THE RELEVANCE AND PERFORMANCE OF THE FINANCIAL VARIABLES OF LISTED FIRMS IN WORLD STOCK MARKETS

BY

MOSES SAROH NEEBEE

(REG. NO. 2008417003F)

BEING A DOCTORAL DISSERTATION SUBMITTED TO THE DEPARTMENT OF BANKING AND FINANCE, NNAMDI AZIKIWE UNIVERSITY, AWKA IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY (PhD) IN BANKING AND FINANCE.

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CERTIFICATION

This dissertation written by Moses Saroh Neebee with Registration Number 2008417003F, under the guidance of the Department of Banking and Finance and Post-graduate Committee and approved by its members, has been submitted and accepted by the Post-graduate School of Nnamdi Azikiwe University, Awka in partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy (PhD) in Banking and Finance.

Supervisor	**Prof. A. U. Mbachu**	**……**	**……**
		Signature	Date
Head, Department of Banking and Finance	**Dr. C. I. N Nwakoby**	…….	……
		Signature	Date
Dean, Faculty of Management Sciences	**Prof. S. N. O Ibenta**	……..	……
		Signature	Date
External Examiner	**Prof. J. U. J Onwumere**……		…….
		Signature	Date
Dean School of Post-Graduate Studies	**Prof. L. Anike**	…….	……
		Signature	Date

DEDICATION

This dissertation is dedicated to the Almighty God who graciously saw me through the programme.

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ABSTRACT

The objective of this study is to evaluate the relevance and performance of the financial variables of listed firms in world stock markets. Working with a sample of twelve world stock exchanges (consisting of six developed and six emerging stock exchanges respectively) that were selected using judgment sampling technique based on availability of data; the study tested and compared: (i) the relationship between the financial variables and share prices in the developed stock markets and emerging stock markets, and (ii) the performance of the financial variables in the developed stock markets and the emerging stock markets. The research is based on a theoretical framework that combines two conceptual models: (i) the Ohlson (1995) model; and (ii) the measurement view of value relevance. Data for the study were obtained from secondary sources; the World Stock Exchange Fact Book; 2012 Edition while that for the Nigeria Stock Exchange was computed from the Nigeria Stock Exchange Fact Books 2002-2012. The obtained data were analyzed using tables, simple and appropriate descriptive statistics, correlation matrix *as* well as OLS regression analysis. *Average price-earnings ratio, price-book value ratio and dividend yield are the independent variables while average share price is the dependent variable for the relevance tests. For the performance tests, average price-earnings ratio, price-book value ratio and dividend yield are the independent variables and the levels of stock market development, the dependent variables. The first two hypotheses were tested using the OLS method of multiple regression while the third, fourth and fifth hypotheses were tested with the single factor analysis of variance. Findings show that the financial variables were relevant to share prices in the developed stock markets (with price-earnings ratio and price-book value ratio having positive relationships and dividend yield having negative relationship) but not relevant to share prices (with price-earnings ratio and price-book value ratio having negative relationships and dividend yield having positive relationship) in the emerging stock markets. Results also show that the mean size of price-earnings ratio do not differ significantly while the mean sizes of price-book value ratio and dividend yield were significantly different between the developed stock markets and emerging stock markets. It is therefore concluded that the liberalization of emerging stock markets and integration of world stock markets that were most prominent during the period of the study (1995 – 2011) did not have equal effects on the relevance and performance of the financial variables for listed firms in the developed stock markets and emerging stock markets. The Researcher therefore recommended among others that; macroeconomic policy makers in emerging countries should do more to further improve corporate reporting and governance by listed firms and their respective stock markets. This is expected to increase investors' confidence in underlying published financial variables and in effect improve their relevance and performance.*

Key Words: Comparative Evaluation, Relevance, Performance, Financial Variables

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The concept of relevance of financial information deals with the usefulness of financial statement data in equity valuation. That is, it has to do with the ability of financial data to summarize or capture information that affects the market values of companies. This relevance according to Abiodun (2012), “is such that influences the economic decisions of users by helping them to evaluate past, present and future events”.

Equity investors whether in the developed or emerging economies to some extent rely on historical accounting information of the underlying securities for their investment decisions. As Nilsson (2003) observed, from the perspective of an actual or potential equity investor, it is desirable that a firm’s financial statement information in general and accounting information in particular be usable in generating indications of equity value.

There is abundance of relevance of financial information literature for studies of developed and emerging stock markets. There are also studies testing the relevance of different accounting variables like earnings, book values; etc over time. The results of these studies are varied between those that find decline in value and those that find increase in value of accounting information over time.

