



**IMPACT OF ACCOUNTING AND MACRO-ECONOMIC
INDICATORS ON MARKET VALUE OF FIRMS UNDER
DIFFERENT LEGAL ORIENTATION**

SHOAIB IRSHAD

Ph.D. Thesis

Graduate School

Izmir University of Economics

Izmir

2021

**IMPACT OF ACCOUNTING AND MACRO-ECONOMIC
INDICATORS ON MARKET VALUE OF FIRMS UNDER
DIFFERENT LEGAL ORIENTATION**



SHOAIB IRSHAD

A Thesis Submitted to

The Graduate School of Izmir University of Economics

Ph.D. in Business Administration

Izmir

2021

ABSTRACT

IMPACT OF ACCOUNTING AND MACRO-ECONOMIC INDICATORS ON MARKET VALUE OF FIRMS UNDER DIFFERENT LEGAL ORIENTATION

Irshad, Shoaib

Ph.D. in Business Administration

Advisor: Prof. Dr. Arıkan Tarık Saygılı

July, 2021

This study investigates the impact of accounting variables and macro-economic indicators on the market value of firms of sixteen countries using IFRS, classified under four different legal orientations. We analyzed annual data of share prices along with accounting variables, macro-economic indicators for the period of 2006-2019. We found that accounting and macro-economic indicators explain varying degree of variance in share prices under different legal set ups. Among the accounting variables

earnings per share has more explanatory power in common law countries, whereas book value per share carries more weight in the code law countries. We also found that macro-economic variables enhance the explanatory power of accounting variables in general. The results show that market structure of the countries have significant impact on the share prices. Although the bank-based measure has a negative significant effect in common law countries, it has positive effect in code law countries. On the other hand, market-based measure has positive significant effect in code law countries; it does not have any significant effect in common law countries.

Keywords: Value Relevance, Accounting Variables, Macro-Economic Indicators, Legal Orientation.

ÖZET

FARKLI HUKUK SİSTEMLERİNDE MUHASEBE VE MAKRO-EKONOMİK GÖSTERGELERİN FİRMALARIN PAZAR DEĞERİNE ETKİSİ

Irshad, Shoaib

İşletme Yönetimi Doktora Programı

Tez Danışmanı: Prof. Dr. Arıkan Tarık Saygılı

Temmuz, 2021

Bu makale, muhasebe değişkenlerinin ve makroekonomik göstergelerin, UFRS kullanan ve dört farklı yasal yönelim altında sınıflandırılmış on altı ülkenin firmalarının piyasa değeri üzerindeki etkisini araştırmaktadır. 2006-2019 dönemi için hisse senedi fiyatlarının yıllık verilerini, muhasebe değişkenlerini ve makro-ekonomik göstergeleri analiz ettik. Muhasebe ve makroekonomik göstergelerin, hisse senedi fiyatlarındaki farklı yasal düzenlemeler altında değişen değişkenlik derecelerini açıkladığını gördük. Muhasebe değişkenleri arasında hisse başına kazanç, Anglo-saxon hukuk sistemine sahip ülkelerde daha fazla açıklayıcı güce sahipken, hisse başına düşen defter değeri, kıta avrupası hukuk sistemine sahip ülkelerde daha fazla

ağırlık taşımaktadır. Makro ekonomik değişkenlerin genel olarak muhasebe değişkenlerinin açıklayıcı gücünü arttırdığını da tespit ettik. Sonuçlar, ülkelerin piyasa yapısının hisse fiyatları üzerinde önemli bir etkisi olduğunu göstermektedir. Her ne kadar banka bazlı önlem Anglo-saxon hukuk sistemine sahip ülkelerde olumsuz bir etkiye sahip olsa da, kıta avrupası hukuk sistemine sahip olan ülkelerinde de olumlu etkiye sahiptir. Öte yandan, piyasaya dayalı tedbirlerin Anglo-saxon hukuk sistemine sahip ülkelerde olumlu önemli bir etkisi olmasına rağmen kıta avrupası hukuk sistemine sahip ülkelerde önemli bir etkisi yoktur.

Anahtar Kelimeler: Değer İlişkisi, Muhasebe Değişkenleri, Makro-Ekonomik Göstergeler, Yasal Yönelim.



To ONE AND ONLY

TABLE OF CONTENTS

ABSTRACT.....	iii
ÖZET.....	v
ACKNOWLEDGMENTS	viii
LIST OF TABLES	xi
LIST OF FIGURES:	xii
LIST OF EQUATIONS	xiii
LIST OF ABBREVIATIONS	xiv
CHAPTER 1: INTRODUCTION	1
CHAPTER 2: LITERATURE REVIEW	9
2.1. <i>Historical Background of legal origins:</i>	17
2.1.1. <i>Common Law:</i>	18
2.1.2. <i>Code Law:</i>	18
2.1.3. <i>French Law:</i>	19
2.1.4. <i>German Law:</i>	19
2.1.5. <i>Scandinavian Law:</i>	19
2.2. <i>Legal Origin Theory:</i>	20
2.2.1. <i>Shareholder’s protection and legal orientation:</i>	21
2.2.2. <i>Law Enforcement:</i>	23
2.2.3. <i>Economic Consequences of legal Origins:</i>	23
2.3. <i>Theory of value relevance</i>	24
2.3.1. <i>Types of value relevance studies</i>	26
2.3.2. <i>Difference between measurement approach and information content approach of value relevance</i>	27
2.3.3. <i>Difference between fundamental analysis and value relevance</i>	28
2.4. <i>Accounting Quality and Value Relevance:</i>	28

2.4.1.	<i>Measurement of Financial statements transparency</i>	30
2.4.2.	<i>Cost of transparent financial reporting</i>	32
2.5.	<i>Role of Market efficiency in the Value Relevance</i>	33
2.6.	<i>Ohlson Model</i>	34
2.7.	<i>Effect of Management discretion on the utility of accounting numbers</i>	35
2.8.	<i>Alignment of Tax and Financial accounting</i>	36
2.9.	<i>Hypothesis Development</i>	36
CHAPTER 3:	RESEARCH DESIGN	38
3.1.	<i>Data and Methodology</i>	38
3.2.	<i>Theoretical Foundations of pooled Regression:</i>	43
3.3.	<i>Model</i>	45
3.4.	<i>Price Levels Vs Return Levels Regression</i>	46
3.5.	<i>Econometric issues and their remedies</i>	46
CHAPTER 4:	RESULTS	48
CHAPTER 5:	CONCLUSION.....	68
5.1.	<i>Concluding Remarks</i>	68
5.2.	<i>Implications of the Study:</i>	71
5.2.1.	<i>Managerial Implications:</i>	71
5.2.2.	<i>Implications for the shareholders:</i>	72
5.2.3.	<i>Implications for the financial institutions:</i>	73
5.3.	<i>Limitations of the Study:</i>	74
REFERENCES	75
APPENDICES	83
CURRICULUM VITAE	104

LIST OF TABLES

Table 1. List of Developed Countries.....	39
Table 2. Classification of countries according to Legal Origin	41
Table 3. Break down of sample data according to legal structure	42
Table 4. List of Variables.....	43
Table 5. Descriptive Statistics of CL Group	49
Table 6. Descriptive Statistics of FL Group.....	49
Table 7. Descriptive Statistics of GL Group.....	50
Table 8. Descriptive Statistics of SCL Group.....	51
Table 9. Descriptive Statistics of Market Based Countries.....	51
Table 10. Descriptive Statistics of Bank Based Countries.....	52
Table 11. Classification of countries according to the Market structure	53
Table 12. Break down of sample data according to Financial Structure	54
Table 13. Pooled Stepwise Regression Results.....	55
Table 14. Results for different legal origins.....	57
Table 15. Inside Analysis of Common Law Group	59
Table 16. Inside Analysis of French Law Group	60
Table 17. Inside Analysis of German Law Group	61
Table 18. Inside Analysis of Scandinavian Law Group.....	61
Table 19. Results for different financial structure	62
Table 20. Results for Top and Bottom 25% of MCDC and BCP	64

LIST OF FIGURES

Figure 1. Legal origin distribution of countries around the globe 40



LIST OF EQUATIONS

Equation 1. Theoretical Foundations of pooled Regression	44
Equation 2. Pooled OLS Stipulations	44
Equation 3. Pooled estimations with N cross-sections and T observations	44
Equation 4. Unbalanced Pooled Regression	45
Equation 5. Basic Ohlson Model	45
Equation 6. Ohlson Model with Macro-economic indicators	45
Equation 7. Extended Ohlson Model	45
Equation 8. Full linear Ohlson Model.....	46

LIST OF ABBREVIATIONS

IFRS: International Financial Reporting Standards

IASB: International Accounting Standard Board

CL: Common Law

FL: French Origin Code Law

GL: German Origin Code Law

SCL: Scandinavian Origin Code Law

GAAP: Generally Accepted Accounting Principals

MCDC: Market Capitalization of Domestic Companies.

BCP: Bank Credit provided to Private sector.

OCP: Other Credit (excluding banks) provided to Private sector.

EPS: Earnings Per Share

BVPS: Book Value of equity Per share

CHAPTER 1: INTRODUCTION

Determinants of share prices and returns have extensively been analyzed in earlier research. Capital market research is one of the leading areas of interest for the researchers in accounting and finance. Capital markets are subject to both systematic and unsystematic risk. Systematic risk is common to all securities e.g., macro-economic indicators and unsystematic risk is the exposure to the specific risk factors privy to each security. In order to calculate the market value of security, analysts and investors discount the exposure to both inherent and residual risk. Inherent risk embedded in these exogenous factors changes the risk perceptions and overall investment opportunities for investors which affect the market value of firms.

Linear relationship of accounting variables with the share prices is evident from the Ohlson Model (1995) and its subsequent modifications. However, macro-economic forces are normally considered as the exogenous factors to which the firm is exposed to. Since the overall economic outlook of a country (captured by the macro-economic indicators) also affect the perceptions or the investments decisions of the investors, which invariably affects the stock prices of the firm. The impact of the macroeconomic indicators on the market value of firm is well diversified and researched topic in the finance theory.

Macro-economic variables represent the systematic state variables risk which cannot be diversified. The arbitrage pricing theory, put forward by Ross (1976) in response to CAPM, is a multifactor asset pricing model in which we can price the securities with the help of linear relationship between the security's expected return and number of macroeconomic indicators capturing the systematic risk. Its linear k -factor model under the assumption of no arbitrage implies the existence of a linear pricing rule which can be used to value securities. The k factors are assumed to capture systematic risk and unsystematic risk.

The valuations, fair price estimates always seem to fetch the interest of researchers and analysts. The underlying economics of valuing and identifying the determinants of share prices revolves around estimating the risk factors which would impact the share prices. The extant literature has divided these factors into two categories.

1. Unsystematic Factors.

These are also called firm specific factors because each firm is prone to their specific factors which affects their market value. The risk of these factors only impacts the share prices of that particular firm.

2. Systematic Factors.

These are more generic factors which are out of the scope of firm. These factors are at the level of macro-economic or at the industrial or institutional level. These are different from the unsystematic factors in a way that their effect can impact the market value of firms of entire industry or stock exchange i.e. all the firms are equally subject to the risk of these factors. Normally these factors are influenced by the government policies.

Value relevance research is often motivated by the desire to provide the information on the usefulness, relevance and reliability of accounting numbers. Although relevance and reliability of the financial statements have been defined in the accounting standards but there is no agreed upon description of what constitutes the usefulness of financial statements or accounting numbers. Generally, the term “usefulness of accounting numbers” imply its contribution to the users of financial statements users in making better informed decisions. However, behavioural finance does suggest that the rationality of financial statement users or stakeholders cannot be guaranteed even after they are provided with the all the relevant reliable financial information.

This study intends to investigate the impact of both unsystematic (firm specific) and systematic factors on the market value of firms of countries with different legal orientation. Since, the impact on market value of equity is the primary research question so, share prices is preferred over share returns. The firm specific factors are the accounting information variables taken from the income statement (Earnings per share) and balance sheet (Book value of equity). These association of these accounting variables with the market value of firms has been routinely checked in the accounting literature. The phenomenon is commonly termed as “value relevance” of accounting variables. It is of paramount importance to explore the marginal effect of these institutional factors like the legal orientation and market structure on the value relevance of accounting numbers produced under the single set of accounting standard since 2005. This helps to identify the exogeneous sources of changes not only in

market value of firms but also helps understanding the dynamics associated with the change.

Value relevance is accepted as the joint test of relevance and reliability of accounting numbers (Barth, Beaver, and Landsman, 2001). It is also the proxy of information content of the accounting variables. The association between the accounting numbers and the market value of firm tells how reliably the accounting information reflects the underlying economics of an event, it purports to represent. This helps the investors in making useful decisions regarding their investment in firms. Value relevance is defined in the accounting literature as the association between accounting numbers and market value of firm or returns (Barth, et.al, 2014; Yip and Young, 2012).

The main objective of the IASB is to develop, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require high quality, transparent, reliable and relevant information in financial statements. Referring to the mission statement of the IFRS, on its website, it is stated as

“Our mission is to develop IFRS Standards that bring transparency, accountability and efficiency to financial markets around the world. Our work serves the public interest by fostering trust, growth and long-term financial stability in the global economy.

IFRS Standards bring transparency by enhancing the international comparability and quality of financial information, enabling investors and other market participants to make informed economic decisions”.

Similarly, As reported in the conceptual framework of IFRS,

“If financial information is to be useful, it must be relevant (i.e., must have predictive value and confirmatory value, based on the nature or magnitude, or both, of the item to which the information relates in the context of an individual entity’s financial report) and faithfully represents what it purports to represent (i.e., information must be complete, neutral and free from error)”

Generally accounting quality is either symbolized by the qualitative characteristics outlined by the Conceptual Framework of IFRS e.g. relevance, reliability, usefulness, true and fair view, disclosures etc. or financial reporting proxies such as greater value relevance, lower cost of capital, better earnings management and more timely loss recognition (Barth et al., 2008; Morais and Curto, 2009) but many authors also insisted that accounting quality is not determined only by financial reporting proxies. There are other external factors as well which directly impact the quality of accounting e.g.,

the incentives to exploit the flexibility offered by the multiple choices within the accounting standard, political system, enforcement mechanisms, corporate governance practices etc. (La Porta et al., 2000; Soderstrom and Sun, 2007).

For the smooth functionality of economy, both stock market and financial institutions need to complement each other. However, there are certain institutional factors that help to push the scale and one's favour. These factors range from the legal framework, ease of raising capital, protection of stakeholders vested interests, strength of banking institutions to other institutional and policy settings.

For any country, the choice of a specific market structure depends on the existing financial and legal system and on the firms preferred way of raising capital (Chakraborty and Ray, 2006). Linking the financial structure with the information asymmetries, Holmstrom and Tirole (1997) stated that bank based financial structure is preferred in face of information asymmetries arising between lenders and borrowers. Countries that are under the influence of common law tend to have market based financial system since common law is more protective of shareholders rights as compared to the code law.

This study, in the aforementioned context, investigates the association between the accounting numbers, macro-economic indicators and the market value of firms in developed countries that have adopted International Financial Reporting Standards (IFRS) since 2005. This study conducts the comparative analysis of value relevance of developed markets to develop an understanding of the reasons why accounting numbers in one country are more value relevant (Higher R^2) than the other countries although the accounting information in all these countries is produced under the same set of accounting standards (IFRS). Does their economic system (Bank based vs Market based) or legal framework (Code Law vs Common Law) have an impact on the value relevance of accounting information? What is the marginal impact of introducing non-accounting variables (macro-economic indicators and market structure proxies) in modified linear (Ohlson, 1995) model on the value relevance of accounting information?

The restriction of considering just the developed economies is because these are comparable with each other. Mixing them with the emerging markets will distort the comparable relationship. Although emerging and developing economies could be

included in the sample but the well noticed governance issues, corruption, political influence, weak and extremely volatile economies of the emerging markets was considered as the hindrance in drawing any consequential inferences from the results. That is why I have focused solely on developed economies, as, the results from their analysis can be generalized to other economies. Among all the developed countries, any country who has not fully submitted its consent to adopting IFRS or countries whose year of adoption does not start from 2005 are excluded from the sample.

The basic regression framework, to measure the magnitude of association of accounting (EPS, BVPS) and non-accounting variables (Macro-economic indicators) with the market value of firms, is a variant of the model popularized by Ohlson (1995). The motivation for introducing both accounting and non-accounting (macro-economic) variables is to detect the exposure of securities' pricing to the systematic and unsystematic risk. The classification of countries under different legal orientation helps to understand if the difference in legal set up affects the securities' exposure to firm specific (accounting information variables) and macro-economic indicators (undiversifiable risk), to which whole of the market is subject to, differently.

Ball (2001) argues that choice of accounting standard is not only influenced by the firm's specifics but also by the country level institutional factors. This argument motivated me to explore the role of country level economic factors on the effect of value relevance of accounting numbers in different legal orientations. Thus, the aim is to understand the specific characteristics of each legal identity and market structure that effects the association between accounting and non-accounting information with the market value of the firms.

In order to structure the value relevance test, researchers use various kind of valuation models with share price taken as the valuation benchmark. Normally it is trade-off between share prices and share returns. Prices are used in association studies where the significance and magnitude of association between the accounting information variable and market value of equity is measured. The market efficiency is not the necessary condition in this approach as the share prices are supposed to already reflect the accumulative beliefs of the investors.

The multi-fold purpose of this study can be listed as follows:

- 1- Examine the value relevance of the income statement (EPS) and balance sheet (BVPS) numbers,
- 2- Compare the value relevance of the accounting numbers using the linear dynamics of the Ohlson (1995) valuation model for the developed economies.
- 3- Check and compare the explanatory power (R square) of accounting numbers and non-accounting numbers for countries classified under different legal orientation.
- 4- Check and investigate the marginal impact of macro-economic variables (in a modified Ohlson Model) on the market value of firms.

This study classifies the developed economies (as specified by the MSCI world index) with respect to their legal origin and market orientation and then compares the value relevance of accounting numbers of these developed economies in the framework of basic Ohlson (1995) model and the modified Ohlson model where the impact of non-accounting information (macro-economic variables) on the market value of firms is also analysed. Price levels regressions are used for comparing the R squares of these countries. Barth, Landsman, and Lang (2008) interpret higher explanatory power as the evidence of more value relevance.

The data for the registered companies in these developed countries has been downloaded from the Thompson and Reuters Eikon data base. Annual data has been taken for all the indicators and variables. Accounting information variables are Earnings per share (EPS) and Book value of Equity (BVPS). Market capitalization of domestic companies (MCDC) and domestic credit provided by the banking sector (BCP) are proxies for the market structure. Gross Domestic Product (GDP growth annual in percentage) and trade (Percentage of GDP) are the other macro-economic indicators in the study.

Legal classification of the countries has been borrowed from the La Porta et al. (1998) and the countries are divided into four legal orientation which are Common Law, French Law, German Law and Scandinavian Law. Furthermore, the sample data has also been classified according to the market structure of these countries. The detailed classification and cross between the legal and market structure have been discussed and depicted in data and methodology section.

Developed countries have mature capital markets and financial institutions. Investors, stakeholders, and firms, however, prefer mode of financial structure based on the ease of accessing finance along with other legal and institutional factors. Before the financial crisis of 2008, no one system was particularly favourable. The research on the subject matter, post global financial crisis, found the support for the market based economic structure because the financial crisis and mortgage crisis was economically most severe in bank-based market structures (Langfeld and Pagano, 2016).

