0.913486	0.010007	91.28797	0.0000
BVP	0.005064	0.001590	3.184607	0.0015
EPS	0.015420	0.005863	2.630089	0.0086
DIV	-0.005860	0.013090	-0.447646	0.6545
LEV	-0.066870	0.031879	-2.097592	0.0361
C	0.240466	0.016221	14.82458	0.0000

R-squared	0.910072	Mean dependent var	1.275502
Adjusted R-squared	0.909770	S.D. dependent var	1.326047
S.E. of regression	0.398322	Akaike info criterion	1.000896
Sum squared resid	236.0868	Schwarz criterion	1.022218
Log likelihood	-741.6696	Hannan-Quinn criter.	1.008841
F-statistic	342.7600	Durbin-Watson stat	1.811697
Prob(F-statistic)	0.061700		

Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	20.278623	4	0.0010

Fixed effect test

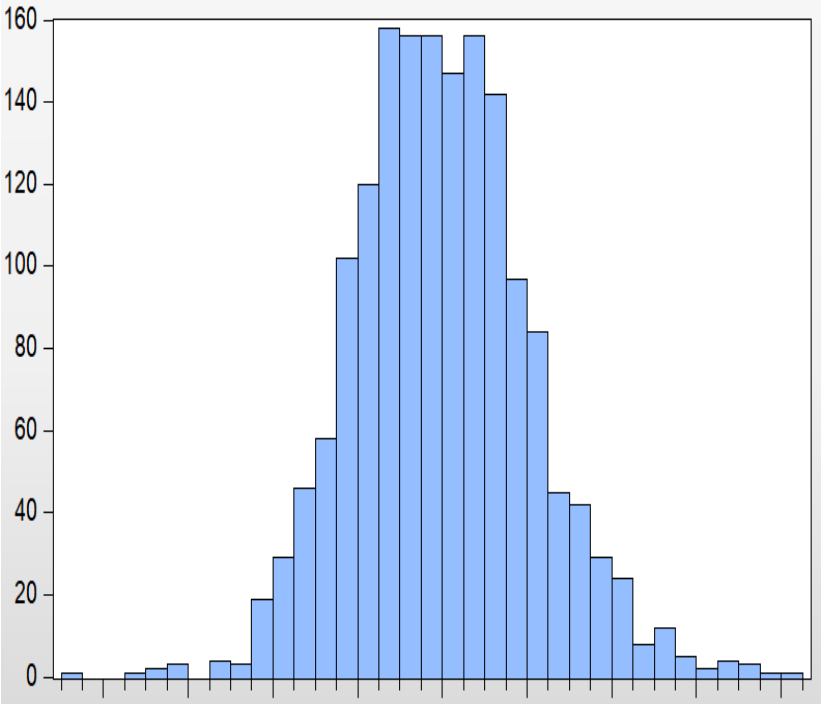
Dependent Variable: P
Method: Panel Least Squares
Date: 06/07/19 Time: 19:56
Sample (adjusted): 2009 2017
Periods included: 9
Cross-sections included: 166
Total panel (balanced) observations: 1494

Variable	Coefficient	Std. Error	t-Statistic	Prob.
P(-1)	0.5725170	0.018462	31.01074	0.0000
BVP	0.0050220	0.004213	3.694609	0.0005
EPS	0.0151604	0.007936	3.013735	0.0020
DIV	-0.005812	0.014739	-0.513810	0.6080
LEV	-0.066432	0.054971	-2.403600	0.0161
C	0.5891061	0.026497	0.4004609	0.0000

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.910105	Mean dependent var	1.275502
Adjusted R-squared	0.900280	S.D. dependent var	1.326047
S.E. of regression	0.347616	Akaike info criterion	0.831922
Sum squared resid	159.8669	Schwarz criterion	1.439603
Log likelihood	-450.4455	Hannan-Quinn criter.	1.058350
F-statistic	83.72021	Durbin-Watson stat	1.837951
Prob(F-statistic)	0.083100		

Normality test



Series: Standardized Residuals	
Sample 2008 2017	
Observations 1660	
Mean	3.49e
Median	-0.43
Maximum	4.12
Minimum	-4.27
Std Dev.	1.04
Skewness	0.25
Kurtosis	3.64
Jarque-Bera	46.29
Probability	0.067

Unit root test

1- Stock price

Panel unit root test: Summary
Series: P
Date: 04/18/19 Time: 14:00
Sample: 2008 2017
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-28.2006	0.0000	166	1400
Breitung t-stat	0.10667	0.5425	166	1234
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.04899	0.0000	166	1400
ADF - Fisher Chi-square	567.076	0.0000	166	1400
PP - Fisher Chi-square	817.754	0.0000	166	1494

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

2- Book value

Panel unit root test: Summary
Series: BVP
Date: 04/18/19 Time: 14:02
Sample: 2008 2017
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-Sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.96013	0.0000	166	1435
Breitung t-stat	9.53470	1.0000	166	1269
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	2.61206	0.9955	166	1435
ADF - Fisher Chi-square	338.021	0.3982	166	1435
PP - Fisher Chi-square	414.534	0.0014	166	1494

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

3- Earnings

Panel unit root test: Summary
Series: EPS
Date: 04/18/19 Time: 14:03
Sample: 2008 2017
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-30.0446	0.0000	166	1441
Breitung t-stat	5.30722	1.0000	166	1275
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.58875	0.0002	166	1441
ADF - Fisher Chi-square	546.538	0.0000	166	1441
PP - Fisher Chi-square	783.596	0.0000	166	1494