Some recent studies that find decline in value relevance are: Core, Guay and Buskirk (2003), Wiedman and Marquardi (2004), Thinggaarda and Damkierb (2008). Some other recent studies that find increase in value relevance of accounting information include: Qyestein, Kjelll and Frode (2007), and Khanagha, Mohamad and Hassan (2011).

None of the previous studies known to the researcher has compared the relevance and performance of the three basic financial variables that transmit corporate earnings, book values, and dividends to investors within and among listed firms in stock markets at different levels of development.

This study therefore comparatively evaluates the relevance and performance of these financial variables in selected developed stock markets and emerging stock markets.

The research consists of two basic components:

(i) Testing and comparing the relevance of the financial variables to market values of listed firms for the developed stock markets and the emerging stock markets.

(ii) Measuring and statistically comparing the performance of earnings, book values and dividend variables for listed firms in the developed stock markets with those of the emerging stock markets.

To provide empirical evidence, a sample of twelve world stock exchanges, consisting of six each from the developed stock markets and emerging stock markets respectively are analyzed by the study.

The purpose is to determine if there is any causal relationship between these financial variables within the developed stock markets and emerging stock markets. The study also seeks to determine homogeneity in the performance of earnings, book values and dividend payout relative to share prices for listed firms in the developed stock markets and emerging stock markets for the period, 1995 - 2011.

1. 2 **Statement of the Problem**

Given the main purpose of financial statements which is to provide users with data for their decision making, it becomes necessary that researchers periodically ascertain and compare value relevance in different industries, markets, and periods as well as under different assumptions. It is also important to periodically measure and compare the differences in earnings, net-book values and dividends relative to share prices in the different markets.

Since this study deals with the comparative relevance and performance of financial variables published by stock markets; the perspective of the equity investor is important and the natural questions to ask are: (i) whether the information conveyed by published financial data of listed firms is relevant to investors' equity valuation? (ii) Is this relevance the same for both the developed stock markets and the emerging stock markets? (iii) Whether earnings, net-book values and dividend ratios relative to market prices of listed firms' shares is similar for the developed stock markets and emerging stock markets.

There exists an abundance of literature dealing with the relevance of financial information to firm valuation. Concerning the related literature reviewed, the researcher identified some critical issues which necessitated further studies in this area.

One major problem identified is that; these previous studies have only evaluated the relevance of financial information in particular markets or have merely compared a number of markets at similar levels of development. This is of concern particularly to foreign equity investors and portfolio managers who need to know the relevance and performance of the financial variables for firms in both the developed stock markets and emerging stock markets.

Another issue resolved by this study is; the types of internal financial variables tested by previous researches. The common accounting based financial variables published by stock markets are those that convey information about firms' earnings, book values and dividends. Most of the previous studies have focused on historical accounting earnings, net-book value and dividend measures like; earnings per share, net-book value per share and dividend per share. The major problem with these currency based measures is that they are not appropriate for cross-country or comparative stock market analysis. To overcome this, the financial variables are employed in this study.

The third problem resolved by this study is; the comparative measurement of earnings, book values or dividends relative to share prices for listed firms in the developed stock markets and emerging stock markets. The researcher considers this important as the size of earnings, book values or dividends relative to market prices of shares of listed

firms can be significant determinants of an investor's investment preference. This comparative measurement has not been empirically tested by any study known to the researcher.

These critical issues raised combine to make available literature relating to the comparative evaluation of relevance and performance the of financial variables in developed stock markets and emerging stock markets to be very fragmentary and therefore creates a gap in knowledge. It is this gap that the study fills by comparatively evaluating the relevance and performance of the financial variables using data from twelve stock markets; (six each for the developed economies and emerging economies respectively) for the period, 1995 - 2011.

The preference for 1995 - 2011 is because most of this period witnessed the most significant strides in liberalization and integration of world stock markets. Most of the period according to Dreyer (2010), witnessed major changes and growth particularly in emerging markets; it was a period of monumental interest in world stock market activities and development.

The study by implication also attempts to find if the liberalization of emerging stock markets and globalization of world stock markets which were most prominent during this period have resulted in similarity in relevance and mean sizes of the fundamental variables for both developed stock markets and emerging stock markets.

1.3 **Objectives of the Study**

The general objective of this study is to evaluate the relevance and performance of the financial variables of listed firms in world stock markets.