The multi-dimensional contribution of this comprehensive study can be summarized as follows. First, it tries to highlight the sources of changes in the explained variance in price level regressions formulated under basic Ohlson framework. Second, it examines how the value relevance of accounting and non-accounting information differs for countries with different legal framework. Third, this study takes into account the market structure of the countries and evaluates its marginal impact on the relevance of accounting number. Lastly, it extends the Ohlson model by including the macroeconomic indicators, market structure proxies and accounting numbers and calculates the value relevance using the updated and recent data of 16 developed countries and generates useful implication by conducting the comparative analysis on the basis of difference in their market and legal structure.

Value relevance is primarily investigated through academic research. Its lack of reference to the non-academic constituents are often highlighted. Few studies have been conducted to address its utility to non-academic audience. Barth, Beaver, and Landsman (1996) is one such study whose findings can be related to broader audience comprising of both academic and non-academic constituents. They evaluated the relevance of fair value estimates of financial instruments. The implications of this study are of equally interest to both academic research and for bank managers, trade analysts and financial institution regulators.

From this comparative analysis among developed countries under various legal frameworks, we expect our findings to be:

- 1- Diverse and informative in terms of IFRS implementation among the countries under different legal structures
- 2- Countries under the common law are expected to be more powerful in terms of protection rights of shareholders.

- 3- The comparative analysis will give us new explanations and insights of the market structure mechanisms operating under same accounting standard.
- 4- Various political, cultural, and economic implications are expected with respect to agency conflicts, financial information transparency and disclosures.
- 5- Understanding the role of institutional and firm level factors in improving the transparency and relevancy of accounting numbers.
- 6- Implications regarding the implementation of international accounting standard and unified financial reporting system across the globe.

The research implications of measuring the association of accounting variables with the market value of security are of interest to various stakeholders like standard setters, firm managers, policy makers, regulators and users of financial statements including institutional investors and other stakeholders (Barth, Beaver, and Landsman, 2001).

The rest of the thesis is structured as follows. Chapter two comprises of literature review and hypothesis development, chapter three is about research design, chapter four discusses the results and chapter five concludes the arguments.

CHAPTER 2: LITERATURE REVIEW

Accounting has been the backbone of the financial world since centuries. Ever since the Luca Pacioli introduced the double entry system in 15th century, accounting has been the basis of every transaction for recording, summarizing, reporting and analyzing purposes. With the development of financial world, it was modified enough. New branches of social sciences like Finance and Behavioural economics came into being as well. In the early 20th century, the research on accounting was mainly normative rather than empirical and the focus was to develop the accounting theory in response to the ever-increasing reservations on the usefulness of accounting numbers and statements in the changing economies and financial worlds. 1960 saw the shift in the mind set of accounting researchers with many landmark studies or modern classics produced in the 60's. It is considered as the golden decade for the accounting and finance research.

The breakthrough research in the 60's was the publication of (Ball and Brown, 1968) and (Beaver, 1968). Ball and Brown (1968) conducted an association study to show the world the usefulness of accounting income numbers. This was a remarkable contribution to the literature of value relevance as the accounting statements were in constant pressure to prove their worth to the investors and standard setters.

Shortly after this landmark research, Beaver also published a paper in 1968 titled "The information content of the annual earnings announcements" in which he showed that trading volume and return volatility increase at the time of the earning announcements. This result synchronized with the findings of Ball and Brown who also showed that the earnings possess information content and are relevant to the investors to make the informed decisions. These two publications together opened the new research paradigm of accounting, where value relevance of accounting variables was tested in different settings and for different countries.

Barth, Beaver, and Landsman (2001) penned the detailed contribution of this field in their response to (Holthausen, and Watts, 2001). According to Barth, equity investment is one of the primary purposes of the standard setter. Although the financial statements appeal to number of stakeholders, but accounting information is most frequently used by the stock market participants (Ball, Kothari, and Shanken, 1995).

One of the main objectives of the financial reporting is to assist the shareholders and creditors in making suitable investment decisions by giving them useful and timely information (Lev and Ohlson, 1982).

La Porta, Lopez-de-Silanes, and Shleifer, (2013) summarized the literary impact of their seminal paper “Law and Finance” in 1998 and how has it shaped the literature in law and finance. The empirical investigations it triggered and further evidence and critique brought forward by other researchers. According to them, it can be fairly established that economic outcomes are highly correlated with the rules and regulations of a specific country i.e., legal orientation effects the economic sustainability of a country by affecting the investors’ flow through the specific provisions of the securities, property, and bankruptcy law. They are also presented the evidence supported by the research that legal orientation help shape the financial structure of a country.

Altinbas and Biskin, (2015) using selected sequential forward algorithms on the lagged index values of the Borsa Istanbul Stock exchange, found that selected macro-economic indicators influence the flow of the capital markets. The indicators in their study were exchange rate, industrial production index, interest rate along with oil and gold prices. Their results showed that the lagged index values are able to forecast the future index values.

Wafi, Hassan, and Mabrouk, (2015) reviewed the valuation models beginning from the dividend discount model to all the way to residual income model also known as Ohlson Model. By reviewing the empirical implication surrounding these valuation models, authors concluded that all models lack a degree of accuracy in predicting the market value. This lack of accuracy in prediction or valuation was termed due to the unrealistic assumption about the condition of the market and algorithms of the valuation. The biggest hurdle was to permit the efficiency of Market.

According to the results summarized by Wafi, Hassan, and Mabrouk, (2015), Residual income valuation model presented by Ohlson in 1995 and subsequently modified in 1997 and 1998 is the most practical and accurate model, providing credibility to both emerging and developed markets, to ascertain the link between the market value and accounting variables. Another distinguished feature of this model is that it does not require the assumption of market efficiency.

Easterly and Levine, (2016) explored the origins of the economic growth and development in the Europe. They constructed a novel database to establish the link between the fraction of European population during the times of colonization with the economic progress today. They found the significant positive correlation between the two using the updated income per capita as a proxy for the economic growth.

Cornell, Landsman, and Stubben, (2017) explored the relation between the sentiment-based mispricing of the securities and the accounting quality. Their findings indicate that accounting quality of higher standards diminishes the mispricing of securities due to the sentiments. They used the analysts' recommendations as a tool to evaluate the effect of investors' sentiment on the market value of firm.

Higher the sentiment of the investors, more favorable recommendations are given by the technical analysis valuing the companies making them overpriced. However, companies whose true value is difficult to ascertain and whose accounting information quality is of lower standard are more prone to fall for the mispricing due to the variability in investors sentiments.

Aabo, Pantzalis, and Park, (2017) using the absolute idiosyncratic volatility probed the implications of market efficiency for the firm specific return variations. They found the correlation between the mispriced security and residual variance of the asset pricing model, positive and robust. They also quote some mixed results found in the literature in this regard.

Barth (2018) offered some valuable insights regarding improving the quality of financial reporting. Few recommendations and their implications were offered. Improving the standard of financial reporting, following implications, supported by the literature, were mentioned,

- Fair value measurement facilitates investors in assessing the value of intangible assets.
- Provide accurate information about the risks.
- Presents unbiased financial position of the company.
- Avoiding earnings management.
- Fulfilling the demand of timely information

Barth and Landsman (2018) studied the fair value accounting and its role in valuation of firm. It was shown how using the fair value accounting provides information about the volatility in the stocks prices and account for the adjustment in expected cash flows. In context of making informed economic decisions, this ability of fair value accounting is of critical importance.

Ferreira et al. (2019) empirically tested the relevance and reliability of the fair values as reported by the private equity funds. They found the consistence in the these reported fair values and the pricing of securities by the capital market. Furthermore, the evidence in their paper suggest that fund managers exercised their discretion while considering the investee valuation reliable.

Bhatia, and Mulenga (2019) studied the empirical evidence concerning value relevance across continents. The findings suggest that empirical investigation of value relevance increased after the adoption of IFRS in 2005. They summarized the findings of ninety research papers covering from 1993 to 2016. These research papers contained single country, multi country analysis. The findings of this review literature were inconclusive. Though the results indicated that majority of the research published in between this time duration supported that accounting information is relevant. After adopting the single accounting standard, its value relevance has been increased. Few notable exceptions who found the decrease in the value relevance of accounting information were also mentioned.

Mirza, Malek, and Abdul-Hamid (2019) presented the value relevance evidence from a developing country's perspective, Malaysia. They employed Ohlson model to determine the value relevance of financial information. The used the accounting variables from each of the balance sheet, income statement and cash flow statement and found that cash flows from operating activities is increasingly significant in the Malaysian capital market. Literature though overwhelmingly supports the association and significance of earnings indicator in link with the capital markets.

Kamarudin, Ariff, and Jaafar, (2020) used 42,808 annual observations of thirty-two countries to investigate the impact of cross listing in USA and how it impacts the accounting quality and investors protection. Their results indicate that cross listing of firms in USA significantly increased the value relevance of accounting numbers. The results also specify that USA market exhibit timely disclosure of losses and lower

tendency of earnings management or income smoothing. This employs that the investor protection in the legal and financial structure in the home country plays an important part in improving the accounting quality and value relevance of accounting indicators of cross listed firms.

Eugster and Wagner, (2020) provided with very useful and practical implications of the value reporting by the Swiss firms. They took 10-year panel data of Swiss firms and stated that by making the process of value reporting transparent and clear not only serves the best interests of investors but also of the managers. The results indicated firms who are engaged in the better and fair value reporting process, make better operational decisions.

Engaging transparently in the process of value generation and integrated reporting, improves the understanding of the management regarding the process and helps them come up with the better solution and effective processes which generates greater operational consistency and revenues. This also increases the trust of the investors, creditors, and other stakeholders which firm capitalizes in its favor.

Adwan, Alhaj-Ismail, and Girardone, (2020) studied how the fair value accounting and the value relevance of European firms is affected during the crises. By taking the firm year observations from 2005 to 2011 they found that during the crises book value of equity becomes more relevant. However, firms using the fair value accounting system are less affected. Their findings support the existing literature in this regard.

Liao, Kang, and Morris (2021) compared the historical cost and fair value measurement system of accounting during the global financial crises of 2008 and 2009. Their sample consisted of twenty-five European countries and found that fair value system generates comparatively more value relevant accounting information than the historical cost system during the crises. This indicate that in financial distress, investors prefer using fair value accounting.

Barth, Israeli, and Sridharan (2019) tested the hypothesis that book value of equity should not exceed the market value of equity while the firm uses conservative accounting principles. Having book value of equity market ratios greater than one significantly changes the risks parameters. Moreover, use of conservative accounting also comes into question when the greater than one book to market ratios are pervasive

and consistent. These findings imply that higher ratio refer to the overstated book value of equity.

Kothari (2001) detailed the contribution of capital markets in the discipline of accounting research. According to him, the relationship between the capital markets and the financial statements revolves around the

- Test of market efficiency,
- Firm Valuation,
- Fundamental analysis,
- Role of accounting in the political processes,
- Contracts and their impact on the balance sheet and income statement numbers, and
- Value relevance of financial statements (Accounting Numbers).

According to Kothari, the capital market research in relation to accounting provides useful implications for the

- Financial standard setters,
- Financial information disclosure decisions, and
- Investors in making relevant and useful capital market decisions.

However, capital markets are subject to both systematic and unsystematic risk. Systematic risk is common to all securities e.g., macro-economic indicators and unsystematic risk is the exposure to the specific risk factors privy to each security. In order to calculate the market value of security, analysts and investors discount the exposure to both inherent and residual risk. Inherent risk embedded in these exogenous factors changes the risk perceptions and overall investment opportunities for investors which affect the market value of firms.

Linear relationship of accounting variables with the share prices is evident from the Ohlson Model (1995) and its subsequent modifications. However, macro-economic forces are normally considered as the exogenous factors to which the firm is exposed to. Since the overall economic outlook of a country (captured by the macro-economic indicators) also affect the perceptions or the investments decisions of the investors, which invariably affects the stock prices of the firm. The impact of the macroeconomic

indicators on the market value of firm is well diversified and researched topic in the finance theory.

Macro-economic variables correspond to the systematic state variables risk which cannot be diversified. The arbitrage pricing theory, given by Ross in 1976 in response to CAPM, is a multifactor asset pricing model in which one can value the securities with the help of linear relationship between the security's expected return and number of macroeconomic indicators capturing the systematic risk. Its linear k -factor model under the assumption of no arbitrage implies the existence of a linear pricing rule which can be used to value securities. The k factors are assumed to capture systematic risk and unsystematic risk.

Rogers (1998) term macroeconomic indicators as statistical gauge to measure the economic condition of a country during a certain period of time. Mohr (2005) also defined macroeconomic indicators as statistics published by the government on a regular basis to reflect the overall economic condition of a country. (Cox, Ingersoll, and Ross, 1985; Merton, 1973) in their respective asset pricing theories, insist that market value of securities depend on their respective exposures to the state variables that describe the economy.

Sellin (2001) tested the role of economic activity in stock prices. He argued that increase in the money supply increases the demand of money. This increased demand in money leads to the increase in economic activity. From a firm perspective, this positive change in economic activity implies higher cash flows causing the stock prices to rise. Chen, Roll, and Ross (1986) investigated the relationship between economic forces and stock market. The purpose was to identify how the capital market reward the exposure of securities towards shock in certain economic forces. They concluded that innovation in certain economic forces expose the stock returns to the systematic risk associated with these state variables.

Market value is priced in accordance with the exposure to these economic indicators and identification of such forces can be done through innate financial theory. Levine and Zervos (1996) also investigated the association between economic growth and stock market. They found that there exists a strong positive correlation between the stock market development and economic growth.

Elbakry et al. (2017) investigated the relevance of accounting and macro-economic variables for UK and Germany before and after they adopted IFRS using basic and extended Ohlson Model and found increased relevance of reported earnings for UK and Germany after their adoption of IFRS. They also added that adding macro-economic variables significantly increased the predictive power of book value of equity in UK and reported earnings in Germany.

Apart from the macro-economic system, other exogenous factors like legal orientation and market structure were also considered in the literature. Soderstrom and Sun (2007) insisted that legal and political structure effect the accounting quality in cross country comparison. This change in accounting quality stemming from different legal and political frameworks effects the relevance of accounting information.

Hung (2000) investigated the relationship of accrual accounting and the value relevance of accounting numbers in 21 countries from 1991 to 1997 with a varying degree of shareholder protection and found that countries with strong shareholder protection mitigate the negative effect of accrual accounting on value relevance of accounting information. This is another implication for the standard setters to incorporate the level of shareholder's rights while formulating the policies for the accrual accounting. Iatridis (2010) found that in case of UK the implementation of IFRS increased the value relevance, timeliness of financial reporting and reduced the earning management practice while comparing the results from UK GAAP. Hence, IFRS overall improved the accounting quality of the UK firms.

Ball, Kothari, and Robin (2000) studied the timeliness and conservatism of accounting earnings in common law and code law countries. They used these two properties as the proxy of financial statement transparency. They concluded that timeliness is less likely to be observed in code law countries due to the closer relationship within the major stakeholders. It allows the greater monitoring and familiarity with the inside information. Therefore, the demand of timeliness is not derived by the demand of general public disclosures in code law countries. However, in common law countries there is greater demand for timely disclosures which mitigate the agency cost associated with the monitoring of managers.

Income conservatism is more profound in code law countries. The delay in recognizing the economic losses increases the monitoring cost in these legal frameworks. That is

why the governance mechanism in code law countries is predominantly designed such that the board comprises of representatives of government and debt and equity market. Therefore, the accounting income in these countries is a pie to be distributed among all these stakeholders. By contrast, in the shareholder's model, mostly observed in the common law, governing body is elected by the shareholders only and hold the majority shareholdings.

La-Porta et al. (1998) argued that common law countries are associated with better corporate governance mechanism, shareholder's protection, and a better-quality financial reporting. Barth et al. (2012) compared the accounting numbers for the IFRS firms of 27 countries with the matched sample of US firms using US GAAP and found that IFRS firms have higher value relevance and greater comparability with their matched sample US firms than when they exercised local GAAP. They also found the higher value relevance comparability for IFRS firms of common law countries.

2.1. Historical Background of legal origins:

The history of legal framework descends from the centuries ago with the England and France as its two primary contributors and as its users. This legal development then expanded and got popularized primarily via the colonization. The style or core of any legal set up is basically derived by the ideology which is usually shaped by the couple of factors which in this case context consisted of

- Religious conceptions,
- Political Diversions
- Social Norms
- Cultural Integration
- Geographical landscapes
- Survival, and
- Economic diversity

These were the primary contributory factors in the development of the legal framework in particular. As England and France were two main economic and military forces around the globe and these are the two countries who were primarily inverted towards colonization of other countries leading to the expansion of their legal ideological set up. This expansion via military tirades or colonization attempts rang through many

countries around the globe at that time and were primary source of information transmission along with the trade, missionary work, and migration. Though civil law is further classified into three main branches (briefly discussed below), but the main point of difference lies between Common law and French law. Scandinavian countries never had any colonies and their influence and individual identity, reflected in their cultural integration and geo-politics, is limited to no further than the Scandinavian origin. Similarly, the German influence which was starting to expand in the early nineteenth century was nullified after the World War one and two. Thus, French and Common Law, are the two most distinctive and practiced legal format around the globe.

2.1.1. Common Law:

Common law also referred as the “law of England” is the courtesy of appellate jury members involved primarily in establishing the plausible legal precedents in the specific legal dispute resolutions. The key feature of the common law in this regard is its independence from the state. It actually came into being as the protector of property and contractual rights for the traders who wanted the least involvement from the crown in their trading business and as it served, crown was happy in minding their own and granting the economic freedom the traders so wishfully wanted. This legal intrusion served well to the British empire in their colonization attempts allowing the economic freedom and growth necessary to facilitate the armed expeditions.

2.1.2. Code Law:

Code law is the earliest legal framework, mankind has known. It is also the most widely spread. Though common law has gained rapid popularity in the last century or so, but the civil law discourse is the first one to impact the lives of millions. Its source of origin is the Roman Law which was adopted by the Roman Empire. As its evolution suggest, it was primarily formulated by the legal scholars to protect the rights of the Roman Empire.

It is a rule based legal framework which was formulated to protect the rights of the Church and empire. Since Roman Empire was spread across the Europe and other continents at that time, majority of the countries adopted the code law as their legal framework. With the passage of time, the legal orientation evolved according to the specific individual geo-political and economic interests of the countries. Many

countries transformed or updated the legal provisions in accordance with their local circumstances. This adaptation led to the many versions of the code law. Although they belong to the same family, but little differences allowed the code law to delve into three main variants which are also part of this thesis study.

- French Law
- German law
- Scandinavian Law.

2.1.3. French Law:

French Law is the most identifiable version of Code Law. Majority of the countries around the globe who practice the code law are exercising the French Version of Civil law discourse. This is also because of the greater influence of French revolution and colonization attempts. Majority of the countries in the Africa, Latin America speak French and practices the French Law. French law was initially upgraded during the French revolution in the early 19th century. Napoleon was the primary enforcer of the updated French law version, which used the codes to grant more rights and power to the state. Hence, French law is more comfortable with the greater influence by the state and lesser judiciary independence in regard of the protection of property rights. Currently the countries using the proponents of the French law are greater than the any of other users.

2.1.4. German Law:

German law also has its roots from the Roman law, but the commercial code associated with the German Law was written in 1897 after the unification of Germany. Though it shares the procedural characteristics with the French law however, it allows for the greater judicial independence in law making. In our sample of 16 Countries, only two countries (Germany and Austria) exercise the legal provisions of German law. German law is the second most popular and adopted variant of civil law framework around the globe.