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

4- Dividend

Panel unit root test: Summary
Series: DIV
Date: 04/18/19 Time: 14:04
Sample: 2008 2017
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-98.7751	0.0000	102	879
Breitung t-stat	2.60815	0.9954	102	777
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-8.98653	0.0000	102	879
ADF - Fisher Chi-square	347.493	0.0000	102	879
PP - Fisher Chi-square	457.407	0.0000	102	918

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

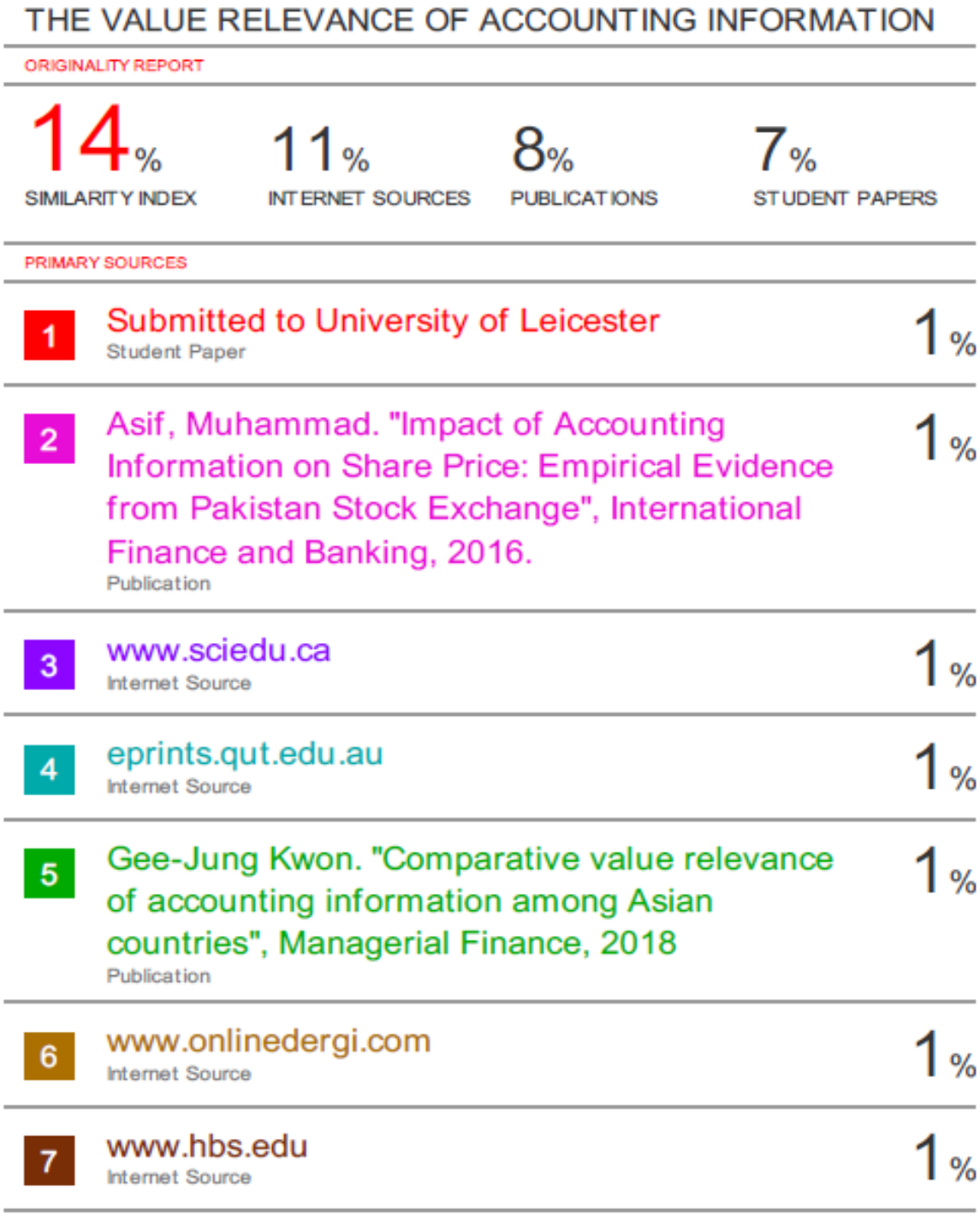
5- Leverage

Panel unit root test: Summary
Series: LEV
Date: 04/18/19 Time: 14:06
Sample: 2008 2017
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-583.113	0.0000	162	1395
Breitung t-stat	1.99562	0.9770	162	1233
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-55.3699	0.0000	162	1395
ADF - Fisher Chi-square	531.176	0.0000	162	1395
PP - Fisher Chi-square	621.132	0.0000	162	1458

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

PLAGIARISM REPORT



THE VALUE RELEVANCE OF ACCOUNTING INFORMATION

ORIGINALITY REPORT

14%	11%	8%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to University of Leicester Student Paper	1%
2	Asif, Muhammad. "Impact of Accounting Information on Share Price: Empirical Evidence from Pakistan Stock Exchange", International Finance and Banking, 2016. Publication	1%
3	www.sciedu.ca Internet Source	1%
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5	Gee-Jung Kwon. "Comparative value relevance of accounting information among Asian countries", Managerial Finance, 2018 Publication	1%
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ETHICS COMMITEE APPROVAL

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

14.05.2019

Dear Abdalrahman Othman Karim

Your project **"The Value Relevance of Accounting Information Within Turkey "** has been evaluated. Since only secondary data will be used the project it does not need to go through the ethics committee. You can start your research on the condition that you will use only secondary data.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Direnc Kanol

Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.