The study specifically seeks to:

(i) Evaluate the relationship between the financial variables and share prices of listed firms in the developed stock markets.

(ii) Evaluate the relationship between the financial variables and share prices of listed firms in the emerging stock markets.

(iii) Evaluate and compare the performance of price-earnings ratios for listed firms in the developed stock markets and those in the emerging stock markets.

(iv) Evaluate and compare the performance of price-book value ratios for listed firms in the developed stock markets and those in the emerging stock markets.

(v) Evaluate and compare the performance of dividend yields between listed firms in the developed stock markets and those in the emerging stock markets.

(vi) Relate findings to the liberalization and integration of world markets that were most prominent during, 1995 – 2011 had similar effects on the relevance and performance of financial variables of listed firms in the developed as well as emerging stock markets.

1.4 **Research Questions**

To achieve its objectives, the research raised and answered the following questions:

(i) Is there any relationship between the financial variables and share prices of listed firms in the developed stock markets?

(ii) Is there any relationship between the financial variables and share prices of listed firms in the emerging stock markets?

(iii) Is the performance of price-earnings ratios for listed firms in the developed stock markets and those in the emerging stock markets similar?

(iv) Is the performance of price-book value ratios for listed firms in the developed stock markets and those in the emerging stock markets similar?

(v) Is the performance of dividend yields for listed firms in the developed stock markets and those in the emerging stock markets similar?

(vi) Did the liberalization and integration of world markets of 1995 – 2011; affect relevance and performance of financial variables of listed firms in developed and emerging stock markets similarly?

1.5 **Research Hypotheses**

With due consideration of the research problem and questions raised, the study formulated and tested the following null hypotheses:

Hypothesis One

There is no significant relationship between the financial variables and share prices of listed firms in the developed stock markets.

Hypothesis Two

There is no significant relationship between the financial variables and share prices of listed firms in the emerging stock markets.

Hypothesis Three

The performance of price-earnings ratios for listed firms in the developed stock markets and those in the emerging stock markets does not differ significantly.

Hypothesis Four

The performance of price-book value ratios for listed firms in the developed stock markets and those in the emerging stock markets does not differ significantly.

Hypothesis Five

The performance of dividend yields for listed firms in the developed stock markets and those in the emerging stock markets does not differ significantly.

1.6 **Significance of the Study**

Stock markets around the world exist to provide a network of economic transactions for trading of shares of listed companies and their derivatives at agreeable prices. These shares and derivatives are the main securities listed on a stock exchange.

Studies have shown that the efficiency of stock markets is related to its level of development. There is also some evidence of value relevance of accounting fundamental information to stock prices. There are also other results showing decline in value relevance in specific sectors, markets and those at the same level of development. Evidence also exists for relationships between earnings and book values with market values. But in all these studies very little attention has been paid to the relevance and performance of price-earnings ratios, price-book value ratios and dividend yields in stock markets at different levels of development.

A study that comparatively evaluates the relevance and performance of the fundamental variables: earnings, net-book values and dividends relative to share prices of listed firms in developed and emerging stock markets is therefore very significant. The study would therefore be of significance to the following:

i) International investors who may desire to invest in markets at different levels of development.

ii) Macroeconomic policy makers in formulating policies that will further improve development of stock markets particularly in the developing and emerging countries.

iii) Finance managers who by improving their understanding of the relationships between price-earnings ratios, price-book value ratios and dividend yields with market values of listed firms in stock markets at the same level of development and those at different levels of development may improve their income distribution function.

iv) Stock brokers, dealers, investment analyst and other stock market participants whose skills in predicting the relevance and performance of financial variables in the different markets studied will improve.

v) Markets participants who may have greater confidence in relying on published accounting data of quoted firms for their buy or sell decisions.

vi) Academics and other stock market researchers who stand to benefit from the comparative relevance and performance of financial variables literature and data generated by this study.

1.7 **Scope and Limitations of the Study**

The study sample covers all listed firms in the (12) stock exchanges selected for the study and consists of six (6) each from the developed stock market and emerging stock market categories respectively. The sample is selected using the judgment sampling technique. This sampling technique according to Paneerselvan (2010:201) is applied if the population is not equally qualified to become members of the sampling frame.

The researcher is confident that the sample sufficiently represents the population and as a corollary they do not differ materially had the whole been studied.

The sample includes only stock markets from the developed stock market and emerging stock market categories with at least 75% non-missing data observations for average price-earnings ratio, price-book value ratio, dividend yield (%) and market price per share. The respective year - end data for each of these variables for the period, 1995-2011 are presented and analyzed in chapter four.