2.1.5. Scandinavian Law:

Scandinavian law is also the proponent of the civil law. However, many legal experts consider it as a distinct legal framework than the French or German law. It is mainly adopted by the Scandinavian countries only who share the very distinct geo-political

history from the rest of the world. Their shared historical and cultural background spanning centuries make them the only prominent users of this legal framework. There are four countries of the Scandinavian legal framework in our study.

2.2.Legal Origin Theory:

Common law is considered normally by the legal experts as a set of “dispute resolving mechanisms” whereas code law is usually associated with the “policy implementation framework”. The whole point of legal formalities in the common law set up is to support the sort of social control which supports all the stakeholders in the market specially the individual investors whereas code law is typically associates itself with the “state desired allocations” which allows more control to the state-owned agents and institutions in the legal resolution of proceedings. These fundamental differences among the legal discourse constitutes the legal origin theory.

The historical comparative analysis of these legal frameworks suggest that common law is more respectful of the individual property rights and contractual obligations as compared to civil law. The prevailing social sense in case of the common law exaggerates its ability to engage freely on the issue of social justice. This makes the public trust their judicial system. Furthermore, when the state’s influence is restricted in the judicial proceedings, it shows the profound respect for the jurisprudence as a source of law. This adaptability in the common law has been duly noted by the concerned investors and researchers alike.

This, however, is not the case with the origins of the civil law. Civil law approaches the crises with the mentality of enforcing state mandate. For example, in case of the great depression of 20’s and 30’s, common law countries took initiatives to protect the maximum creditors by introducing deposit insurance and security regulations while civil law countries substituted the mechanisms of state-controlled capital allocation. Similarly, securities law in general and disclosure requirements in particular are very stressed are statutory features of the common law. Mostly legal provisions concerned with the protection of the investors’ interests are statutory in common law and judge made in civil law countries.

Common law works in a way which enables the capital market to sustain and prosper by shielding the creditors and investors via extensive financial contracting. Concluding

the arguments for the legal origin theory, further comparative analysis gives the following take-aways,

- Systematic difference exists between different legal orientations.
- The proposition making differences among the legal standards can be empirically tested and measured.
- Implementation and enforcement mechanism differ affecting the market accordingly.
- Social Outcomes and perceptions of investors also rely on the specific implementation and execution of securities, properties and bankruptcy legal structures.

2.2.1. Shareholder's protection and legal orientation:

Regulations that govern and oversee the investor's protection and creditor's rights in any given legal orientation can be classified into

- Corporate law
- Bankruptcy law
- Securities Law

The fundamental purpose of protecting the creditors and minority shareholders' rights is to make these parties willing to provide capital to the firm at the lower cost. This lower cost associated with protecting the shareholder rights come with the implied implication of providing true and fair financial reporting reflecting the true economic identity of the firm. The protection of shareholders and creditors' rights are given paramount importance in assessing the importance of legal framework in the field of law and finance because of its substantial implications for the stakeholders and development of capital market.

Capital markets are understood to respond positively to the provisions of corporate law, Bankruptcy law and securities law designed to accommodate the protection of rights. The reaction of the capital markets in response to these regulations can be summarized as follows:

- Increases the firm value.
- Increases the access to external financing.
- Lowers the cost of financing.

- Reduces Income smoothing
- Improves corporate governance.
- Increases market liquidity.
- Facilitate cross border acquisitions.
- Effects positively the corporate cash holdings.
- Increases the efficiency of capital allocation, and
- Promotes the investor friendly environment.
- Increases the size of debt market.

Among the legal spheres, the discourse across the code or civil law revolves around the greater concentration of government control in these countries. Research and other studies indicate that this situation of concentrated government ownership in the code law countries is usually associated with the:

- Negative sentiment in the market accumulating the adverse effect on the economic development.
- Increased level of corruption in the government ranks
- Higher unemployment level, and
- Greater unregistered economic activities.

This sentiment is reflected in the market due to the presumed and empirically tested association of civil law with the:

- Lower degree of protection available to shareholders and creditors
- Higher concentration of state ownership in banking and other financial institutions.
- Less efficient debt enforcement rules and regulations.

In contrary to civil law, legal provisions of the common law framework differ in terms of:

- Greater judicial independence
- Greater security of property rights
- Better contract enforcement among the legally bound parties, and
- Lesser formalization of judicial framework and procedures.

The evidence suggests that changes happen in the financial development and economic growth in a country in response of the legal calculations for example after the implementation of the European Union's capital market directives, the cost of capital decreased, and market liquidity increased due to the added layer of legal protection.

However, the implementation and enforcement of law is of paramount importance in this case.

In short, this can be summarized as that shareholders and creditors rights, when protected and defended by the law, opens the market to grow and develop. This economic development and growth are reflected in the demand and growth of debt market which positively influences the flow of capital in the country. It also builds the trust of the investors on the financial institutions. That is why the market structure of common law countries is labelled as open and market-based structure. The contractual binding shapes the corporate governance and investment policy.

2.2.2. Law Enforcement:

The efficiency of the contract enforcement between the parties legally bound depends on the legal framework. It is a well-established fact in the law and finance literature that common law leads to the better enforcement of contractual obligations. The law enforcement also depends on the quality of judiciary. In the emerging markets, delayed justice or judicial corruption is a common occurrence. Since all the countries considered for this research are developed, their rank in judicial independence and their maturity of judicial system is also of the higher ranks.

Judiciary needs to be flexible, open minded and less formalistic in order to have a comparative advantage of enforcing contractual obligations and legal standards. Common law is considered more flexible as compared to its contemporary legal frameworks. Primarily it is because common law is based on the principle based which allows more flexibility while the civil law is more of a rule based or coded legal framework. This stringent policy of following the rules or codes makes the civil law considerably less flexible and more formal in their legal proceedings. Moreover, Code law specially the French Law has slower judicial tenure and significantly lesser degree of constitutional acceptance of case law.

2.2.3. Economic Consequences of legal Origins:

From the above discussion, it is certainly clear that legal origins alter the economic consequences. The range of variations in their respective ideology and legal framework makes them separate entities or one of the most influential institutional factors which can disrupt or progress the flow of capital market and overall, all

economic activity of the country. To summarize the differences in a nutshell (based on the results, literature and precedent)

Common law as compared to French Law (These two are the most extreme version of the legal framework, German and Scandinavian falls in between them):

- Provides better opportunities for the financial development,
- Provides greater and easier access to external or debt financing.
- Is much better in protecting the rights of the shareholders and the creditors?
- Favors the market based financial structure.
- Ensure better enforcement of the securities, corporate and bankruptcy law.
- Encourages the less formal, more independent judicial system.

2.3. Theory of value relevance

Value relevance is primarily investigated through academic research. The research implications of measuring the association of accounting variables with the market value of security are of interest to various stakeholders like standard setters, firm managers, policy makers, regulators and users of financial statements which includes financial institutions and investors (Barth, Beaver, and Landsman, 2001). If an accounting number is found to be associated with the share price, then it can be said that it contains the elements of relevance and reliability to some extent. However, it is hard to attribute the lack or absence of value relevance to either one of the traits.

The value relevance is described in the extant literature as the association between the accounting variables and security's market value. This association allows the firm relevant economic information to be reflected in the share prices through these accounting variables. This association can be traced back to the times of Miller and Modigliani but the first study which originates the term "value relevance" is Amir, Haris and Venuti (1993). Now, with the growing popularity of the value relevance in the 90's one of the main implication of the value relevance literature, other than the use for the equity investors, was its use to standard setters but any such hypothesis was met with the sceptical view of Holthausen and Watts (2001) who considered value relevance literature somewhat lacking in the discipline of descriptive accounting theories and their mere statistical association between the accounting numbers and equity valuations doesn't bode well, in their opinion, for inferences or implications for

standard setting. Their want, for specific details of how this value relevance literature overwhelmed with the above-mentioned statistical associations explain or predict the actions of standard setters, was obvious in their review of shortcomings of value relevance literature.

They classified the value relevance studies into three types:

1. Relative association studies:

These studies compare the association of stock price or return with the accounting variable like earnings calculated under a proposed standard and then comparing it with earnings calculated under a different standard. Higher R^2 among the two proposed set of standards is considered more value relevant.

2. Incremental association study:

Incremental association studies explore the extent of explained variance in the stock return or prices by the income statement or balance sheet variables. This explained variance is measured over the long window. The incremental value added is measured through association studies.

3. Marginal information content studies (Event Studies):

Event studies study the association of accounting variable with the stock price or return over a short window in order to find that whether the information content of accounting variable changes the investors perception or not. Changes in investor perception can be measured by variance in the stock prices or return around the release of that information. If there is no change in the variance of stock price or return, then that accounting information/variable is not value relevant.

The highlight of their paper was the limitations of the value relevance literature mainly because of the mere testing the empirical association without properly discussing the underlying descriptive theories of value relevance and standard setting and when there is mentioning of a theory, the valuation models used are deficient.

Value relevance research is often motivated by the desire to provide the information on the usefulness, relevance and reliability of accounting numbers. Although relevance and reliability of the financial statements have been defined in the accounting standards but there is no agreed upon description of what constitutes the usefulness of

financial statements or accounting numbers. Generally, the term “usefulness of accounting numbers” imply its contribution to the users of financial statements users in making better informed decisions. However, behavioural finance does suggest that the rationality of financial statement users or stakeholders cannot be guaranteed even after they are provided with the all the relevant reliable financial information.

The lack of appeal of the value relevance to the non-academic constituents are often highlighted. Few studies have been conducted to address its utility to non-academic audience. Barth, Beaver, and Landsman (1996) is one such study whose findings can be related to broader audience comprising of both academic and non-academic constituents. They evaluated the relevance of fair value estimates of financial instruments. The implications of this study are of equally interest to both academic research and for bank managers, trade analysts and financial institution regulators.

In order to structure the value relevance test, researchers use various kind of valuation models with share price taken as the valuation benchmark. Normally it is trade-off between share prices and share returns. Prices are used in association studies where the significance and magnitude of association between the accounting information variable and market value of equity is measured. The market efficiency is not the necessary condition in this approach as the share prices are supposed to already reflect the accumulative beliefs of the investors.

2.3.1. Types of value relevance studies

Francis and Schipper (1999) operationalized the value relevance research in following ways.

1. First one being the ability to earn profits on the portfolios formulated by applying accounting-based trading rules. (Harris and Ohlson, 1990) used this construct of value relevance. This version can also be termed as the Fundamental view of value relevance. Any decrease (increase) in the returns of the portfolio formed on the pre-knowledge of accounting information will be deemed as the decrease (increase) in the value relevance.
2. Second measure of the value relevance is the ability of the accounting information to explain the market adjusted returns or market values of equity. Here, decrease (increase) in the ability of accounting numbers to explain the

cross-sectional variation in the security returns or market values of equity will be considered as the decrease (increase) in the value relevance. This is also known as the measurement view of the value relevance.

3. Third approach to measure the value relevance focusses on the predictive power of the accounting variables used in the valuation models. Their better ability to predict the future dividends, earnings or cash flows can be taken as the evidence of their value relevance.
4. Lastly, the information content approach of the accounting variables. This approach was first introduced by Ball and Brown (1968) and Beaver (1968). It captures the information content of the newly released accounting information by measuring the market reaction to it. Generally, event study is the methodology employed to measure the market reaction by creating the short-term time window around the release of accounting information.

Francis and Schipper however, found the decline in the value relevance of income statement information e.g., earnings but increase in the value relevance of Balance sheet information for the sample period of 1952 to 1994 of samples of exchange listed and NASDAQ firms.

2.3.2. Difference between measurement approach and information content approach of value relevance

In this paper, I am exploring the measurement perspective of the value relevance which means value relevance will be determined by the ability of accounting numbers to explain the variance in the market value of equity over a long window. Unlike information content perspective, the timeliness of the accounting information is not a matter of concern. In this perspective, the ability to explain the variance in the share prices is the only meter to gauge the value relevance of accounting variables.

Accounting variables may be value relevant but is not assumed to be the only source of information or the timeliest source of information because the main hypothesis in the measurement perspective of the value relevance is that investors do not use the accounting information directly, rather the accounting numbers reflect the underlying economics of the firms i.e., they are good summary measure of the proceedings incorporated in the market value of equity. In measurement perspective, higher R squares are taken as evidence of higher value relevance.

2.3.3. Difference between fundamental analysis and value relevance

Though both value relevance and fundamental analysis can be attributed with the purpose of estimating firm value but there is a fine difference between them. Equity market prices serves as the benchmark of value relevance literature. Value relevance theory concern itself with the selected variables which appear in the financial statements.

The purpose of concerning itself to these chosen financial/accounting variables is to understand their valuation characteristics. How much the value relevant information in share prices or returns can be attributed to these financial statement variables? In value relevance studies, R square tells us about the proportion of variance explained. The association between accounting variables and share prices or returns is normally expressed in terms of R squares. In multi country settings, the comparison of R squares naturally arises.

However, the fundamental analysis is not limited up to just accounting variables to explain current or predict future market value of firm. The difference between the two approaches lies in between the different specifications of the estimating equations in their respective valuation models. Fundamental analysis is broader than value relevance studies in context that they consider all the information that is helpful in estimating the market value of firm. This information may not necessarily come from just financial statements. Analysts consider other exogenous factors as well that may be useful in reaching the fair price of firm equity. Fair price is represented by the market value.

2.4. Accounting Quality and Value Relevance:

The transparency of the financial statements prepared under IFRS has attracted a lot of attention of the academic and non-academic users of financial statements. Generally, the transparency of financial statements is considered equivalent to the accounting quality. Though, Accounting quality has not been explicitly defined in the literature but there have been some proxies which are implied to represent the accounting quality in its various dimensions (Barth, Landsman, and Lang, 2008) and (Singleton-Green (ICAEW), 2015) give a fair idea of these proxies. While discussing

the accounting quality, it is not only these accounting numbers related proxies that matter, country's own legal structure, law enforcement, corporate governance mechanism and culture of financial institutions are also critical in telling the accounting quality of a particular firm or country (De George, Li, and Shivakumar 2016).

The main objective of the IASB is to develop, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require high quality, transparent, reliable and relevant information in financial statements. Referring to the mission statement of the IFRS, on its website, it is stated as

“Our mission is to develop IFRS Standards that bring transparency, accountability and efficiency to financial markets around the world. Our work serves the public interest by fostering trust, growth, and long-term financial stability in the global economy.

IFRS Standards bring transparency by enhancing the international comparability and quality of financial information, enabling investors and other market participants to make informed economic decisions”.

Similarly, As reported in the conceptual framework of IFRS,

“If financial information is to be useful, it must be relevant (i.e., must have predictive value and confirmatory value, based on the nature or magnitude, or both, of the item to which the information relates in the context of an individual entity's financial report) and faithfully represents what it purports to represent (i.e., information must be complete, neutral and free from error)”.

Generally accounting quality is either symbolized by the qualitative characteristics outlined by the Conceptual Framework of IFRS e.g. relevance, reliability, usefulness, true and fair view, disclosures etc. or financial reporting proxies such as greater value relevance, lower cost of capital, better earnings management and more timely loss recognition (Barth et al., 2008; Morais and Curto, 2009) but many authors also insisted that accounting quality is not determined only by financial reporting proxies. There are other external factors

as well which directly impact the quality of accounting e.g., the incentives to exploit the flexibility offered by the multiple choices within the accounting standard, political system, enforcement mechanisms, corporate governance practices etc. (La-Porta et al., 2000; Soderstrom and Sun, 2007).

Many authors expanded the horizon of accounting quality research with the inclusion of audit fee as a measure of accounting quality (Hribar, Kravet, and Wilson, 2014) and then measuring accounting quality in context of accounting harmonization, firm specific factors and impact of institutional factors (Isidro and Raonic, 2012).

When there are so many different directions and dimensions of the term accounting quality and so many functional and methodology or measurement-based definitions then the accounting literature is right in terms of suggesting that it is very difficult to define and measure the accounting quality due to the vastness of its context (Hribar et al., 2014; Isidro and Raonic, 2012; Morais and Curto, 2009).

2.4.1. Measurement of Financial statements transparency

The accounting literature proposes no standard approach or agreed upon criteria to measure the concept of financial statement transparency. Normally it is implied from the term “Accounting Quality” that financial statements represent true and fair view and provide reliable and relevant information to the investors that reflect the economic reality of the firm.

Singleton-Green (2015) identified three major research areas that can be considered as the empirical evidence of the transparency of financial reporting,

1- Investment analyst forecast:

If the financial statements are transparent, which means that financial statements represent true and fair view of the firm’s economic condition, then it will be easier for the analysts to forecast the future economic growth or value the company. This is to say that the variance or dispersion in analysts’ forecast will decrease due to the increased accuracy in their prediction.

However, this increased accuracy in analysts' forecast can also be the result of the income smoothing or earnings management. Secondly, with the use of fair value accounting, though the transparency of financial statements will increase as fair value represents more accurate market's perception regarding the value of assets and liabilities, the dispersion in the analysts' forecast regarding the valuation of firm or growth of earnings in the future will increase. Historical cost method is although not considered as transparent as fair value accounting, but it certainly helps improve the accuracy of analysts' forecast.

2- Value relevance:

Value relevance has been fairly discussed in the detail in this study. The whole logic behind measuring the association of accounting numbers with the share prices of the company or with the change in the share price of the company is to find out how much the stock prices or change in stock prices are reflective of the underlying economic reality of firm. Greater the extent of this association, greater is the relevance of accounting numbers in making investment decisions.

3- Earnings Management:

While there is no consensus on the definition of earnings quality (Stephen, 2002) but there is fair bit of discussion in the literature for example (Dechow, Sloan, and Sweeney, 1995) define earnings quality in terms of the relation between accruals and cash flows. However, there can be certain external factors that can impact the relationship between accruals and cash flows. McNichols (2002) mentions the uncertainty in the firm's environment and the ability and intention of management to manipulate the accruals as external factors that can have an impact on earning management. Similarly, Stephen (2002) believes that reported earnings are of good quality if they are better able to predict the future earnings.

Though there are many models for detecting the earning management in the literature. (Dechow et al., 1995; McNichols, 2002) summarizes these models for their readers but still there is an ongoing discussion which is the best way to simulate the earnings for example (Stubben, 2010) argues

that revenues models are more suitable for the detection of earning management rather than the more widely used accrual models.

2.4.2. Cost of transparent financial reporting

All the stakeholders (Investors, shareholders, auditors, lending institutions, agents, managers, and standard setters) aspire and require the transparent financial statements. This increases the demand of transparent financial reporting. Among other exogenous factors, this demand is shaped by the market structure, governance mechanism and legal orientation of the countries. This demand, in return, determines the number of resources to devote to the accrual accounting.

One proxy of transparent financial reporting, as we discussed above, is that it represents the true and fair view of the economic condition of firm. In order to financial reporting to be true and fair, one need to figure out how quickly the available information is incorporated in the statements. This characteristic of financial reporting is referred as the timeliness.

However, this demand of timely and transparent financial reporting comes at a cost. This cost in comes in form of developing the institutions to draw the standards and then there is monitoring and enforcement depending on the demand of the transparent financial reporting. Ball, Robin and Sidka (2007) suggests that the cost of transparent and timely financial reporting is at two levels.

- 1- Cost at country level
- 2- Cost at firm level.