In summary, the scope of this study covers all the firms listed in the twelve stock exchanges shown Tables 1.1 and 1.2 below.

Table 1.1 **Developed Stock Exchanges Selected for the Study**

S/No	**Name of Stock Exchange**	**Country**
1	Hong Kong Stock Exchange	Hong Kong
2	Johannesburg Stock Exchange	South Africa
3	Madrid Stock Exchange	Spain
4	Tokyo Stock Exchange	Japan
5	Mexican Stock Exchange	Mexico
6	Warsaw Stock Exchange	Poland

Source: *FTSE Country Classification, September, 2009;

*Reclassified by Researcher for Developed and Emerging Markets only.

Table 1.2 **Emerging Stock Exchanges Selected for the Study**

S/No	**Name of Exchange**	**Country**
1	Istanbul Stock Exchange	Turkey
2	Nigerian Stock Exchange	Nigeria
3	Philippine Stock Exchange	Philippine
4	Prague Stock Exchange	Czech Republic
5	Taiwan Stock Exchange	Taiwan
6	Stock Exchange of Thailand	Thailand

Source: *FTSE Country Classification, September, 2009

*Reclassified by Researcher for Developed and Emerging Markets only

Considering the nature of the research data obtained and analyzed, the following factors are possible limitations but are however deemed to be insignificant to the findings of the study:

(i) The stock data used are as published and compiled from the different stock exchanges and any inherent error or differences in presentation may affect the results.

(ii) Only end of year stock market data are used and assuming that there were significant fluctuations in-between the periods; these are likely to affect the results.

(iii) Any difference in trading patterns and pricing rules in the different markets are likely to affect the results.

(iv) Differences in each country's macroeconomic variables such as inflation, taxation, interest rates, etc are likely to affect the results.

(v) Differences in firm and country accounting policies and reporting systems are likely to affect the results.

(vi) Any difference in information diffusion in each market is likely to affect the results.

1.8 **Operational Definition of Terms**

The following key terms are operationally defined in the context that they are used for the purpose of this study:

1.8.1 Book Value

This is the value at which an asset is carried in the balance sheet. From the shareholders point of view; net asset value (net book value) is important and is measured as:

Total assets - (Intangible assets + liabilities)

It is the total value of a company that shareholders will theoretically receive if a company were liquidated. When related to the market value; *the price-book ratio* indicates whether a company is over or under priced. This price-book value ratio is calculated as:

$$\frac{\text{Market price per share}}{\text{Book value per share}} \times 100$$

1.8.2 Dividend Payout

This is the portion of a company's earnings that is paid out to shareholders as dividend. When related to the firms earnings; the *dividend payout* ratio is equal to:

$$\frac{\text{Dividend per share}}{\text{Earnings per share}} \quad X\ 100$$

When related to market price of a company's share, *dividend yield* is equal to:

$$\frac{\text{Dividend per share}}{\text{Market price per share}} \quad X100$$

1.8.3 Share Price

Share price is the same as the market price of a company's equity in the stock market. This share price is seen as the fair value for each unit of the firms share and is based on an investor's evaluation of all factors he considers relevant to the firm's current and future income streams.

1.8.4 Stock Market Development

Several factors determine the classification between developed, emerging and developing stock markets. These variables include: a country's economic development, sustainability of economic development, monetary stability, size and liquidity requirements, market and regulatory environment, process of accessibility; etc.

1.8.5 Developed Stock Markets

Developed stock markets are the stock markets of countries with GNI per capita above 25% of the World Bank high income threshold for three consecutive years, have at least USD 2,020mm capitalization, very high openness to foreign ownership, ease of capital

inflows/outflow, stable operational institutional framework among other development criteria.

1.8.6 Emerging Stock Markets

Emerging stock markets are those countries that are almost developed with at least USD 1,010mm capitalization, significant openness to foreign ownership, ease of capital inflows/outflow, good and modest operational institutional framework among other development criteria.

1.8.7 Financial Variables

These are the ratios or indices that relate a company's accounting data to stock market sentiment (an indication of how stock market participants value accounting data). They are the indices published by the stock markets that express relationships between earnings, net-book values, and dividends as proportions of share price. These variables are considered fundamental for comparative stock market relevance evaluations. They are:

i) Price-earnings ratios as indicator for earnings

ii) Price-book value ratios as indicator for net-book values

iii) Dividend yields as indicator for dividend payout.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This section sets the theoretical background upon which the assumptions of the study are based and on the basis of this, existing related theoretical and empirical literature is reviewed. The purpose is to focus on the critical exposition of literature related to the variables under study. The section is discussed under the following sub-headings:

1. Theoretical literature

    (i) Theoretical framework

    (ii) Models and views of relevance of financial information

    (iii) The concept of financial variables

    (iv) Developments and regulations in accounting and stock markets

2. Empirical literature

    (i) Accounting information and decision making

    (ii) Relevance of financial information studies in developed countries

    (iii) Relevance of financial information studies in emerging countries

    (iv) Performance of financial variables in developed and emerging stock markets.

3. Summary of literature reviewed

4. Stock market development

2.1 **Theoretical Framework**

To achieve the objectives of this study, the researcher develops a theoretical framework that specifies and compares how changes in the financial variables: price-earnings ratio, price-book value ratio and dividend yield affect the relevance and performance of listed firms in developed stock markets and emerging stock markets.

The underlying problems resolved by the study are:

1. If these financial variables are relevant to share pricing in stock markets,
2. If the relevance of the financial variables, is similar for both the developed stock markets and emerging stock markets, and
3. If the performance of price-earnings ratio, price-book value ratio and dividend yield is similar for both the developed stock markets and emerging stock markets.

The fundamental logic evolved to resolve these underlying problems is based on the following:

1. A firm's financial variables: price-earnings ratio, price-book value ratio and dividend yield are the primary determinants of its share price,
2. Changes in these variables: price-earnings ratio, price-book value ratio and dividend yield are the significant indicators of changes in share prices of listed firms in each stock market,

3. The extent to which changes in financial variables: price-earnings ratio, price-book value ratio and dividend yield affect share prices of listed firms differs between the developed stock markets and emerging stock markets; and

4. The performance of price-earnings ratios, price-book value ratios and dividend yields for listed firms in the developed stock markets and emerging stock markets are not similar.

The study therefore works with a conceptual framework that combines two distinct theoretical components:

1. The Ohlson (1995) Model
2. The Measurement view of value relevance, and

2.1.1 **Ohlson (1995) Model**

The Ohlson (1995) model was developed after modifying the residual income valuation model which implies that; “the value of a firm is equal to its book value of equity and the present value of anticipated abnormal earnings”. The model according to Vazquez, Valdes and Valdes (2007) expresses the market value of a firm as a linear function of its book value, the abnormal earnings together with another information dynamics variable.

The model is described under the following assumptions:

1. *The Present value Relation*: This implies that the market value of the firm's equity is equal to the present value of its expected future dividends discounted at the risk free interest rate, and this assumption was based on the original classic dividend discount model.

2. *The Clean Surplus Relation*: This assumption implies that all changes in the book value of equity are reported either as accounting earnings or dividends. And accordingly, the relation between book value of equity, earnings and dividends can be expressed as follows:

$$b_t = b_{t-1} + X_t - d_t \qquad (1)$$

Where b_t = Book value of equity at date t; X_t = Earning for period t; d_t = Dividend paid at date t. According to Ohlson, book value of equity at date t – 1 multiplied by the risk free rate is considered as the normal earnings of the firm. The earnings for the period t minus the normal earnings can be defined as the abnormal earnings:

$$X^2 = X_t - rb_t \qquad (2)$$

Where X^2 = Abnormal earnings for period t (defined as above).

3. *The Linear Information Dynamics*: This assumption which imposed a time-series structure is the most controversial (that is the relation between the current and the next periods abnormal earnings) as linear and stationary. This abnormal

earning as defined is the difference between accounting earnings and normal earnings. Normal earnings are the net book value of equity multiplied by the risk free rate. The linear information dynamic model which assumes a time-series structure on the abnormal earnings is as follows:

$$X^2 = W_{11} X^2 + V_t + £1t + 1, \qquad (3$$

Where $V_t + 1 = YV_t + £_{2t} + 1$ (4)

X^a = Abnormal earnings of year t ($X^a = \overset{t}{X}_t - rb_t$)

V_t = Other information variable at time t

W_{11} = Persistence of abnormal earnings ($0 < W_{11} < 1$)

$£_{1t}$, $£_{2t}$ = Error terms

After the discussion of the abnormal earnings structure, Ohlson (1995:669) shows that with standard assumptions underlying the dividend discount model together with the above mentioned equations (1) and (2), his model equation can be written as follows:

$$P_t = bV_t + \sigma_1 X^a + \sigma_2 V_t \qquad (5)$$

Where P_t = The market value of the firms share equity for the fiscal year- end t

bv_t = The book value of the firms share equity at the end of fiscal year end t

X^a = The abnormal earning per firm's share during the year t (defined as above).