Country level costs are derived by the institutional makeup that ensures the preparation, implementation, enforcement, and monitoring of financial reporting. The substantiality of these costs in certain countries where institutions are not matured can compromise the quality of financial reporting. The salient processes that constitute the overall cost at the country level are concerned with:

- Cost of training and developing accounting standard setters,
- Cost associated with the development and training of the audit bodies and the development of detailed audit procedures,

- Monitoring mechanisms,
- Overall education of the discipline of accounting,
- Educating the stakeholders (Investors, brokers, trade analysts, rating agencies, board members and financial institutions).
- Cost of protecting the shareholders' rights,
- Costs of developing the independent judicial setup,
- Cost of developing and maintaining effective regulatory body.

Similarly, the reporting costs are incurred at the firm level as well. At the firm level, these costs are concerned with:

- Accounting accruals,
- Managerial skill sets,
- Conducting audit,
- Preparing the financial statements,
- Practicing conservatism (conditional or unconditional conservatism)
- Full disclosures.

In nutshell, the cost of financial reporting is determined by the:

- Firm level, and
- Country level factors,
- The maturity of financial and legal institutions,
- Overall governance mechanism at the state and firm level,
- Demand of the timely financial reporting,
- Maturity of Capital markets and,
- Institutional and individual investors base.

2.5. Role of Market efficiency in the Value Relevance

Degree of market efficiency is always a topic of interest to standard setters, accountants, trade analysts and lawmakers. The inability to detect the efficiency or inefficiency of market can induce a bias in the interpretation of coefficients. In most value relevance studies, market efficiency is assumed (Holthausen and Watts, 2001). The assumption of market efficiency is fundamental in information content studies where it is implied that market will react immediately to new information which they try to capture by creating a short window around the release of this new accounting

information.

However, the assumption of market efficiency is not required in measurement perspective of value relevance (Barth et al., 2001). Only assumption in this context is that market value of equity reflects investor's beliefs and accounting numbers do incorporate all the events that are associated with setting a price. Although the literature is split but the existence of evidence declaring the abnormal returns on the portfolios formed based on publicly available accounting information also vouch for the inefficiency of market for the case of fundamental analysis view of value relevance.

2.6. Ohlson Model

While discussing the classic contributions in the field of value relevance, (Ohlson, 1995) and its subsequent modifications (Feltham and Ohlson, 1995; Ohlson, 1999) hold a special place in the value relevance literature. (Beaver, 2002) stated this as the most important research development of the previous decade. The theoretical base of the Ohlson model was derived from the neo classical dividend models developed by the (Williams, 1938) and then the famous dividend growth model by (Gordon and Shapiro, 1956) which stated that equity value of a company is equal to the present value of all the future free cash flows or dividends.

Ohlson added that with the assumption of clean surplus accounting (hereafter CSR), we can rewrite the firm value solely as a linear function of accounting variables. The main idea behind CSR is that equity value increases (decreases) just because of the addition (subtraction) of dividends and free cash flows to equity. Ohlson model is a partial equilibrium model which does not derive an "optimal" accounting system. Rather it takes the accounting system as given. It also assumes perfect capital markets but still allows imperfections in multi-period settings.

Ohlson model is also subject to regulatory obligation that the book value of equity grows at a rate less than market rate R . Though the CSR is the only restriction on the model. With the help of these assumptions, Ohlson showed that relationship between the stock prices and book value of equity and accounting earnings can be written as a linear equation (Equation 1).

Feltham and Ohlson, (1995) extended the Ohlson model. The first apparent difference of this extended model with its predecessor was the classification of firm's assets into financial and operating. The other big difference was the Linear information dynamics between the two models. The linear information dynamics in the Feltham and Ohlson model allowed them to configure the effect of accounting conservatism and growth on valuation.

Linearity in Ohlson valuation model is not a necessary condition. It is the result of perfect and complete capital market assumption. Combining these assumptions with the discounted cash flow model, the resulting estimation is linear. However, if we relax these assumptions, Ohlson model does yield a particular form of non-linearity in its valuation estimations. However, there is no consensus in the extant literature on the valuation model for imperfect and incomplete markets. These models were instrumental in re-igniting the interest in the valuation simulations to test the relevance of the financial statements and accounting numbers with the stock price and returns.

2.7. Effect of Management discretion on the utility of accounting numbers

The effect of managerial discretion, in exercising the accounting policies particularly on how to adjust the accruals, on the utility and informativeness of accounting variables is subject to vigorous scrutiny in extant literature. This discretion in management preferences and incentives affect the way financial statements are presented and prepared. This discrimination exercised by the management affect the information content of the accounting variables.

The allowances for the managerial discrimination are generally due to the differences between the governance structure, legal orientation and differences in the accounting standards. This flexibility increases the scope of earnings management. which effects the perceptions and beliefs of the investors regarding the utility and information aspect of the accounting variables and financial statements. This is why countries with legal orientation or governance structure where this flexibility in exercising managerial discretion is prevailed, stakeholders tend to focus more on the balance sheet components rather than earnings. Earnings are considered a source of new information when they are incorporated in financial statements timely. This factor of timely

incorporating the information in earnings or financial statements limits the scope of management's allowance for adjusting the accounting earnings as they deem fit.

2.8. Alignment of Tax and Financial accounting

Involvement of private sectors and the government bodies in the standard setting process can dictate the alignment of tax and financial accounting. The scale of this alignment helps to identify the factors that influence the accounting standards within a country. Due to the higher representation of government bodies in the corporate sector in code law countries, they enjoy high alignment of tax and financial accounting. This greater political influence in code law countries allow them to synchronize the government plans, tax policies, fiscal and monetary policies along with macro-economic goals.

Code based and bank-based countries are heavily influenced by the tax accounting due to the stronger presence of government bodies in the legal and economic structure. The priority of banks in the banking system makes sure that firms maintain the minimum levels of resources to repay their debt that is why they focus more on the balance sheet items of the firms. (Joos and Lang 1994). Whereas in the common law countries, the enhanced focus on the protection of shareholders' rights and involvement of private sector bodies in the legislative and accounting standard processes creates an environment which requires more value relevant accounting information or earnings. However, In the bank oriented financial system, institutional investors are limited to few banks which already have direct access of company's financials so there is lesser demand of the value relevant disclosures.

2.9. Hypothesis Development

Legal framework which offers better shareholders' protection and better governance mechanism creates more demand for the timely accounting information. The timeliness of accounting information reflects its extent of association or depiction of underlying reality of economic event. This added focus on the timeliness reduces the information asymmetry, which attracts individual and institutional investors widening the range of stakeholders. Therefore, common law countries are more associated with

the open markets and better corporate governance mechanisms leading to the higher expected association between the market value of firms and current economic events. Hence, timeliness and true and fair representation of the underlying economics of any transaction becomes of fundamental importance in this situation.

Hypothesis 1: Accounting information under IFRS impact market value of firms differently for countries with different legal origin.

This case context is also reflected in common law and code law countries via individual participation in the economy. Few attributes which are normally associated with common law e.g., strong governance mechanisms and comparatively greater protection of shareholder's rights encourages the active individual participation. On the contrary, code law allows such provisions that focus more on the protection of institutional and government rights. Thus, financial institutions serve as the backbone of their economic activity. Since, accounting information in all these countries is being produced by the same set of accounting standards, so, any increased or decreased association of firm level and country level factors with market value of firm can be attributed to the differences between their legal orientation. Consistent with this notion, we present our second hypothesis as follows.

Hypothesis 2: Macro-economic indicators impact market value of firms differently for countries with different legal origin.

CHAPTER 3: RESEARCH DESIGN

3.1. Data and Methodology

We run the price level panel regression analysis with fixed effects using EViews. Stepwise fixed effect price level regressions are estimated to calculate the marginal impact of each set of independent variables. Any firm for which any of the dependant or the independent variables data are not available or missing, is excluded from the analysis. The list of the developed economies is presented in Table 1.

Table 1 list the countries classified as the developed markets by the MSCI index and the year in which they adopted the IFRS. Since this study involves the analysis of relevance of accounting numbers of developed markets over 2006 to 2019 so every country who either didn't adopted the IFRS in 2005 or haven't fully endorsed to the IFRS are excluded from the sample. MSCI classifies countries into developed markets, emerging markets and frontier markets based on economic development, size and liquidity and market accessibility.

This classification of sixteen developed countries is subsequently further classifies according to their legal and market orientation in Table 2 and Table 3 respectively. This gives us the overview and market distribution of the selected group of countries. Furthermore, the number of observations in each and every country, group is also mentioned in the following Table. The global distribution map of legal structure is also depicted in the Figure 1.

Table 1. List of Developed Countries

Countries	IFRS adoption year	Included in the study?
Australia	2005	Yes
Austria	2005	Yes
Belgium	2005	Yes
Canada	2011	No
Denmark	2005	Yes
Finland	2005	Yes
France	2005	Yes
Germany	2005	Yes
Hong Kong	2005	Yes
Ireland	2005	Yes
Israel	2008	No
Japan	NA	No
Italy	2005	Yes
New Zealand	NA	No
Norway	2005	Yes
Netherlands	2005	Yes
Portugal	2005	Yes
Switzerland	NA	No
Singapore	NA	No
Spain	2005	Yes
Sweden	2005	Yes
UK	2005	Yes
USA	NA	No

The eligibility criteria for the inclusion in this study is presented in the Table 1. It tells the classification of developed countries by the MSCI index, their year of adoption of IFRS, and whether this makes them eligible for the consideration in this study. Canada

and Israel adopted IFRS in 2011 and 2008 respectively so they are excluded from the study. USA and Japan haven't adopted IFRS, so they are also eliminated. Singapore, Switzerland and New Zealand are adopting versions of their local standards in synchronization with the IFRS. Still their partial adoption of IFRS cannot be termed as the IFRS adoption so they are also not considered for the study. This leaves us with the sixteen developed economies. These sixteen developed economies are then classified according to their legal origin in Table two and according to their market structure in Table three.

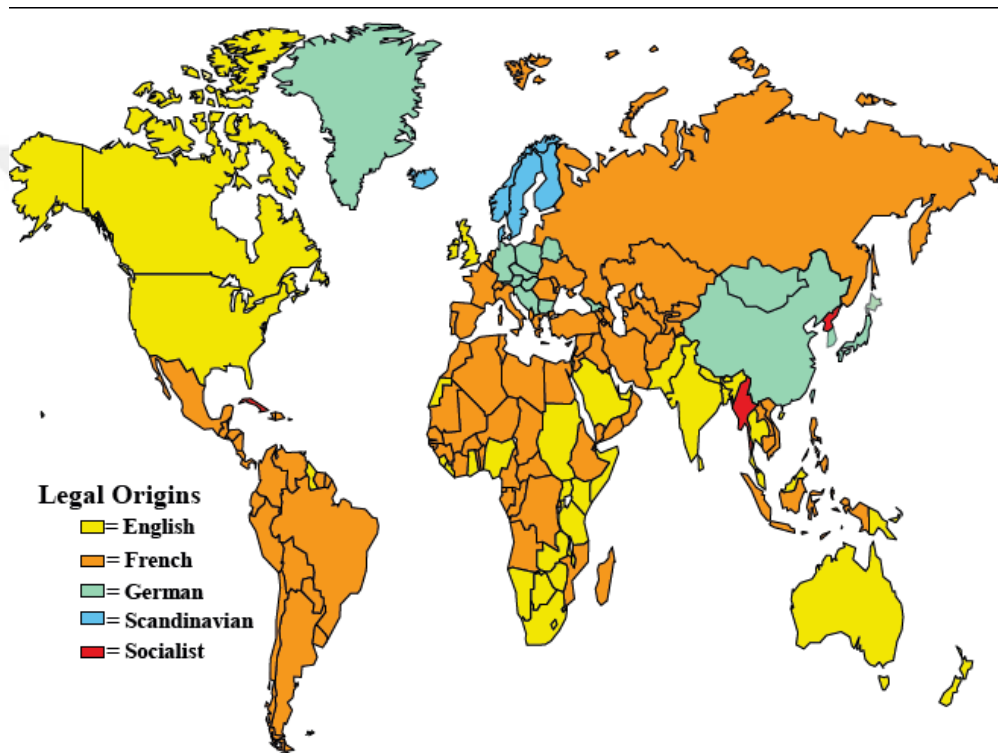


Figure 1. Legal origin distribution of countries around the globe (Source: Michalopoulos and Papaioannou, 2017)

The sixteen developed countries eligible for the analysis in Table 1 are classified into four groups based on their legal orientation (Common Law (CL), French Law (FL), German Law (GL), Scandinavian Law (SCL). This classification is presented in Table 2.

Table 2. Classification of countries according to Legal Origin.

Common Law Countries (CL)	French Origin Code Law (FL)	German Origin Code Law (GL)	Scandinavian Origin Code Law (SCL)
Australia	Belgium	Austria	Denmark
Hong Kong	France	Germany	Finland
Ireland	Italy		Norway
UK	Netherlands		Sweden
	Portugal		
	Spain		

Table 3 List the number of observations for each legal orientation accounted for in the analysis. In total there are 24,180 firm year observations for 16 countries for the period 2006 to 2019. Common Law Countries comprising of Australia, Hong Kong, Ireland and UK consists of 10,446 annual firm year observations. French Law countries have in total 6885 observations. German law countries have only two countries, Germany and Austria. Thus, they have the fewest observations 2633. Lastly Scandinavian origin legal countries have 4216 sample observations in total.

Table 3. Break down of sample data according to legal structure

Groups	Sub-Groups	Countries	Number of observations
CL	MB	Australia	4033
		Hong Kong	992
		United Kingdom	5026
	BB	Ireland	395
	Total Observations		10446
FL	MB	Netherlands	901
		BB	
		Belgium	618
		France	2810
		Italy	1366
		Portugal	272
		Spain	918
Total Observations		6885	
GL	MB	N/A	
	BB		
		Austria	375
		Germany	2258
Total Observations		2633	
SCL	MB	Denmark	554
		Sweden	1789
	BB	Finland	910
		Norway	963
	Total Observations		4216
Grand Total			24180

Table 4 lists all the variables used in the models. Accounting variables are taken from the income statement (Earnings per share) and from Balance sheet (Book value of equity scaled by number of shares outstanding). Macro-economic indicators considered are GDP Growth (Annual in Percentage) and Trade. Proxies for the market structure of the countries are Market capitalization of domestic companies and domestic credit provided by the banking sector.

Table 4. List of Variables

Type of Variable	List of Variables	Abbreviations
Dependent Variable		
	Market Value of Firm (Share Price)	SP
Independent Variables		
1- Accounting Information		
	Earnings Per Share	EPS
	Book Value of Equity Per Share	BVPS
2- Macro-economic Indicators		
	Gross Domestic product (Growth %)	GDP
	Trade (% of GDP)	TRADE
	Market Capitalization of Domestic Companies	MCDC
	Bank Credit supplied to Private sector	BCP
Dummy Variables		
	Legal dummy for French Code Law	LGFR
	Legal dummy for German Code Law	LGGR
	Legal dummy for Scandinavian Code Law	LGSC
	Legal dummy for Common Law	LGCL

Annual data of all the listed companies excluding the financial sector registered on the leading stock exchanges of the respective countries is downloaded from the Thomson and Reuters Eikon data stream. Data for the countries' macro-economic indicators have been downloaded from the World Bank. Data comprises from 2006 to 2019. Data has been organized in panel data form and any missing data regarding any indicator has been completely excluded. So, there is no missing data.

3.2. *Theoretical Foundations of pooled Regression:*

Pooled regression has a constant intercept and slope providing the consistent and efficient estimates across the cross section and time period. The assumption associated with the pooled regression and its intercept is that there is no correlation between the unobservable characteristics. There are two types of individual factors that are needed to consider,

- Cross Sectional Effects
- Time specific effects

If these individual effect does not exist ($ui = 0$), then the estimation of the parameters can be made consistent and efficient by using the pooled panel regression model. It

must be noted that the prediction parameters do not change from country to country in this study. The model for the panel data pooled regression symbolically can be written as

Equation 1. Theoretical Foundations of pooled Regression

$$y_{it} = \alpha + x_{it}\beta_{it} + \gamma_t + \delta_i + \zeta_{it}$$

Where,

α refers to the constant,

x_{it} is the vector of regressors,

β_{it} represents the regressors' slope

γ_t estimates random or fixed period specific effects for $t=1,2, 3 \dots T$,

δ_i represents random or fixed cross sectional units for $i=1,2, 3 \dots N$, and

ζ_{it} is the error term for N cross sectional units dated along T time periods.

Pooled OLS stipulations can be perceived as the set of T times period estimations with N cross-sectional observations,

Equation 2. Pooled OLS Stipulations

$$y_t = \alpha l_n + x'_t \beta_{it} + \gamma_t l_N + \delta l_N + \zeta_t$$

Where t is $1, 2 \dots T$ specific time periods, I_N represents the N element identity matrix, l_N refers N -element unit vector, and δ is the vector of all the cross-sections.

Alternatively, estimations can also be written as the N cross sectional units with T observations pooled together, illustrated as

Equation 3. Pooled estimations with N cross-sections and T observations

$$Y_i = \alpha l_t + x'_i \beta_{it} + \gamma_t l_t + \delta l_t + \zeta_i$$

where i refers $1, 2 \dots N$ cross sections, I_t represents T element identity matrix, l_t is a T element unit vector, and γ is a vector of all the period effects.

Characteristics of the pooled data is a vital importance in this scenario. The observation in the sample data is classified as either balanced or unbalanced. In balanced data, all cross-section units are detected in all the time periods. The sample size can be determined as nT .

However, in the case of unbalanced panel data (the data in our study is unbalanced panel data), to adjust the uneven group size, a slight modification in the computation

of full sample size is necessary. For unbalanced panel data the sample size is $\sum_{i=1}^n T_i$ instead of nT .

If the group sizes are equal, i.e., $f_i = 1/n$ then for the regressors, the unbalanced data can be represented as

Equation 4. Unbalanced Pooled Regression

$$X = \frac{\sum_{i=1}^n \sum_{t=1}^T X_{it}}{\sum_{i=1}^n T_i}$$

3.3. Model

The basic model we use is the Ohlson (1995) model which is used to test the relevance of accounting variables. Equation 1 represents the linear relationship between the accounting variables and share prices

Equation 5. Basic Ohlson Model

$$SP = \alpha + \beta_1 EPS + \beta_2 BVPS + \varepsilon$$

The Ohlson Model has been extended by adding the macro-economic indicators and market structure proxies to determine the marginal impact of these variables. Equation two and three represent the extended model. Extended model is run for all groups. The results for all legal groups are presented in Table 12. ANOVA test was also performed to check whether the samples are significantly different from each other. In each case, the F-Statistics was significant at five percent indicating that all the sample are statistically significantly different from each other.

Equation 6. Ohlson Model with Macro-economic indicators

$$SP = \alpha + \beta_1 EPS + \beta_2 BVPS + \beta_3 GDP + \beta_4 TRADE + \varepsilon$$

Equation 7. Extended Ohlson Model

$$SP = \alpha + \beta_1 EPS + \beta_2 BVPS + \beta_3 GDP + \beta_4 TRADE + \beta_5 BCP + \beta_6 OCP + \beta_7 MCDC + \varepsilon$$

Equation 4 represents the full model where share prices are regressed with all independent variables and dummy variables. In the first step, pooled regression has

been run using equation two to check the significance of dummy variables in all the sample comprising of 17,872 observations. The results for the pooled regression are presented in the Table 11. F-Statistics was conducted as a robustness check to compare the reduced model versus the full model. F-Statistic was significant implying the full model adds the value as compared to the reduced model.