V_t = Other non-accounting value relevant information for the fiscal year-end t.

σ_1, σ_2 = Are coefficients taking values that are a function of the linear information dynamics models and risk free rate for the firm.

2.1.2 **The Measurement View of Value Relevance**

The underlying idea behind the measurement view of value relevance stems from the key role of financial statements which is to summarize business transactions and other events. Under this construct, the value relevance of financial information is measured by its ability to capture or summarize information, regardless of source, that affects equity value (Nilsson, 2003 and Francis and Schipper, 1999).

This is consistent with the view of accounting as a tool of measurement. Its inference is based on the notion that if an accounting item (or other items) has a reliable association with a market metric, then the accounting metric captures or aggregates the information that is used by the market participants to determine prices or returns. In that respect, they can be classified as indirect tests of the usefulness of accounting information for valuation purposes (Dumontier and Raffournier, 2002).

It is important to note that this view is not concerned with the assumption that investors are actually using the accounting information under examination or that the information under examination is the most-timely sourced. The efficient background of markets is not also important for studies of measurement view to value relevance.

The concern of this study therefore is to determine if these fundamental variables: price-earnings ratio, price-book value ratio and dividend yield have relationships with

firm value in the developed stock markets and emerging stock markets and not whether investors rely on them for their pricing decisions or that the stock market is efficient.

2.1.3 **The Concept of Financial Variables**

This concept describes the uniqueness of the financial variables as different from other accounting ratios or variables and their appropriateness for analyzing comparative relevance and performance of financial information in different stock markets.

In finance literature, value relevance studies test various balance sheet and income statement ratios (for example; net book value per share, return on investment, earnings per share, dividend per share, etc) to determine their effect on changes in share price. Of the internal factors that determine stock pricing decisions the most prominent are the firm's earnings, book values and dividends (which are accounting numbers). Analysts study trends in these ratios and compare them with those of similar securities in pricing the underlying equities.

The basis of these ratios is the firms' underlying financial statements which make them only appropriate for studies of relevance analysis for particular country's stock markets and not for comparative research involving different countries.

The reasoning behind this is based on two arguments:

1. The basic accounting information or ratios are derived from firms' historical financial statements and their size depends on firm, industry or country specific factors.

2. Differences in currency values make it inappropriate to use the currency based ratios like net-book value per share, earnings per share, dividend per share, etc for comparing value relevance in different countries.

Historically, market data according to Glezakos, Mylonakis and Kafoures (2012) have always prevailed over accounting data when it comes to identifying the factors that affect stock prices. While financial ratios are derived from historical accounting statements, share price is derived from both company and stock market sentiments and both should be considered in determining stock valuation variables. For this, only those factors that reflect both accounting and investors perception of the market should be considered fundamental to stock value.

The financial variables are therefore those ratios or indices that relate a company's accounting data to stock market sentiment (an indication of how stock market participants value accounting data). These three firms' performance indicators: price-earnings ratio, price-book value ratio and dividend yield are therefore the basic financial variables and the most appropriate measures for earnings, net-book values and dividend payout in comparative stock market relevance studies involving different countries. This is particularly appropriate as these ratios do not only reflect both firm and stock market sentiments in each country, but also because their meanings are the same to both the local as well as foreign equity investors.

2.2 Models and Views of Relevance of Financial Information

The theoretical groundwork of value relevance adopting a measurement view approach according to Beaver (2002); “is a combination of a valuation theory plus contextual accounting and financial reporting arguments that allow the researcher to predict how accounting variables and other information items relate to market value”.

Some common models and views that have been evolved for testing empirically the relevance of financial information to market value include:

(i) The Ohlson (1995) valuation model

(ii) The fundamental view of value relevance

(iii) The measurement view of value relevance

(iv) The prediction view of value relevance

(v) The information view of value relevance

2.2.1 The Ohlson (1995) Valuation Model

The Ohlson valuation model developed in 1995 has made a major impact on market-based research and motivated the adoption of historical price model in value relevance studies. The model underlies the classic belief that the value of a company consists of its book value (net value of investments in it) and earnings (present value of the periods benefits) and that these combine to bring about to bring the “clean surplus” concept of shareholders equity value (Dahmash and Qabajeh 2012, and Vazquez, Valdes and Valdes, 2007). The model which is based on fundamental analysis principles uses the

book value of assets, abnormal earnings and other information to estimate the value of a firm.

Kin and Thomas (2000) analyzed the Ohlson (1995) model and Feltham and Ohlson (1995) framework. After a survey of accounting literature they reveal five possible reasons where the model is not just influential, but will become a classic.

- First it appears that there is consensus among accounting researchers that one of the desirable properties of the OM is its formal linkage between valuation and accounting numbers.
- Second, researchers appreciate the versatility of the model.
- Third, the enthusiasm of the OM appears to be a response to the challenge that traditional approaches used in accounting research find a very weak linkage (low R^2) between the value changes and accounting information.
- Fourth, and related to the previous point, the high R^2 found in analyses that rely on OM is interpreted to suggest that little value relevance is related to variables other than book value of equity, net income, and dividends.
- Finally, the very high explanatory power of the models leads researchers to conclude that OM can be used for policy recommendations.

The valuation model according to Dahmash and Qabajeh (2012) has successfully tested the value relevance of book value and abnormal earnings in a number of studies within different contexts and has been successfully applied in markets with different attributes.

The model expresses the market value of a firm as a linear function of its book value, the abnormal earnings together with another information dynamic variable.

Graham and King (2000) used the model to review the relationship between stock prices and accounting earnings and book values in 6 Asian countries. The major objective of the study was to review the possible effect of various accounting methods on the explaining ability of the abnormal earning model. They argued that the model is useful in respect of settling international accounting standards.

Keong (2010) empirically examined the relationship between share price and the net book value, earnings per share and dividends per share, based on the framework of Ohlson model. The study also attempted to examine whether the inclusion of linear information dynamics besides the accounting variables will increase the explanatory power of the model. The findings show that the residual income model and the Ohlson model in particular, form a useful framework for exploring empirical relationships between share prices and accounting information.

2.2.2 **The Fundamental Analysis View of Value Relevance**

The fundamental analysis view of value relevance sees accounting information to be value relevant in valuation if portfolios formed on the basis of accounting information are associated with abnormal returns.

The approach according to Nilsson (2003) is related to fundamental analysis research in accounting which involves determining a firm's intrinsic value without reference to the

price at which the firm's equity trades at the stock market. According to this approach, accounting information causes stock prices to change by capturing values toward which prices drift. It is not assumed that the market at all times reflects all available information, which means that this approach allows for an inefficient stock market. And depending on the degree of market inefficiency, investors might be able to earn abnormal returns using public accounting information.

2.2.3 **The Measurement View of Value Relevance**

As observed by Abiodun (2012); given that accounting figures have relevant value only when they are considered relevant by investors in their evaluation of the firm and consider them reliable for reflection in share pricing.

This is consistent with a measurement perspective in accounting where according to Marton (1998); accounting is viewed as an instrument for measurement. In this regard, the value relevance of a financial statement is measured by its ability to capture or summarize information that affects equity value, regardless of the source.

The efficient background of markets is not important for studies of measurement view to value relevance. And for this, it is not necessary to assume in such a study that the stock market value is real and assessed without any prediction. The main assumption that is necessary is the background that the share price (or share return) reflects the group belief of investors, and not whether the market is efficient.

2.2.4 **The Prediction View of Value Relevance**

This according to Francis and Schipper (1999) is still related to fundamental analysis research but focuses on the relevant variables to be used in valuation and how to predict them. This definition of value relevance according to Nilsson (2003) regards financial statements as value relevant if it helps in forecasting underlying value attributes derived from valuation theory. Information is therefore said to be value relevant if it can be used to predict future earnings, dividends or future cash flows.

2.2.5 **The Information Views of Value Relevance**

This view according to Oyerinde (2009) is measured in form of market reactions to new information. Francis Schipper (1999) views accounting information as value relevant if it is used by investors when setting prices. Accounting information is hypothesized to be value relevant if it conveys information that modifies investor expectations of firms' future cash flows, and ultimately causes the stock price to change.

2.3 **The Concept of Fundamental Analysis**

Fundamental analysis is a method of evaluating securities that involve attempting to get the intrinsic value by looking at the related economic, financial and other qualitative and quantitative factors. To forecast future prices according to Srinivasan (2012), fundamental analysts use stock valuation ratios to derive a stock's current fair value and forecast future value. If fair value is not equal to the current stock price, fundamental

analysts believe that the stock is either over or under valued and the market price will ultimately gravitate towards the fair value.