Equation 8. Full linear Ohlson Model

$$SP = \alpha + \beta_1EPS + \beta_2BVPS + \beta_3GDP + \beta_4TRADE + \beta_5BCP + \beta_6OCP + \beta_7MCDC + \beta_8LGFR + \beta_9LGGR + \beta_{10}LGSC + \varepsilon$$

In the next step, sample of sixteen countries were sorted according to the MCDC and BCP. The extended model was run again for the countries falling under the top 25 and bottom 25 percent of MCDC and BCP. The purpose of this sample division was to investigate if countries at the extreme end of market capitalization (MCDC) and bank credit (BCP) state the value relevance of accounting and macro-economic variables differently. The results are presented in Table 13.

3.4. Price Levels Vs Return Levels Regression

Value relevance research is normally conducted by checking the statistical association of accounting numbers with either the share prices or change in prices i.e., returns. The choice between the two depends on the research question and the methodology employed (Landsman and Magliolo, 1988). For example, return level regressions are more suitable to address the timeliness of accounting information (Barth et al., 2001).

Barth, Beaver, and Landsman (1998) believes that price level or returns level specifications are associated with the “measurement view” and “information content” approach of value relevance. It is very important to differentiate between the two approaches as failure to identify the correct research design may lead researchers to draw incorrect inferences from the results.

3.5. Econometric issues and their remedies

Correlated omitted variables, measurement error, scale effects are some of the econometric issues that arises in price level regressions. (Barth and Clinch, 2009;

White, 1980) discuss these econometric issues and their potential remedies. Since I am also using the price level regressions in my research methodology, so I am focussing just on the econometric issues in context of price level regressions.

(Landsman and Magliolo, 1988) suggested that the estimation in first difference can be the one solution to the problems posed by the correlated omitted variables but this first difference estimation can also induce inference problems. Similarly, measurement error can be controlled by applying the instrumental variable technique. Another quite common problem associated with the price level regressions is the scale effect in which variance of regression residuals is aggravated due to the overwhelming influence of the large firms (Easton and Sommers, 2003).

Deflation by scale proxy, inclusion of a scale proxy as an independent variable or log transformation all are the solutions proposed by the literature to counter the scale effect. (Brown, Lo, and Lys, 1999) warns about the invalid inferences drawn and overstated R squares in price level regressions if not controlled for the scale effect.

CHAPTER 4: RESULTS

From Table 5 to 11, we have the descriptive statistics for Common Law, French Law, German Law, Scandinavian Law, Market Based and Bank Based countries. Along with the measures of dispersion, range, standard deviation and distribution of data is also mentioned. Standard error and the total count of the observations is also reported for each group in their descriptive statistics. The dependent (Share Price) and the six independent variables (comprising of accounting, macro-economic indicators and financial market structure proxies) for every legal orientation and financial structure has been statistically reported.

The mean of the share prices of common law group is least as compared to the other groups. The variance in the share prices of common law countries is also least among all the other groups. However, except, BCP all the series have leptokurtic distribution as the Kurtosis is greater than 3 for all these series. All the series are positively skewed. Standard deviation has a mixed trend as common law group includes different countries.

From the Table 5, we can see that the mean for the share price is 8.29 and for the MCDC is 196.07. This is the highest mean for MCDC in all the six groups suggesting that the common law countries have more greater market capitalization which is a testimony to their open market and financial structure and more provision for protection of creditors and investors. Standard deviation for market capitalization is also significantly higher in the common law table along with the sample variance suggesting the wide range and diversity of their market.

Table 5. Descriptive Statistics of CL Group

	SP	EPS	BVPS	GDP	TRADE	BCP	MCDC
Mean	8.29	0.50	3.99	2.18	89.43	146.39	196.07
Standard Error	0.14	0.01	0.07	0.02	1.00	0.30	2.83
Median	3.52	0.23	1.89	2.30	56.48	136.59	109.38
Mode	3.71	0.00	0.00	1.89	61.95	133.63	117.05
S.D	14.24	0.89	7.25	2.09	102.32	30.64	289.37
					10470.3		83734.3
Sample Variance	202.86	0.79	52.60	4.36	8	938.79	4
Kurtosis	40.88	39.30	188.56	39.11	4.64	1.82	6.65
Skewness	5.02	3.99	9.62	2.73	2.49	0.43	2.88
Range	210.57	21.65	229.58	30.18	402.78	198.76	1321.65
Minimum	0.00	-5.34	-8.43	-4.63	39.84	36.97	18.00
Maximum	210.57	16.31	221.15	25.56	442.62	235.72	1339.64
Count	10446	10446	10446	10446	10446	10446	10446

Table 6 lists the descriptive statistics of French origin code law group. The mean and standard deviation of share prices of French code law countries is higher than Common law countries. It shows that there is less variance in the share prices of common law countries. However, MCDC of French law countries have significantly less variance in their samples as compared to the common law countries. Moreover, accounting variables and share prices have leptokurtic distribution. The range of BVPS of French legal countries is significantly greater than the range of BVPS of common law countries.

Table 6. Descriptive Statistics of FL Group

	SP	EPS	BVPS	GDP	TRADE	BCP	MCDC
Mean	25.06	1.34	15.60	0.93	79.73	100.47	70.82
Standard Error	0.37	0.02	0.24	0.02	0.47	0.30	0.34
Median	15.59	0.91	8.97	1.40	60.47	96.01	73.07
Mode	26.75	0.00	0.00	1.79	64.48	101.93	84.87
S.D	31.01	1.83	19.77	1.80	39.18	24.68	28.30
Sample Variance	961.71	3.35	390.67	3.25	1535.14	608.93	800.82
Kurtosis	71.73	8.97	16.42	1.63	-0.01	1.59	-0.83
Skewness	5.14	1.53	3.08	-1.28	1.35	1.08	-0.11
Range	746.80	33.53	305.69	9.66	120.63	117.86	114.40
Minimum	0.01	-13.97	-56.69	-5.48	45.61	54.55	18.96
Maximum	746.81	19.56	249.00	4.17	166.24	172.41	133.35
Count	6885	6885	6885	6885	6885	6885	6885

Descriptive statistics of German origin code law countries is presented in Table 7. German code law includes only two countries. Germany and Austria. They have the least number of observations i.e., 2633. GDP and MCDC are slightly negatively

skewed. Both the accounting variables, share prices and GDP follow the leptokurtic distribution. Mean and standard deviation of SP is higher than the French and Common law group. Within the group the range is highest for the share prices followed by the book value of equity. Standard error is pretty minimal in all the indicators. Among all the indicators, only GDP and market capitalization are negatively skewed.

Table 7. Descriptive Statistics of GL Group

	SP	EPS	BVPS	GDP	TRADE	BCP	MCDC
Mean	32.27	1.66	17.91	1.49	86.52	84.74	44.93
Standard Error	0.65	0.04	0.35	0.04	0.16	0.15	0.22
Median	22.82	1.26	12.82	1.74	85.76	81.66	44.69
Mode	28.02	0.00	#N/A	2.60	87.41	77.32	61.43
S.D	33.14	2.02	18.01	1.99	8.01	7.91	11.08
Sample Variance	1098.01	4.10	324.41	3.96	64.18	62.52	122.78
Kurtosis	16.69	14.73	23.98	5.86	0.91	-0.82	-0.69
Skewness	3.08	2.34	3.29	-2.11	0.78	0.81	-0.36
Range	352.63	28.01	285.76	9.70	37.45	24.65	43.70
Minimum	0.07	-4.15	-25.29	-5.62	70.67	77.07	17.73
Maximum	352.70	23.87	260.47	4.08	108.11	101.72	61.43
Count	2633	2633	2633	2633	2633	2633	2633

Descriptive statistics of Scandinavian origin code law can be followed from the Table 8. Earnings per share, GDP and MCDC are negatively skewed. EPS, BVPS and SP have leptokurtic distribution of their sample data. EPS and GDP have the least variance showing steady and stable macro-economic environment of the Scandinavian countries. Largest deviation from the mean can be observed in MCDC followed by the BCP and SP. SCL experiences the biggest range in share prices within the group. Total number of observations in the Scandinavian group are 4,216.

Table 8. Descriptive Statistics of SCL Group

	SP	EPS	BVPS	GDP	TRADE	BCP	MCDC
Mean	14.61	0.75	8.24	1.59	82.39	122.27	97.51
Standard Error	0.31	0.03	0.20	0.03	0.17	0.42	0.51
Median	9.48	0.61	4.96	1.52	83.14	124.38	97.52
Mode	22.42	0.00	2.55	0.14	73.46	131.28	143.77
S.D	19.97	1.97	13.23	1.86	10.75	27.14	33.12
Sample Variance	398.81	3.88	174.95	3.44	115.64	736.77	1097.00
Kurtosis	141.59	644.84	121.66	3.03	-0.61	0.60	-1.19
Skewness	8.14	-19.55	6.95	-0.76	0.43	0.81	-0.06
Range	534.83	90.88	471.22	11.17	42.31	127.74	122.28
Minimum	0.03	-75.23	-178.13	-5.18	66.98	73.51	31.54
Maximum	534.86	15.64	293.09	5.99	109.29	201.26	153.82
Count	4216	4216	4216	4216	4216	4216	4216

Table 9 list the descriptive statistics for the Market based countries. Understandably MCDC has the highest mean along with the highest standard deviation and unusually high variance in its sample. Sample distribution of all variables except BCP is leptokurtic and only GDP is negatively skewed. Range within the sample is highest again for MCDC followed by the Trade and SP. The total count of the market-based observations is 13,295.

Table 9. Descriptive Statistics of Market Based Countries

	SP	EPS	BVPS	GDP	TRADE	BCP	MCDC
Mean	10.48	0.60	5.22	2.00	90.32	144.40	179.65
Standard Error	0.15	0.01	0.07	0.01	0.78	0.24	2.24
Median	4.67	0.29	2.41	2.16	61.35	134.07	109.38
Mode	3.71	0.00	0.00	1.89	61.95	133.63	117.05
S.D	16.77	0.97	8.59	1.71	90.01	27.63	258.48
Sample Variance	281.30	0.94	73.80	2.94	8101.46	763.41	66811.61
Kurtosis	41.31	15.79	33.05	5.56	6.84	0.93	9.74
Skewness	4.82	2.63	4.68	-1.53	2.81	1.26	3.36
Range	295.61	20.16	134.51	12.22	402.78	135.69	1299.21
Minimum	0.00	-4.52	-8.43	-5.18	39.84	100.03	40.44
Maximum	295.61	15.64	126.08	7.03	442.62	235.72	1339.64
Count	13295	13295	13295	13295	13295	13295	13295

Lastly, the Table 10 describes the statistics for the bank-based countries and in this sample understandably BCP has the highest mean followed by the highest median. Standard deviation and sample variance is highest for Trade and SP respectively. Only

BCP and MCDC has the kurtosis lower than 3 and distribution of EPS is negatively skewed. SP followed by the BVPS has the highest range and total observations in bank-based sample are 10,885.

Table 10. Descriptive Statistics of Bank Based Countries

	SP	EPS	BVPS	GDP	TRADE	BCP	MCDC
Mean	24.47	1.29	14.84	1.21	78.77	95.53	62.17
Standard Error	0.29	0.02	0.19	0.02	0.33	0.22	0.25
Median	14.91	0.85	8.74	1.27	68.12	94.08	59.05
Mode	28.02	0.00	0.00	0.14	73.46	101.93	84.87
S.D	30.73	2.10	19.32	2.28	33.91	23.25	25.77
Sample Variance	944.05	4.39	373.12	5.20	1150.09	540.57	664.29
Kurtosis	60.54	207.94	27.47	30.34	5.98	2.64	-0.60
Skewness	4.90	-5.21	3.67	2.29	2.45	1.27	0.36
Range	746.80	99.10	471.22	31.18	193.61	135.44	118.16
Minimum	0.01	-75.23	-178.13	-5.62	45.61	36.97	17.73
Maximum	746.81	23.87	293.09	25.56	239.22	172.41	135.89
Count	10885	10885	10885	10885	10885	10885	10885

Table 11 classifies the sample countries according to the bank based or market based financial structures proposed by the Asli Demiguc-kunt and Ross Levine in 1999. This classification gives us a fair idea about how their financial system is constructed. This financial structure affects the enforcement, preparation and application of accounting processes. The financial structure which is market based have open economies while bank based financial structure is normally termed as closed or institutional based economic structure. The segregation of financial structure according to their market structure allows to understand the influence and impact of the institutional, tax, debt settings for the investors and creditors.

Table 11. Classification of countries according to the Market structure

Market Based Countries	Bank Based Countries
Australia	Austria
Denmark	Belgium
Hong Kong	Finland
Netherlands	France
Sweden	Germany
United Kingdom	Ireland
	Italy
	Norway
	Portugal
	Spain

Table 12 links the legal orientation and the market structure of the sample countries. Table 12 gives detailed information about the number of observations in each market-based classification. Furthermore, this table also segregates the member of market-based group according to their legal orientation. Each main group (CL, FL, GL and SCL) in Table 9 is further sub divided according to their respective financial structure. Then the number of observations for each country is also mentioned. It helps to understand and see the diversity of group.

Table 11 presents the results for the pooled panel regression where all the independent variables were added stepwise in five equations. Classification has been taken from the Demirgüç-Kunt, and Ross (1999). The purpose of the pooled regression was to check the significance of the legal dummy variables created for four groups of legal orientation. LGGR, LGFR and LGSC represents the German, French and Scandinavian Law respectively with Common law as a reference category.

Table 12. Break down of sample data according to Financial Structure

Groups	Sub-Groups	Countries	Number of observations	
MB	CL	Australia	4033	
		Hong Kong	992	
		United Kingdom	5026	
	FL	Netherlands	901	
	GL	N/A		
	SCL	Denmark	554	
		Sweden	1789	
	Total Observations			13295
	BB	CL	Ireland	395
FL		Belgium	618	
		France	2810	
		Italy	1366	
		Portugal	272	
		Spain	918	
GL		Austria	375	
		Germany	2258	
SCL		Finland	910	
	Norway	963		
Total Observations			10885	
Grand Total			24180	

Table 12 marks the financial structure as the main group and legal orientation as the sub-groups. Again, the number of observations included in the study is mentioned for each country. In total, there 24180 firm year observations for sixteen countries that have been analyzed in this study. The countries with different financial structure are sub divided according to their legal affiliation.

Table 13. Pooled Stepwise Regression Results

EQ 1	Coefficients	Significance
EPS	6.057	0.0000
BVPS	0.729	0.0000
Adjusted R ²		0.5286
EQ 2	Coefficients	Significance
EPS	6.010	0.0000
BVPS	0.738	0.0000
GDP	0.677	0.0000
TRADE	-0.003	0.0920
Adjusted R ²		0.5315
EQ 3	Coefficients	Significance
EPS	5.797	0.0000
BVPS	0.683	0.0000
GDP	0.943	0.0000
TRADE	-0.002	0.1479
LGGR	8.367	0.0000
LGFR	5.109	0.0000
LGSC	2.487	0.0000
Adjusted R ²		0.5423
EQ 4	Coefficients	Significance
EPS	5.843	0.0000
BVPS	0.699	0.0000
GDP	0.607	0.0000
TRADE	0.033	0.0000
MCDC	-0.013	0.0000
BCP	-0.039	0.0000
Adjusted R ²		0.5392
EQ 5	Coefficients	Significance
EPS	5.758	0.0000
BVPS	0.680	0.0000
GDP	0.901	0.0000
TRADE	0.021	0.0000
LGFR	4.185	0.0000
LGGR	7093	0.0000
LGSC	1.712	0.0000
BCP	0.002	0.7571*
MCDC	-0.010	0.0000
Adjusted R ²		0.5435

*Significance is at 5 percent level

From Table 13, we can deduce the following points

- 1) The results of pooled regression in Table 13 shows the significance of accounting variables, macro-economic variables and legal dummies. In the first equation of the pooled data, both accounting indicators (EPS and BVPS) are significant signifying the importance of the accounting numbers. Moreover,

the combination of these accounting information variables explains more than half of the variance in the share prices of the developed countries combined.

- 2) In the equation two of the pool analysis, accounting and specific macro-economic variables (GDP and TRADE) are included. EPS has the highest coefficient which means any sensitivity in the earnings send the shock waves in the share prices of the firms. BVPS and GDP are also significant whereas TRADE has a insignificant impact with a slight negative coefficient. Overall accounting macroeconomic indicators combined explain 53 percent of the variance in share prices of sample countries.
- 3) Equation three tests the significance of the legal dummies along with EPS, BVPS, GDP and TRADE. Again, the TRADE is insignificant with EPS having the highest coefficient and more importantly, all the legal dummies are significant. Since Common Law is taken as the benchmark so there are only three legal dummies for French (LGFR), German (LGGR) and Scandinavian Law (LGSC).
- 4) Equation 4 excludes all the legal dummy variables and includes all the other independent variables regressing accounting indicators (EPS and BVPS), Macro-economic Indicators (GDP and Trade), and proxies for the financial structure (MCDC and BCP). In this equation, all the variables selected are significant and only EPS has a coefficient greater than 1 (5.843) which suggests that any slight variation in the earnings can cause a dramatic shift in the market value of firms. Interestingly, though both market structure proxies (MCDC and BCP) have a negative coefficient, but they are significant along with the GDP and Trade. Combined all independent variables they explain around 54% of the variance in the share prices of the firms.
- 5) In the last equation of this pooled panel regression data analysis, all the variables and dummies combined are regressed against the market value of firms. Significance of legal dummies in equation 5 of Table 13 verifies the presence of categorical effect of legal orientation which means that in different legal structures, accounting and non-accounting variables contribute differently towards market value of firms. In order to avoid the dummy variable trap and perfect multicollinearity among the regressors, cross sections were not fixed.

Table 14. Results for different legal origins

CL		
Variables:	β	Prob.
EPS	10.951	0.000
BVPS	0.358	0.000
GDP	0.316	0.000
TRADE	0.009	0.000
MCDC	-0.004	0.000
BCP	-0.022	0.000
Adj R-squared 0.684		
FL		
Variables:	β	Prob.
EPS	8.030	0.000
BVPS	0.524	0.000
GDP	0.939	0.000
TRADE	0.005	0.434*
MCDC	0.086	0.000
BCP	-0.592	0.000
Adj R-squared 0.569		
GL		
Variables:	β	Prob.
EPS	7.836	0.000
BVPS	0.491	0.000
GDP	0.493	0.051
TRADE	0.019	0.793*
MCDC	0.234	0.000
BCP	-0.223	0.001
Adj R-squared 0.484		
SCL		
Variables:	β	Prob.
EPS	0.481	0.000
BVPS	0.808	0.000
GDP	0.439	0.002
TRADE	0.546	0.000
MCDC	-0.030	0.002
BCP	-0.072	0.000
Adj R-squared 0.358		

* Significance is at 5 % Level.

In the next step, we run the separate regressions for each legal group and then interpreted their specific results in their own market structure, accounting and macro-

economic environment. Table 14 classifies the sample into main 4 legal categories (CL, FL, GL and SCL). Table 15, 16, 17 and 18 provide us the inside analysis of the four main legal structures by sub classifying each legal group into their respective market structure. Inside analysis of the legal groups unfolds the institutional layers that affect the market value of companies. This unfolding help us to understand the economic framework and how it impacts the valuation of a company under certain legal and market restrictions. Table 19 finally divides the data into main financial structure (Market Based and Bank Based).

Table 14 presents the results of all countries divided into their respective legal structure. Neither the cross sections nor the periods were fixed. For each group the coefficients of each independent variable and their associated significant value is recorded.

The results of Table 14 can be summarised as follows.

1. In case of common law countries, earnings per share (EPS) have the highest coefficient of 10.951 followed by the FL, GL and SCL respectively. CL countries having more association with the EPS is also endorsed by its specific provisions.
2. Moving to the BVPS, SCL countries have the highest coefficient of 0.808 followed by the FL, GL and CL. More the countries lean towards code law, more the stakeholders value the traditional balance sheet fundamentals like book value of equity.
3. GDP and Trade represent the macro-economic variables. The purpose of including macro-economic variables is to investigate how the variance in share prices is impacted by their inclusion in the model under different legal orientation. Trade is insignificant in FL, and GL group while GDP is significant in all the groups.
4. To extend the area of study beyond the GDP and Trade, we also took into consideration other macro-economic indicators that proxy the financial or market structure of a country. Market Capitalization of Domestic Companies (MCDC) and Bank Credit provided to the private sector (BCP). We can see from the table, the proxies for the market structure are significant in all the legal groups.

Demirguc-Kunt and Levine (1999) found a propensity of higher income countries' financial structure to be more market oriented as the stock markets become more active and preferred source of financing and investment for both corporations and other stakeholders. It is also reported that stock market is the faster and more efficient way of raising capital thus enhancing the overall economic development and resource allocation. Baik, B., Choi, S., and Farber, D. B. (2020) found the positive correlation between the managerial ability and the income smoothing. Managers preferably incorporate the forward looking information about the cash flows in the earnings to sway the market in their preferred direction.

Table 15. Inside Analysis of Common Law Group

CL MB		
Variables:	β	Prob.
EPS	11.005	0.000
BVPS	0.437	0.000
GDP	0.210	0.000
TRADE	-0.002	0.449
MCDC	0.000	0.961
BCP	-0.015	0.000
Adj R-squared 0.663		
CL BB		
Variables:	β	Prob.
EPS	11.108	0.000
BVPS	0.125	0.094
GDP	0.294	0.165
TRADE	0.194	0.105
MCDC	0.114	0.119
BCP	0.002	0.975
Adj R-squared 0.672		

Inside analysis of common law group provides us with interesting results. CL group overall contains four countries out of which three have market based financial structure and only one country has bank based economic structure. CL MB contains Australia, Hong Kong and UK whereas CL BB contains Ireland. Comparing the inside results with the combined sample data, following interesting differences arise.

- BCP is significant and CL MB countries implying that any variation in the bank credit in these countries will affect the market value of firms. Credit rationing and interest rate structure do affect the share prices of the firms.

- In case of CL BB, only EPS is significant with a coefficient of 11.108
- BVPS is insignificant in CL BB and has a higher coefficient in the CL MB group as compared to CL BB. Though it can be related to fact that the countries in CL MB have more advanced and mature capital markets and banking structure.

Table 16. Inside Analysis of French Law Group

FL MB		
Variables:	β	Prob.
EPS	8.105	0.000
BVPS	0.434	0.000
GDP	0.793	0.085
TRADE	0.132	0.056
MCDC	0.059	0.139
BCP	-0.300	0.075
Adj R-squared 0.445		
FL BB		
Variables:	β	Prob.
EPS	8.033	0.000
BVPS	0.531	0.000
GDP	0.931	0.000
TRADE	0.012	0.200
MCDC	0.082	0.000
BCP	-0.051	0.000
Adj R-squared 0.584		

FL is the most widely adopted legal orientation. In the sample data of 16 countries, six countries have the French origin legal orientation. French Law is usually associated with the bank based economic framework. FL MB has only one country, Netherlands while FL BB contains Belgium, France, Italy, Portugal and Spain. The inside analysis of the French Law reveals following points.

- Accounting variables are significant in both MB and BB variant of FL.
- Trade is insignificant in both principal and sub-groups. MCDC and BCP are significant in FL BB but not in Netherlands (FL MB).
- The results of the FL MB deviate from the FL Group in terms of significance of macro-economic and financial structure proxies. Since FL is pre-dominantly bank based, so FL BB results resemble with the FL.

- The variables in FL MB explain 44 percent of the variance in share prices while this significantly rises in FL BB where it explains 58 percent of the variance.

Table 17. Inside Analysis of German Law Group

GL BB		
Variables:	β	Prob.
EPS	7.836	0.000
BVPS	0.491	0.000
GDP	0.493	0.052
TRADE	0.019	0.794
MCDC	0.234	0.000
BCP	-0.223	0.001
Adj R-squared 0.484		

German Law contains only two countries, Germany and Austria. Both these countries are bank based so there is no GL MB variant, and the results of the GL BB are same as of the principal GL group.

Table 18. Inside Analysis of Scandinavian Law Group

SCL MB		
Variables:	β	Prob.
EPS	6.296	0.000
BVPS	0.835	0.000
GDP	0.053	0.714
TRADE	0.704	0.000
MCDC	0.088	0.000
BCP	-0.006	0.774
Adj R-squared 0.584		
SCL BB		
Variables:	β	Prob.
EPS	-1.119	0.000
BVPS	0.550	0.000
GDP	0.044	0.889
TRADE	0.316	0.037
MCDC	0.025	0.218
BCP	-0.105	0.002
Adj R-squared 0.287		

Lastly, the SCL group is divided into MB and BB. SCL contains four countries, Denmark, Sweden, Finland and Norway. Denmark and Sweden are Market based (MB) and Finland and Norway are Bank Based (BB). Their inside analysis gives us following pointers:

- Interestingly, GDP is significant in SCL but insignificant in both variants. As expected, SCL MB have more demand for the earnings as compared to SCL BB and combined sample of SCL. The coefficient of earnings in Denmark and Sweden contagion is 6.296 showing the high sensitivity towards the variation in earnings. Overall results of SCL MB resembles a lot with the CL and MB results.
- The variables in SCL MB explain 58.4% of the variance which is significantly higher than the SCL BB (28.7%) and overall SCL group (35.8%).

Table 19. Results for different financial structure

Market Based Countries		
Variables:	β	Prob.
EPS	9.481	0.000
BVPS	0.572	0.000
GDP	0.46	0.000
TRADE	0.029	0.000
MCDC	-0.012	0.000
BCP	0.005	0.250
Adj R-squared 0.616		
Bank Based Countries		
Variables:	β	Prob.
EPS	4.892	0.000
BVPS	0.699	0.000
GDP	0.840	0.000
TRADE	0.022	0.002
MCDC	0.068	0.000
BCP	-0.080	0.000
Adj R-squared 0.480		

Literature points out that bank-based and market-based financial framework leads to the different growth patterns. Table 19 discusses the value relevance of variables by segregating the data according to the financial structure. The results for the Market based and Bank based countries are reported along with their coefficients, significance, and Adjusted R squares.

These factors range from the legal framework, ease of raising capital, protection of stakeholders vested interests, strength of banking institutions to other institutional and policy settings. Countries where shareholders' interests are not actively safeguarded, establishments in those countries tend to raise capital through banking channels. Banks are traditionally quite stringent in their assessment and evaluation which leads to the reduction in the agency cost and information asymmetry.

Chu (2020) compared the bank based and market based economic structures and found that market-based economy is more likely to experience profound economic recovery after the recession or economic shocks than the bank-based market structures. Moreover, the development and strength of capital markets lead to more profound economic development of the country. However, in case of unbalanced financial structure, this benefit of the securities market diminishes.

Financial Structure or Economic structure commonly categorized as Market-Based and Bank-Based are meant to price, trade and distribute the debt and equity. Market-based financial orientation pre-dominantly deals with the capital markets. Underdeveloped countries where stock markets are not very accessible and developed have the banking and the other financial institutions to satisfy financial needs of investors and corporations.

Developed countries have mature capital markets and financial institutions. Investors, stakeholders and firms, however, prefer mode of financial structure based on the ease of accessing finance along with other legal and institutional factors. Before the financial crisis of 2008, no one system was particularly favourable. The research on the subject matter, post global financial crisis, found the support for the market based economic structure because the financial crisis and mortgage crisis was economically most severe in bank-based market structures (Langfeld and Pagano 2016).

Table 20. Results for Top and Bottom 25% of MCDC and BCP

Variables	TOP 25 MCDC		BOTTOM 25 MCDC		TOP 25 BC		BOTTOM 25 BC	
	Adj R ² 0.866		Adj R ² 0.821		Adj R ² 0.802		Adj R ² 0.768	
	β	P Value	β	P Value	β	P Value	β	P Value
EPS	6.468	0.000	3.849	0.000	5.400	0.000	4.926	0.000
BVPS	0.891	0.000	0.881	0.000	0.818	0.000	0.792	0.000
GDP	0.262	0.000	0.375	0.000	0.511	0.000	0.594	0.000
TRADE	0.006	0.40*	0.213	0.000	-0.006	0.47*	0.380	0.000
MCDC	0.000 1	0.92*	0.026	0.24*	0.003	0.24*	0.022	0.06*
BCP	-0.002	0.000	-	0.026	-0.030	0.000	-	0.139
OCP	-0.151	0.75*	0.472	0.33*	0.794	0.043	7.546	0.000

* Significance is at 5 % Level.

To understand more clearly the impact of these market proxies on the market value of firm, the combined sample of all sixteen countries was sorted with respect to MCDC and BCP. These market structure proxies (MCDC, BCP) provide valuable insights on the relative importance of equity vs. debt financing in these sample countries. This helps in understanding which country's economic structure more Market based/equity oriented and which country more debt oriented/close economy/Bank based is. After this segregation, the aim is to understand how does the accounting information (EPS and BVPS) impacts the market value of equity in these banks based and market-based economies?

Since all the countries have adopted IFRS since 2005 so these differences (if any) in explained variation in share prices cannot be attributed to the differences in accounting standards. Hence, I would be interested to see if these differences in value relevance of accounting variables can be attributed to the differences in the market structure or to the differences in the macro-economic conditions of these countries. Therefore, macro-economic variables were introduced step wise and then these market structure proxies in the model respectively to check their marginal impact on the coefficient/slope of accounting variables and in the explained variance in share prices, if any.

Since Table 20 also accommodates another variable OCP which is domestic credit provided to the private sector other than the banking sector. It is calculated by subtracting the domestic credit provided by the banking sector from the total domestic

credit. The availability of OCP data was limited to 2016 so this table represents the sample data from 2006 to 2016.

Countries falling under the top and bottom twenty-five percentile of MCDC and BCP were run again on EViews. The results of these four equations are presented in Table 16. As expected, BCP is significant both in top and bottom twenty-five percent of MCDC. However, MCDC is insignificant in both top and bottom 25 percent of BCP group while BCP and OCP both are significant in top and bottom 25% of BCP.

The results and analysis along with their respective implications in context of existing literature can be summarized as follows:

- This research conducted the panel data regression analysis of sixteen developed countries using IFRS since 2005. To understand the impact of the institutional settings, sample countries were classified according to their legal and financial structure. The detailed analysis of this classification helped us understand the underlying framework affecting the share prices of firms and their sensitivity to variety of factors.
- Common law features are more supportive of the shareholder's protection and better financial reporting because of the active participation of the private sector along with the government authorities (Ball, Kothari, and Robin, 2000). Their focus on good governance makes them more prone to the changes in earnings as compared to other legal systems.
- Majority of the common law countries are market-based countries thus focusing more on the market-based measures of accounting like earnings and their timeliness. In open market structure, the timeliness of accounting earning conveys the information to the investors.
- In code law countries there is higher political influence due to the greater involvement of the government bodies in setting the accounting policies which affects the timeliness and conservatism of accounting earnings.
- Taxation and accounting policies are developed typically with the representation from labour unions, business associations and financial intuitions in these countries. The demand of current period income in code law countries is determined by the pay-out preferences of these major stakeholders and not by the demand for general public disclosures.

- In common law countries, share prices are more sensitive to the changes in accounting earnings. Ali and Hwang (2000) also explored the impact of numerous country specific factors on the value relevance of accounting numbers for sixteen countries and found that market-based economies exhibit greater value relevance of accounting data than the bank-based countries.
- French, German and Scandinavian law countries are more bank based. Their legal system is also supportive of the government control and closed market structure that is why change in earnings have a less significant part in shaking up the share prices of the French and German law countries.
- Given the explanation offered for the higher emphasis and higher association of EPS in case of CL countries, we can expect it at the bottom in case of BVPS. For the very same reasons, we can expect the code law origin countries would focus more on the BVPS as this conveys the information of the financial stability of the firm to the investors who in code law countries are concerned with the financial health of the firms rather than current earnings.
- This is mainly because in these countries' banks are prime investors, so they focus more on the BVPS. Moreover, closed nature of their economic structure decreases the demand of earnings and increases the demand of the BVPS.
- From Table 14, we can see that GDP is significant in all the groups while Trade is insignificant in FL and GL group. GL countries include Germany and Austria. Trade is the important aspect of their micro-economic policy. The share prices of GL and SCL are affected most with the alteration in trade policy.
- CL countries being more open in their economic structure and having much stronger relation between investors and current portfolio of firms focus less on the long term macro-economic indicator in deciding the share price of the firm.
- Whereas code law countries are subject to increasing influence of the government as compared to common law countries. Regulatory and legal framework is also important for the application of accounting standard (Bradshaw and Miller, 2008). These specific characteristics of each legal structures allowed this diversity in the events that transform the market value of firms differently in each group of countries under study.

- BCP is considered in order to understand the role of financing other than the banks. This is the total financing provided to the private sector in a country by the banks. The data for all these proxies is collected from the world bank.
- MCDC and BCP is significant irrespective of the legal orientation. This shows that the financial structure of a country does have a say in the valuation of a company. GL and SCL being more resilient on the closed capital market structure find the role of MCDC significant in shaping the market value of firm. While code law (FL, GL, SCL) is typically associated with the closed market structure due to their provisions in the law, find BCP significant in all three categories of code law (FL, GL, SCL) and interestingly, CL allied with open market structure also find BCP significant in shaping the market value of firms with the negative coefficient.
- The open market structure in conjuncture with the common law provisions support stronger shareholder protection leading to the more general public participation. This strong participation in equity market reduces the firm's dependence on external debt from banks or financial institutions.
- Rather, majority of firms prefer to raise equity capital in these circumstances and the most cost-effective medium of providing the information about firm's economic ground realities to shareholders is via financial statements. That is why the financial information in common law countries is more associated with the underlying economic activity by timely incorporating the any impact these economic events may have on the financials of firms.
- Similarly, Code Law countries allied with the strong dominance of banks in their market structure find BCP significant. It just strengthens the belief that any participation in the market other than banks is strongly appreciated in code law countries and enhances the market value of firms.

CHAPTER 5: CONCLUSION

5.1. Concluding Remarks

This study is conducted to investigate the impact of accounting and macroeconomic indicators on the market value of firms. The impact of accounting numbers on the share prices has been associated with the relevance and usefulness of accounting numbers. Macro-economic indicators and the financial market structure proxies are considered, at the institutional level, as the exogenous factors. Combined with the accounting numbers, their association with the market value of firm has been measured for sixteen developed countries separated by their different legal orientation. The impact of differences in the legal structure or the financial market structure was thoroughly investigated on the value relevance of accounting and macro-economic indicators.

To avoid the disruptions of the market maturity differences only developed comparable economies were considered for this research project. Moreover, in order to set aside the accounting differences which, affect the preparation and presentation of the financial statements, only those developed countries were considered who are preparing their financial statements under IFRS since 2005. Any late adopters or non-adopters developed countries were not considered for the sake of comparability. Annual firm year observations and macroeconomic indicators were analysed from 2006 to 2019.

These results analysed the sample data with respect to diversion in legal structure. The results reconcile with the literature in terms of earnings more valuable part of valuation of firm in common law countries as compared to the code law countries. Their value relevance and greater demand drives the firm valuation. While code law countries also find role of earning significant, but their institutionalized economy also rely on the traditional book value of equity. The banks and other lending institutions focuses more on the fundamentals of the balance sheet along with the income streams.

Market value of the firm is the fair price of the equity value of firm. This fair price is determined by the market on the basis of beliefs of market participants irrespective of whether beliefs are well founded or not. Therefore, fair value cannot be termed as the

unbiased measure of the true value of equity. Since, every stakeholder has its own judgement to make based on public and inside information, it creates a lot of noise and speculation which makes it hard to figure out the true market value of equity. This situation sometimes leads to the overvaluation or undervaluation of securities' pricing. However, the market has the tendency to immediately correct itself in such cases.

Due to the high leverage in the bank based financing, bank based market structures are subject to the higher systematic risk. During the financial growth, banks extract high returns on their equity. However, in recession the increased cost of capital along with the increased number of liquidation claims amplify the systematic risk to the overall financial stability at an institutional and country level. Acharya and Thakur (2016) tested this claim empirically and found that the bank runs prompted by the credit rationing or other credit discipline techniques significantly increases the risk of financial debacle or bankruptcy claims.

The results of this extensive research can be summarized as follows.

- 1) Earnings remain more important to the CL countries than all the code law countries with legal structure more inclined towards shareholders protection and promoting the open market. As, higher quality accounting reporting standard not only increases the trust of its intended audience but also it helps the financial institutions in reducing their cost of external borrowings (Durnev and Kim, 2005). These provisions in the common law encourages the stakeholder to focus more on the recent accounting events associated with the firms.
- 2) Following the same ground of reasoning, demand for earnings is lower in code law countries. Due to heavy political and institutional influence on the construction of market policy, book value per share is duly rewarded in these set of countries. Lending institutions in these countries have more direct relation with the firms. This personalized relation with their clients help them in understanding the inside mechanism and dynamics of the firm. This acclimatization of the inside information makes role of book value per share extremely important for these financial institutions.

- 3) Bank based financial structure is preferred in face of information asymmetries arising between lenders and borrowers. Countries that are under the influence of common law tend to have market based financial system.
- 4) The strong participation of banking institutions in code law countries is supported by the strong association of book value of equity per share in code law countries.
- 5) Moving towards the macro-economic variables, no generic implications can be drawn from the result.
- 6) GDP growth (annual %) is significant in all the groups and it explains least variance in share prices in code law countries which can be attributed to the fact that these countries are relatively consistent in terms of financial development and GDP growth. Hence stakeholders already have a fair idea about the current and future growth of GDP while setting up the market value of firm. Capital markets are subject to greater volatility and these markets are less shock resistant.
- 7) The hall mark of the economic development of code law countries is the strength of their financial institutions and hence prioritizing their fiscal and monetary policy to support this pillar of their economic development leave them more relied on the macro-economic indicators.
- 8) The additional emphasis on these policies and comparatively less active capital markets makes trade volume very important ingredient of their economic development. This is also evident from the ranking of coefficient of TRADE in terms of impacting the market value of firms by considering the percentage change in trade volume.
- 9) Lastly, the macro economic variables designed to proxy the financial infrastructure of countries indicates interesting trends albeit no generalizations.
- 10) BCP is significant only in CL. MCDC is significant in GL and SCL. This makes sense when we consider the overall environment in which firms operates and combining it with the market and stakeholder's behaviour influenced by the legal provisions and allowances.

Concluding the arguments, we can say that despite the globalization, there are differences at the firm level and institutional level that are impacted by the legal orientation and despite all the comparability and harmonization of accounting

standards, the differences in these exogenous (Legal and institutional country level) factors effects the market value of firms.

5.2. Implications of the Study:

During the process of identifying the factors that changes the association of share prices, various firm level and institutional factors have been considered. These factors coupled with unique country settings in terms of their legal and financial structure domain has been analysed. This comprehensive analysis of high-income countries with substantially long period of time (14 Years) and large data set (24,180 observations) generates useful implications for all the stakeholders. The implications of the study can be broadly related as,

- Managerial Implications
- Implications for the shareholders
- Implications for the financial institutions.

5.2.1. Managerial Implications:

According to the agency theory in financial management, the role of the managers is to serve the best interests of the shareholders. As their agent, managers do not always hold the best interest of their principal. This conflict adversely impacts the performance of the firm. However, with the transparency and good corporate governance mechanisms in place, these conflicting interests can be aligned for the betterment of shareholders and company.

One of the fundamental conclusions of this study is the value relevance of accounting information and its influence on the market valuation of the company. Accounting information, when relevant and reliable, increases the trust of the shareholders on the managers under whom supervision these financial statements are prepared. Value relevance of accounting information reduces the agency conflicts between management and shareholders by reducing the information asymmetry.

In the CL and MB countries, we found that EPS is more value relevant than the BVPS and share prices are more sensitive to changes in earnings. It shows that market waits for the new information content in the earnings and then adjust its valuation according

to the announcement. This increases the demand of earnings in these countries and another aspect of it is the timeliness. The timely announcement is critical in exposing the new information content in earnings to the market. Thus, it is the job of the management to make sure they cash the trust and demand of the value relevance of earnings in Common Law and Market based countries.

Another important implication for the managers is that greater the value relevance, lesser is the margin for the income smoothing. Both these indicators (Value Relevance and Income smoothing) are the proxy of accounting quality (Barth et al., 2001). Higher accounting quality reduces the managerial cost associated with the preparation of the financial statements. Results show that both CL and MB countries are less associated with the earnings management.

The presence and significance of categorical effect of legal domain also show that share prices are not only affected with the firm level indicators like accounting variables, but there are also some exogeneous factors that can disrupt the valuation of a company. Though managers cannot control the exogenous or state level risk factors, but they can definitely improve the corporate investment efficiency by focussing on the firm level factors like timely loss recognition, earnings management and level of accruals.

Managers in their try to sway the market in their favour sometimes engage in different malpractices. Value relevance, legal protection and open market structure decreases such occurrences due to the institutional framework put in place to counter such activities. At the firm level, voluntary disclosures, textual content analysis of financial reports and concrete assessment of default risk can counter such measures and ensure the accounting standard quality.

5.2.2. Implications for the shareholders:

The results generate some useful implications for the shareholders. The value relevance of accounting variables allows shareholders to make informed investment decisions. In order to make the better economic decisions, shareholders need to understand the information content of the financial statements.

The provisions of the code law subdue the rights of the individual investors in favour of the government and institutional investors specially in FL countries. Similarly in

BB countries, property rights, bankruptcy law, securities law and corporate law is designed with major focus on the lending institutions. This discourages the individual participation in the capital markets which is evident by the relative inactive capital markets of code law and bank-based countries.

On the contrary, common law provide protection to the shareholders rights. This added safety allows the shareholders to invest openly in these CL countries. This is one of the reasons mostly CL countries have open market structure and strong capital markets. Companies being aware of the shareholders rights in common law countries gets extra motivation to avoid setting any traps or committing any accounting fraud. Countries having MB financial structure also go through the same process.

Another important implication is the shareholder's demand for the timely, true and fair, relevant and reliable piece of accounting information to assess and value the risks associated with their investment and portfolio. With the evidence that the institutional settings affect the market valuation, shareholders can plan their investment according to the country specific settings. Similarly, the significance of the market structure proxies, and macro-economic variables suggest that the shareholders and companies both are subject to the systematic and unsystematic risk factors. Acknowledging this changes, the diversification strategies of the analysts and individual investors. Cross border listing and investment in hedge funds increases as the result.

5.2.3. Implications for the financial institutions:

The results indicate that BVPS has a higher coefficient in the BB and Code Law countries. This is because the underlying strength of their economic infrastructure lies in the strength of their financial institutions. This is also why their corporate, economic, and legal policies are institutional based. Banks are the primary lenders in these countries and capital markets are comparatively less active as compared to CL and MB countries. This is evident by considering the significance of BCP and MCDC in the analysis.

Greater involvement of banks disrupts the efficient capital structure mix. In CL countries, public companies can raise capital either via public offering or through lending institutions. This choice though available to the BB based countries is not easy to avail. Raising debt equity is more accessible in BB countries. However, involvement

of the banks as creditors reduces the cost of capital and improves the corporate capital efficiency.

Trade off theory in the capital structure literature also supports the results of the analysis. According to the trade-off theory, the debt tax shield maximizes the firm value by reducing the cost of capital and increasing the profitability of the firm. In the BB and Code Law countries specially the FL and GL the higher coefficient of the BVPS indicate the sensitivity of firm value with these fundamentals. Banks make sure firms do not engage in extra risky activities and they maintain the diversification in their investment portfolio, hence involvement of banks not only reduces the monetary cost but also reduces the solvency risk.

5.3. Limitations of the Study:

The research question in this study focuses on the developed countries. Though the scope of this study requires the notion of comparability, due to which only comparable developed countries were selected, the author believe that this analysis can be extended to emerging markets as well.

Moreover, countries which are not adopting IFRS can also be included to give a different perspective of how macro-economic indicators and market structure proxies impact the association of accounting variables with the market value of firms in non-IFRS countries.

The findings of study concern the standard setters, governance mechanism of a country and other stake holders like investors, financial institutions etc. However, author believes that use of different accounting indicators like cash flows, accruals, fair values can extend the appeal of this study to the academic and non-academic audience.

REFERENCES

- Aabo, T., Pantzalis, C., and Park, J. C. (2017). *Idiosyncratic volatility: An indicator of noise trading?* Journal of Banking and Finance, 75, pp. 136–151.
<https://doi.org/10.1016/j.jbankfin.2016.11.003>
- Acharya, V. V., and Thakor, A. V. (2016). *The dark side of liquidity creation: Leverage and systemic risk.* Journal of Financial Intermediation, 28, pp. 4-21.
- Adwan, S., Alhaj-Ismail, A., and Girardone, C. (2020). *Fair value accounting and value relevance of equity book value and net income for European financial firms during the crisis.* Journal of International Accounting, Auditing and Taxation, 39, 100320. <https://doi.org/10.1016/j.intaccaudtax.2020.100320>
- Ali, A and L. S. Hwang. 2000. *Country-Specific Factors Related to Financial Reporting and the Value Relevance of Accounting Data,* Journal of Accounting Research, 38 (1): pp. 1-21.
- Altinbas, H., and Biskin, O. T. (2015). *Selecting Macroeconomic Influencers on Stock Markets by Using Feature Selection Algorithms.* Procedia Economics and Finance, 30(15), pp. 22–29. [https://doi.org/10.1016/s2212-5671\(15\)01251-4](https://doi.org/10.1016/s2212-5671(15)01251-4)
- Amir, E., Harris, T. S., and Venuti, E. K. (1993). *A comparison of the value-relevance of US versus non-US GAAP accounting measures using form 20-F reconciliations.* Journal of Accounting Research, 31, pp. 230-264.
- Baik, B., Choi, S., and Farber, D. B. (2020). *Managerial ability and income smoothing.* The Accounting Review, Vol. 95(4), pp. 1-22.
<https://doi.org/10.2308/accr-52600>
- Ball, R and P. Brown. 1968. *An Empirical Evaluation of Accounting Income Numbers,* Journal of Accounting Research, Vol. 6 (2), pp. 159-178.
- Ball, R. 2001. *Infrastructure Requirements for an Economically Efficient System of Public Financial Reporting and Disclosure,* Brookings-Wharton Papers on Financial Services, 2001 (1) pp. 127–169.

Ball, R., Kothari, S. P., and Shanken, J. (1995). *Problems in measuring portfolio performance An application to contrarian investment strategies*. Journal of Financial Economics, Vol. 38(1), pp. 79-107.

Ball, R., Robin, A., and Sadka, G. (2008). *Is financial reporting shaped by equity markets or by debt markets? An international study of timeliness and conservatism*. Review of accounting studies, 13(2-3), pp. 168-205.

Ball, R., S. Kothari and A. Robin. 2000. *The effect of international institutional factors on properties of accounting earnings*, Journal of Accounting and Economics, Vol. 29 (1), pp. 1–51.

Barth, M. E. (2018). *The Future of Financial Reporting: Insights from Research*. Abacus, Vol. 54(1), pp. 66–78. <https://doi.org/10.1111/abac.12124>

Barth, M. E., and Clinch, G. (2009). *Scale effects in capital markets-based accounting research*. Journal of Business Finance and Accounting, 36(3-4), pp. 253-288.

Barth, M. E., Israeli, D., and Sridharan, S. A. (2019). *Equity Book Values Greater Than Market Values: Accounting, Risk, or Mispricing?* SSRN Electronic Journal, (March). <https://doi.org/10.2139/ssrn.3306503>

Barth, M. E., and Landsman, W. R. (2018). *Using Fair Value Earnings to Assess Firm Value*. SSRN Electronic Journal, (April). <https://doi.org/10.2139/ssrn.3103842>

Barth, M. E., Beaver, W. H., and Landsman, W. R. (1996). *Value-relevance of banks' fair value disclosures under SFAS No. 107*. Accounting Review, pp. 513-537.

Barth, M. E., Beaver, W. H., and Landsman, W. R. (1998). *Relative valuation roles of equity book value and net income as a function of financial health*. Journal of Accounting and Economics, Vol. 25(1), pp. 1-34.

Barth, M. E., W. H. Beaver and W. R. Landsman. 2001. *The relevance of the value relevance literature for financial accounting standard setting: another view*, Journal of Accounting and Economics, Vol. 31 (1), pp. 77–104.

- Barth, M. E., W. R. Landsman and M. H. Lang. 2008. *International accounting standards and accounting quality*, Journal of Accounting Research, 46(3), pp. 467–498.
- Barth, M. E., W. R. Landsman., D. Young and Z. Zhuang. 2014. *Relevance of Differences between Net Income based on IFRS and Domestic Standards for European Firms*, Journal of Business Finance and Accounting, Vol. 41 (3–4), pp. 297–327.
- Barth, M. E., W. R. Landsman., M. Lang and C. Williams. 2012. *Are IFRS-based and US GAAP-based accounting amounts comparable?*, Journal of Accounting and Economics, Vol. 54 (1) pp. 68-93.
- Beaver, W. H. (2002). *Perspectives on recent capital market research*. The Accounting Review, Vol. 77(2), pp. 453-474.
- Beaver, W. H. 1968. *The Information Content of Annual Earnings Announcements*, Journal of Accounting Research, pp. 67–92.
- Bhatia, M., and Mulenga, M. J. (2019). *Do Accounting numbers have any relation with Stock prices? A Case of Public and Private sector banks of India*. Theoretical Economics Letters, Vol. 9(5), pp. 1682-1698.
- Bradshaw, M. T and G. S. Miller. 2008. *Will harmonizing accounting standards really harmonize accounting? Evidence from non-US firms adopting US GAAP*, Journal of Accounting, Auditing and Finance, Vol. 23 (2), pp. 233–264.
- Brown, S., Lo, K., and Lys, T. (1999). *Use of R^2 in accounting research: measuring changes in value relevance over the last four decades*. Journal of Accounting and Economics, Vol. 28(2), pp. 83-115.
- Chakraborty, S. and Ray, T., 2006. *Bank-based versus market-based financial systems: A growth-theoretic analysis*. Journal of Monetary Economics, Vol. 53(2), pp. 329-350.
- Chen, N., R. Roll and S. Ross. 1986. *"Economic forces and the stock market"*, Journal of Business: pp. 383–403.

- Chu, L. K. (2020). *Financial structure and economic growth nexus revisited*. *Borsa Istanbul Review*, Vol. 20(1), pp. 24-36. <https://doi.org/10.1016/j.bir.2019.08.003>
- Cornell, B., Landsman, W. R., and Stubben, S. (2017). *Accounting Information, Investor Sentiment, and Market Pricing*. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2447695>
- Cox, J. C., J. E. Ingersoll and S. A. Ross. (1985). *An Intertemporal General Equilibrium Model of Asset Prices*, *Econometrica*, Vol. 53 (2), pp. 363-384.
- De George, E. T., Li, X., and Shivakumar, L. (2016). *A review of the IFRS adoption literature*. *Review of Accounting Studies*, Vol. 21(3), pp. 898-1004.
- Dechow, P. M., Sloan, R. G., and Sweeney, A. P. (1995). *Detecting earnings management*. *Accounting review*, pp. 193-225.
- Demirgüç-Kunt, A., and Levine, R. (1999). *Bank-based and market-based financial systems: Cross-country comparisons*. The World Bank. Available at SSRN 569255.
- Durnev, A and E. Kim (2005). *To steal or not to steal: Firm attributes, legal environment, and valuation*, *The Journal of Finance*, Vol. 60 (3) pp. 1461–1493.
- Easterly, W., and Levine, R. (2016). *The European origins of economic development*. *Journal of Economic Growth*, Vol. 21(3), pp. 225–257. <https://doi.org/10.1007/s10887-016-9130-y>
- Easton, P. D., and Sommers, G. A. (2003). *Scale and the scale effect in market-based accounting research*. *Journal of Business Finance and Accounting*, Vol. 30(1-2), pp. 25-56.
- Elbakry, A. E., J. C. Nwachukwu., H. A. Abdou and T. Elshandidy. 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: pp. 10–30.
- Eugster, F., and Wagner, A. F. (2020). *Value reporting and firm performance*. *Journal of International Accounting, Auditing and Taxation*, 40, 100319. <https://doi.org/10.1016/j.intaccaudtax.2020.100319>

Feltham, G. A., and Ohlson, J. A. (1995). *Valuation and clean surplus accounting for operating and financial activities*. Contemporary accounting research, Vol. 11(2), pp. 689-731.

Ferreira, P. H., Kräussl, R., Landsman, W. R., Borysoff, M. N., and Pope, P. F. (2019). *Reliability and relevance of fair values: private equity investments and investee fundamentals*. Review of Accounting Studies, 24(4), pp. 1427–1449. <https://doi.org/10.1007/s11142-019-09509-9>

Francis, J., and Schipper, K. (1999). *Have financial statements lost their relevance?*. Journal of accounting Research, Vol. 37(2), pp. 319-352.

Gordon, M. J., and Shapiro, E. (1956). *Capital equipment analysis: the required rate of profit*. Management science, Vol. 3(1), pp. 102-110.

Harris, T. S., and Ohlson, J. A. (1990). *Accounting disclosures and the market's valuation of oil and gas properties: Evaluation of market efficiency and functional fixation*. Accounting Review, pp. 764-780.

Holmstrom, B. and Tirole, J., 1997. *Financial intermediation, loanable funds, and the real sector*. the Quarterly Journal of economics, Vol. 112(3), pp. 663-691.

Holthausen, R. W and R. L. Watts. (2001). *The relevance of the value-relevance literature for financial accounting standard setting*, Journal of Accounting and Economics, Vol. 31 (1), pp. 3–75.

Hribar, P., Kravet, T., and Wilson, R. (2014). *A new measure of accounting quality*. Review of Accounting Studies, Vol. 19(1), pp. 506-538.

Hung, M. 2000. "Accounting standards and value relevance of financial statements: An international analysis", Journal of Accounting and Economics, Vol. 30, pp. 401–420.

Iatridis, G. (2010). *International Financial Reporting Standards and the quality of financial statement information*. International review of financial analysis, Vol. 19(3), pp. 193-204.

- Isidro, H., and Raonic, I. (2012). *Firm incentives, institutional complexity and the quality of “harmonized” accounting numbers*. *The International Journal of Accounting*, Vol. 47(4), pp. 407-436.
- Joos, P., and Lang, M. (1994). *The effects of accounting diversity: Evidence from the European Union*. *Journal of Accounting Research*, 32, pp. 141-168.
- Kamarudin, K. A., Ariff, A. M., and Jaafar, A. (2020). *Investor protection, cross-listing and accounting quality*. *Journal of Contemporary Accounting and Economics*, 16(1), 100179. <https://doi.org/10.1016/j.jcae.2019.100179>
- Kothari, S. P. (2001). *Capital markets research in accounting*. *Journal of accounting and economics*, 31(1-3), pp. 105-231.
- La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. (2013). *Law and Finance After a Decade of Research*. In *Handbook of the Economics of Finance* (Vol. 2). <https://doi.org/10.1016/B978-0-44-453594-8.00006-9>
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. (1998). *Law and Finance*. *Journal of Political Economy*, 106(6), pp. 1113–1155. <https://doi.org/10.1017/S0014479700015611>
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. (2000). *Investor protection and corporate governance*. *Journal of financial economics*, 58(1-2), pp. 3-27.
- Landsman, W. R., and Magliolo, J. (1988). *Cross-sectional capital market research and model specification*. *Accounting Review*, 586-604.
- Langfield, S., and Pagano, M. (2016). *Bank bias in Europe: effects on systemic risk and growth*. *Economic Policy*, Vol. 31(85), pp. 51-106.
- Lev, B., and Ohlson, J. A. (1982). *Market-based empirical research in accounting: A review, interpretation, and extension*. *Journal of Accounting research*, 249-322.
- Levine, R and S. Zervos. 1996. *Stock Market Development and Long-Run Growth*, *The World Bank Economic Review*, 10 (2), pp. 323–339.

- McNichols, M. F. (2002). *Discussion of the quality of accruals and earnings: The role of accrual estimation errors*. *The accounting review*, 77(s-1), pp. 61-69.
- Merton, R. C. 1973. *An Intertemporal Capital Asset Pricing Model*, *Econometrica*, 41 (5), pp. 867-887.
- Michalopoulos, S. and Papaioannou, E., 2017. *The Long Economic and Political Shadow of History Volume I. A Global View*. Centre for Economic Policy Research.
- Liao, L., Kang, H., and Morris, R. D. (2021). *The value relevance of fair value and historical cost measurements during the financial crisis*. *Accounting and Finance*, 61(S1), pp. 2069–2107. <https://doi.org/10.1111/acfi.12655>
- Mirza, A., Malek, M., and Abdul-Hamid, M. A. (2019). *Value relevance of financial reporting: Evidence from Malaysia*. *Cogent Economics and Finance*, 7(1). <https://doi.org/10.1080/23322039.2019.1651623>
- Mohr, P. (2005). *Economic indicators*, Unisa Press.
- 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.
- Ohlson, J. A. (1999). *On transitory earnings*. *Review of accounting studies*, 4(3-4), pp. 145-162.
- Ohlson, J. A. 1995. *Earnings, book values, and dividends in equity valuation*, *Contemporary Accounting Research*, 11 (2), pp. 661–687.
- Penman, S. H. (2002). *The quality of financial statements: Perspectives from the recent stock market bubble*. Available at SSRN 319262.
- Rogers, R. 1998. *"Handbook of key economic indicators"*, McGraw Hill Professional,
- Ross, S. A. 1976. *"The arbitrage theory of capital asset pricing"*, *Journal of Economic Theory*, 13 (3), pp. 341–360.
- Sellin, P. 2001. *Monetary Policy and the Stock Market: Theory and Empirical Evidence*, *Journal of Economic Surveys*, 15 (4), pp. 491–541.

Singleton-Green, B. (2015). *The effects of mandatory IFRS adoption in the EU: A review of empirical research*. Information for Better Markets, Forthcoming.

Soderstrom, N. S and K. J. Sun. 2007. *IFRS Adoption and Accounting Quality: A Review*, European Accounting Review, 16 (4), pp. 675–702.

Stubben, S. R. (2010). *Discretionary revenues as a measure of earnings management*. The accounting review, 85(2), pp. 695-717.

Wafi, A. S., Hassan, H., and Mabrouk, A. (2015). *Fundamental Analysis Models in Financial Markets – Review Study*. Procedia Economics and Finance, 30(15), pp. 939–947. [https://doi.org/10.1016/s2212-5671\(15\)01344-1](https://doi.org/10.1016/s2212-5671(15)01344-1)

White, H. (1980). *A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity*. Econometrica, 48(4), pp. 817-838.

Williams, J.B., 1938. *The theory of investment value* (No. HG4521 W48).

Yip, R. W. Y and D. Young. 2012. *"Does Mandatory IFRS Adoption Improve Information Comparability?"*, The Accounting Review, 87 (5), pp. 1767–1789.

APPENDICES

POOLED DATA: Equation 1

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 2953

Total panel (unbalanced) observations: 24180

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.289576	0.134225	31.95806	0.0000
EPS	6.057171	0.080335	75.39899	0.0000
BVPS	0.729313	0.008527	85.52617	0.0000
R-squared	0.528656	Mean dependent var		16.77855
Adjusted R-squared	0.528617	S.D. dependent var		25.06187
S.E. of regression	17.20681	Akaike info criterion		8.528612
Sum squared resid	7158193.	Schwarz criterion		8.529616
Log likelihood	-103107.9	Hannan-Quinn criter.		8.528938
F-statistic	13558.36	Durbin-Watson stat		0.575981
Prob(F-statistic)	0.000000			

Pooled Data Equation 2

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 2953

Total panel (unbalanced) observations: 24180

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.366547	0.201045	16.74525	0.0000
EPS	6.009879	0.080186	74.94924	0.0000
BVPS	0.737807	0.008530	86.49642	0.0000
GDP	0.676895	0.055394	12.21970	0.0000
TRADE	-0.002666	0.001582	-1.685166	0.0920
R-squared	0.531552	Mean dependent var		16.77855
Adjusted R-squared	0.531475	S.D. dependent var		25.06187
S.E. of regression	17.15458	Akaike info criterion		8.522614
Sum squared resid	7114206.	Schwarz criterion		8.524287
Log likelihood	-103033.4	Hannan-Quinn criter.		8.523156
F-statistic	6857.899	Durbin-Watson stat		0.568925
Prob(F-statistic)	0.000000			

Pooled Data Equation 3

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 2953

Total panel (unbalanced) observations: 24180

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.809232	0.239834	3.374132	0.0007
EPS	5.796799	0.079770	72.66895	0.0000
BVPS	0.683430	0.008753	78.07644	0.0000
GDP	0.942963	0.056527	16.68178	0.0000
TRADE	-0.002264	0.001564	-1.447032	0.1479
LGGR	8.367557	0.388992	21.51088	0.0000
LGFR	5.109037	0.288205	17.72710	0.0000
LGSC	2.487167	0.313000	7.946212	0.0000
R-squared	0.542454	Mean dependent var		16.77855
Adjusted R-squared	0.542321	S.D. dependent var		25.06187
S.E. of regression	16.95484	Akaike info criterion		8.499315
Sum squared resid	6948643.	Schwarz criterion		8.501992
Log likelihood	-102748.7	Hannan-Quinn criter.		8.500183
F-statistic	4093.951	Durbin-Watson stat		0.574655
Prob(F-statistic)	0.000000			

Pooled Data Equation 4

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 2953

Total panel (unbalanced) observations: 24180

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.261551	0.561629	12.92945	0.0000
EPS	5.843380	0.079957	73.08181	0.0000
BVPS	0.699942	0.008674	80.68986	0.0000
GDP	0.607556	0.055488	10.94937	0.0000
TRADE	0.033389	0.003234	10.32607	0.0000
MCDC	-0.012603	0.001274	-9.894460	0.0000
BCP	-0.038720	0.003985	-9.717082	0.0000
R-squared	0.539384	Mean dependent var		16.77855
Adjusted R-squared	0.539270	S.D. dependent var		25.06187
S.E. of regression	17.01127	Akaike info criterion		8.505918
Sum squared resid	6995261.	Schwarz criterion		8.508261
Log likelihood	-102829.6	Hannan-Quinn criter.		8.506678
F-statistic	4717.793	Durbin-Watson stat		0.574597
Prob(F-statistic)	0.000000			

Pooled Data Equation 5

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 2953

Total panel (unbalanced) observations: 24180

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.536367	0.741231	0.723616	0.4693
EPS	5.758020	0.079818	72.13952	0.0000
BVPS	0.680134	0.008755	77.68320	0.0000
GDP	0.901182	0.059942	15.03414	0.0000
TRADE	0.021454	0.003352	6.400825	0.0000
LGFR	4.184664	0.367887	11.37488	0.0000
LGGR	7.092660	0.488929	14.50652	0.0000
LGSC	1.712142	0.339476	5.043477	0.0000
MCDC	-0.009916	0.001296	-7.654161	0.0000
BCP	0.001500	0.004851	0.309295	0.7571
R-squared	0.543673	Mean dependent var		16.77855
Adjusted R-squared	0.543503	S.D. dependent var		25.06187
S.E. of regression	16.93294	Akaike info criterion		8.496812
Sum squared resid	6930129.	Schwarz criterion		8.500159
Log likelihood	-102716.5	Hannan-Quinn criter.		8.497897
F-statistic	3199.601	Durbin-Watson stat		0.576457
Prob(F-statistic)	0.000000			

CL Group (Reduced Model)

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 1287

Total panel (unbalanced) observations: 10446

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.234794	0.093449	13.21353	0.0000
EPS	11.15535	0.113296	98.46240	0.0000
BVPS	0.367037	0.013845	26.51059	0.0000
R-squared	0.675675	Mean dependent var		8.290469
Adjusted R-squared	0.675613	S.D. dependent var		14.24287
S.E. of regression	8.112022	Akaike info criterion		7.024859
Sum squared resid	687200.6	Schwarz criterion		7.026942
Log likelihood	-36687.84	Hannan-Quinn criter.		7.025562
F-statistic	10878.10	Durbin-Watson stat		0.579165
Prob(F-statistic)	0.000000			

CL Group (Full Model)

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 1287

Total panel (unbalanced) observations: 10446

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.907065	0.609240	6.413012	0.0000
EPS	10.95099	0.113326	96.63268	0.0000
BVPS	0.357565	0.013686	26.12686	0.0000
GDP	0.316084	0.048124	6.568097	0.0000
TRADE	0.009140	0.002115	4.321509	0.0000
MCDC	-0.003733	0.000808	-4.622316	0.0000
BCP	-0.022578	0.003941	-5.729150	0.0000
R-squared	0.684641	Mean dependent var		8.290469
Adjusted R-squared	0.684460	S.D. dependent var		14.24287
S.E. of regression	8.000638	Akaike info criterion		6.997590
Sum squared resid	668202.6	Schwarz criterion		7.002451
Log likelihood	-36541.41	Hannan-Quinn criter.		6.999231
F-statistic	3777.165	Durbin-Watson stat		0.592863
Prob(F-statistic)	0.000000			

FL Group (Reduced Model)

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 819

Total panel (unbalanced) observations: 6885

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.341561	0.329214	16.22519	0.0000
EPS	8.509326	0.163982	51.89174	0.0000
BVPS	0.530957	0.015182	34.97232	0.0000
R-squared	0.556349	Mean dependent var		25.06189
Adjusted R-squared	0.556220	S.D. dependent var		31.01138
S.E. of regression	20.65880	Akaike info criterion		8.894595
Sum squared resid	2937140.	Schwarz criterion		8.897574
Log likelihood	-30616.64	Hannan-Quinn criter.		8.895622
F-statistic	4315.095	Durbin-Watson stat		0.585665
Prob(F-statistic)	0.000000			

FL Group (Full Model)

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 819

Total panel (unbalanced) observations: 6885

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.694352	1.287004	3.647503	0.0003
EPS	8.029909	0.165295	48.57936	0.0000
BVPS	0.524166	0.015088	34.74096	0.0000
GDP	0.939427	0.154460	6.081995	0.0000
TRADE	0.005288	0.006763	0.781953	0.4343
MCDC	0.085615	0.010607	8.071229	0.0000
BCP	-0.059285	0.011046	-5.367096	0.0000
R-squared	0.569850	Mean dependent var		25.06189
Adjusted R-squared	0.569475	S.D. dependent var		31.01138
S.E. of regression	20.34794	Akaike info criterion		8.864852
Sum squared resid	2847757.	Schwarz criterion		8.871803
Log likelihood	-30510.25	Hannan-Quinn criter.		8.867249
F-statistic	1518.629	Durbin-Watson stat		0.568899
Prob(F-statistic)	0.000000			

GL Group (Reduced Model)

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 338

Total panel (unbalanced) observations: 2633

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.27608	0.674437	15.23652	0.0000
EPS	8.215491	0.293448	27.99642	0.0000
BVPS	0.464959	0.032989	14.09430	0.0000
R-squared	0.471227	Mean dependent var		32.26801
Adjusted R-squared	0.470825	S.D. dependent var		33.13625
S.E. of regression	24.10477	Akaike info criterion		9.203836
Sum squared resid	1528136.	Schwarz criterion		9.210531
Log likelihood	-12113.85	Hannan-Quinn criter.		9.206260
F-statistic	1171.889	Durbin-Watson stat		0.667896
Prob(F-statistic)	0.000000			

GL Group (Full Model)

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 338

Total panel (unbalanced) observations: 2633

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.43062	11.46181	1.433510	0.1518
EPS	7.836155	0.294318	26.62476	0.0000
BVPS	0.490803	0.032867	14.93315	0.0000
GDP	0.493221	0.253384	1.946537	0.0517
TRADE	0.018743	0.071669	0.261516	0.7937
MCDC	0.234421	0.053727	4.363222	0.0000
BCP	-0.222739	0.068538	-3.249884	0.0012
R-squared	0.485211	Mean dependent var		32.26801
Adjusted R-squared	0.484035	S.D. dependent var		33.13625
S.E. of regression	23.80201	Akaike info criterion		9.180072
Sum squared resid	1487723.	Schwarz criterion		9.195693
Log likelihood	-12078.56	Hannan-Quinn criter.		9.185728
F-statistic	412.5196	Durbin-Watson stat		0.644844
Prob(F-statistic)	0.000000			

SCL Group

Dependent Variable: SP

Method: Least Squares

Sample: 1 4216

Included observations: 4216

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-26.33666	1.998326	-13.17936	0.0000
EPS	0.481360	0.126896	3.793333	0.0002
BVPS	0.807903	0.019133	42.22604	0.0000
GDP	0.438675	0.143624	3.054327	0.0023
TRADE	0.546580	0.042134	12.97242	0.0000
MCDC	-0.030184	0.009541	-3.163679	0.0016
BCP	-0.072452	0.015126	-4.789869	0.0000
R-squared	0.359234	Mean dependent var		14.60871
Adjusted R-squared	0.358320	S.D. dependent var		19.97013
S.E. of regression	15.99706	Akaike info criterion		8.384345
Sum squared resid	1077108.	Schwarz criterion		8.394883
Log likelihood	-17667.20	Hannan-Quinn criter.		8.388071
F-statistic	393.2827	Durbin-Watson stat		1.663050
Prob(F-statistic)	0.000000			

MB Group

Dependent Variable: SP

Method: Least Squares

Sample: 1 13295

Included observations: 13295

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.260582	0.659913	-0.394873	0.6929
EPS	9.481468	0.117661	80.58302	0.0000
BVPS	0.572402	0.013435	42.60460	0.0000
GDP	0.459833	0.058779	7.823073	0.0000
TRADE	0.029048	0.002863	10.14604	0.0000
MCDC	-0.012470	0.001079	-11.55413	0.0000
BCP	0.004970	0.004323	1.149671	0.2503
R-squared	0.616119	Mean dependent var		10.47871
Adjusted R-squared	0.615946	S.D. dependent var		16.77197
S.E. of regression	10.39394	Akaike info criterion		7.520850
Sum squared resid	1435557.	Schwarz criterion		7.524797
Log likelihood	-49987.85	Hannan-Quinn criter.		7.522167
F-statistic	3554.482	Durbin-Watson stat		1.765488
Prob(F-statistic)	0.000000			

BB Group

Dependent Variable: SP

Method: Least Squares

Sample: 1 10885

Included observations: 10885

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.634215	1.366298	6.319422	0.0000
EPS	4.891745	0.115290	42.42995	0.0000
BVPS	0.698966	0.012458	56.10366	0.0000
GDP	0.840261	0.104151	8.067722	0.0000
TRADE	0.022371	0.007238	3.090786	0.0020
MCDC	0.068462	0.008689	7.879551	0.0000
BCP	-0.082342	0.010176	-8.091563	0.0000
R-squared	0.480833	Mean dependent var		24.47321
Adjusted R-squared	0.480546	S.D. dependent var		30.72540
S.E. of regression	22.14476	Akaike info criterion		9.033722
Sum squared resid	5334466.	Schwarz criterion		9.038413
Log likelihood	-49159.03	Hannan-Quinn criter.		9.035303
F-statistic	1679.131	Durbin-Watson stat		1.684647
Prob(F-statistic)	0.000000			

CL MB

Dependent Variable: SP

Method: Least Squares

Sample: 1 10051

Included observations: 10051

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.948865	0.612513	4.814368	0.0000
EPS	11.00467	0.111475	98.71893	0.0000
BVPS	0.436786	0.013775	31.70851	0.0000
GDP	0.210054	0.056462	3.720261	0.0002
TRADE	-0.002304	0.003046	-0.756376	0.4494
MCDC	-5.09E-05	0.001040	-0.048918	0.9610
BCP	-0.015350	0.003980	-3.856690	0.0001
R-squared	0.663041	Mean dependent var		7.509776
Adjusted R-squared	0.662840	S.D. dependent var		12.09829
S.E. of regression	7.024932	Akaike info criterion		6.737504
Sum squared resid	495668.0	Schwarz criterion		6.742529
Log likelihood	-33852.33	Hannan-Quinn criter.		6.739205
F-statistic	3293.969	Durbin-Watson stat		1.632468
Prob(F-statistic)	0.000000			

CL BB

Dependent Variable: SP

Method: Least Squares

Sample: 1 395

Included observations: 395

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-36.91443	31.09697	-1.187075	0.2359
EPS	11.10845	0.662800	16.75989	0.0000
BVPS	0.125009	0.074544	1.676989	0.0944
GDP	0.293587	0.210848	1.392407	0.1646
TRADE	0.193988	0.119435	1.624210	0.1051
MCDC	0.113701	0.072760	1.562677	0.1189
BCP	0.002184	0.070262	0.031077	0.9752
R-squared	0.677353	Mean dependent var		28.15564
Adjusted R-squared	0.672364	S.D. dependent var		35.11608
S.E. of regression	20.10028	Akaike info criterion		8.856907
Sum squared resid	156760.2	Schwarz criterion		8.927419
Log likelihood	-1742.239	Hannan-Quinn criter.		8.884844
F-statistic	135.7588	Durbin-Watson stat		1.219336
Prob(F-statistic)	0.000000			

FL MB

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 99

Total panel (unbalanced) observations: 901

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.62765	23.85656	0.696985	0.4860
EPS	8.105307	0.522824	15.50293	0.0000
BVPS	0.434323	0.054310	7.997137	0.0000
GDP	0.793281	0.460603	1.722267	0.0854
TRADE	0.132364	0.069175	1.913466	0.0560
MCDC	0.059119	0.039968	1.479169	0.1394
BCP	-0.300304	0.168547	-1.781724	0.0751
R-squared	0.448312	Mean dependent var		29.00661
Adjusted R-squared	0.444609	S.D. dependent var		28.14930
S.E. of regression	20.97814	Akaike info criterion		8.932577
Sum squared resid	393433.5	Schwarz criterion		8.969897
Log likelihood	-4017.126	Hannan-Quinn criter.		8.946833
F-statistic	121.0802	Durbin-Watson stat		0.540016
Prob(F-statistic)	0.000000			

FL BB

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 720

Total panel (unbalanced) observations: 5984

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.545726	1.601850	2.213520	0.0269
EPS	8.033237	0.174187	46.11859	0.0000
BVPS	0.531223	0.015724	33.78479	0.0000
GDP	0.931312	0.164184	5.672353	0.0000
TRADE	0.012427	0.009690	1.282489	0.1997
MCDC	0.082496	0.011364	7.259705	0.0000
BCP	-0.050760	0.012063	-4.207952	0.0000
R-squared	0.584260	Mean dependent var		24.46794
Adjusted R-squared	0.583842	S.D. dependent var		31.37899
S.E. of regression	20.24267	Akaike info criterion		8.854632
Sum squared resid	2449170.	Schwarz criterion		8.862466
Log likelihood	-26486.06	Hannan-Quinn criter.		8.857353
F-statistic	1399.961	Durbin-Watson stat		0.575798
Prob(F-statistic)	0.000000			

GL BB

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 338

Total panel (unbalanced) observations: 2633

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.27608	0.674437	15.23652	0.0000
EPS	8.215491	0.293448	27.99642	0.0000
BVPS	0.464959	0.032989	14.09430	0.0000
R-squared	0.471227	Mean dependent var		32.26801
Adjusted R-squared	0.470825	S.D. dependent var		33.13625
S.E. of regression	24.10477	Akaike info criterion		9.203836
Sum squared resid	1528136.	Schwarz criterion		9.210531
Log likelihood	-12113.85	Hannan-Quinn criter.		9.206260
F-statistic	1171.889	Durbin-Watson stat		0.667896
Prob(F-statistic)	0.000000			

SCL MB

Dependent Variable: SP

Method: Least Squares

Sample: 1 2343

Included observations: 2343

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-69.10939	5.642616	-12.24776	0.0000
EPS	6.296064	0.311000	20.24458	0.0000
BVPS	0.834693	0.034779	23.99976	0.0000
GDP	0.052714	0.143996	0.366080	0.7143
TRADE	0.704167	0.065087	10.81886	0.0000
MCDC	0.088303	0.014078	6.272394	0.0000
BCP	-0.005630	0.019597	-0.287307	0.7739
R-squared	0.584763	Mean dependent var		16.08992
Adjusted R-squared	0.583697	S.D. dependent var		21.51175
S.E. of regression	13.87972	Akaike info criterion		8.101718
Sum squared resid	450022.7	Schwarz criterion		8.118924
Log likelihood	-9484.163	Hannan-Quinn criter.		8.107985
F-statistic	548.2843	Durbin-Watson stat		1.876238
Prob(F-statistic)	0.000000			

SCL BB

Dependent Variable: SP

Method: Panel Least Squares

Sample: 2006 2019

Periods included: 14

Cross-sections included: 228

Total panel (unbalanced) observations: 1873

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.383789	12.36823	-0.435292	0.6634
EPS	-1.118873	0.131116	-8.533465	0.0000
BVPS	0.550022	0.021914	25.09865	0.0000
GDP	0.044080	0.316390	0.139322	0.8892
TRADE	0.316210	0.151181	2.091592	0.0366
MCDC	0.024513	0.019875	1.233410	0.2176
BCP	-0.104729	0.033362	-3.139163	0.0017
R-squared	0.289777	Mean dependent var		12.75581
Adjusted R-squared	0.287493	S.D. dependent var		17.68708
S.E. of regression	14.92968	Akaike info criterion		8.248310
Sum squared resid	415922.8	Schwarz criterion		8.268997
Log likelihood	-7717.542	Hannan-Quinn criter.		8.255931
F-statistic	126.8907	Durbin-Watson stat		1.105174
Prob(F-statistic)	0.000000			