As shown in Baresa, Bodgan and Ivanovic (2013), fundamental analysis is one of the most widely used methods for estimating price movements of securities which essentially analyses the impact of micro and macro economic factors on the business of the corporation in order to predict future economic and financial effects. Fundamental analysis also examines various financial statements with the aim of assessing the real value of a company's stock. It follows therefore, that it is not just enough to find a successful business, it is also necessary to find companies that worth more than other investors estimate. With this understanding in mind, fundamentalists add to their portfolios securities they perceive as undervalued while over valued securities are dropped.

The tools of fundamental analysis are the performance indices used as benchmarks in relating one security to other for selection purposes. Fundamental analysis according to little (2004) uses key ratios to determine the financial health of a business. In an efficient market according to Harper (2010) stock prices would be determined primarily by fundamentals which, at the basic level, refer to a combination of two things: (i) an earnings base (earnings per share, for example) and (ii) a valuation multiple (a P/E ratio, for example). Concerning these two things; Harper explains that; an owner of a common stock has a claim on earnings, and earnings per share (EPS) is buying a proportional

share of an entire future stream of earnings. This valuation multiple is the price a buyer is willing to pay for the future stream of earnings.

In carrying out fundamental analysis, financial statement analysis is one common method used to compare the performance of companies that carryout the same or similar activities and roughly of same size. In doing this, the relationship between the financial ratios and share prices of a company over time is observed and compared with similar securities for the same period.

Share price is the most important indicator readily available to investors for their decision to invest or not to invest in a particular company. Theories according to Irfan and Nishat (2002) suggest that share price changes is associated with changes in accounting variables which are relevant for share valuation like payout ratio, dividend yield, capital structure, earnings size of the firm and its growth.

Some common financial ratios that are suitable for fundamental analysis according to Harper (2010) include: earnings per share, price-earnings ratio, dividend yield, etc. Kheradyar and Ibrahim (2011) identify divided yield, earning yield and book-to-market value ratio as having a strong theoretical background based on the predictive models and therefore appropriate for the predictability of stock returns.

These ratios they say comprise specific characteristics: First each has stock price in the denominator, thus when stocks are overpriced; the ratios present lower value and predict low stock return. Second, the ratios follow time variation in discount rates, and the ratios should be positively related to discount rates. The statistical properties of the

ratios have a big impact on tests of stock return predictability, because most of their movements are caused by price changes in the denominator. Finally, financial theories place great emphasis on the role of risk in stock return as well as the relationship between stock returns and financial ratios because these ratios capture information about risk.

In order to interpret the interrelationships between these three key variables; earnings, book value and dividend payout; how they relate with stock price need to be understood.

Tse (2002) observed that low dividend yield appears to be associated with a relatively high price-to-earnings ratio. Variance of dividend yield tends to increase relative to the variance of earnings yield, with a rapid dividend adjustment at higher dividend payout ratios. Irfan and Nishat (2002) reviewing previous studies predict direct relation between payout ratio and the price-earning multiple. Conversely, this means that there is an inverse relation between payout ratio and share price changes suggesting that payout ratio is a relevant factor for share price changes.

Lewellen (2004) is the most recent attempt at finding a model to predict stock prices through financial ratios. He used the price-book value ratio extensively in his study attempting to predict stock prices over a long-term. The study proved successful despite some statistical problems that resulted from his common denominator, share price. Findings show that ratios are still valid tools for predicting stock prices in more recent economic environment.

2.3.1 **Price-Earnings Ratio (PER)**

In an efficient market according to the Financial Times Lexicon (2013), “the share price should reflect a firm’s future value creation potential, greater value creation can indicate future dividends from the company”. It is therefore expected that higher P/E ratio should reflect greater expected future gains or perceived growth opportunities and/or some competitive and/or lower risk.

Halsey (2000) used the relation between the P/E and the (price-to-book value) P/B ratio to describe various types of companies:

I. High Performing Company**:** High P/B, high P/E, expected positive residual income, increasing income.
II. Declining Company**:** High P/B, low P/E, expected positive residual income, decreasing income.
III. Improving Company**:** Low P/B, high P/E, expected negative residual income, increasing income.
IV. Poor Performing Company**:** Low P/B, low P/E, expected negative residual income, decreasing income.

The price-earnings ratio expresses the relationship between market price and earnings per share. Little (2004) sees the P/E ratio as one number people look at than any other as it gives an idea of what the market is willing to pay for the company’s earnings. Loth (2010) describes the P/E ratio as the best known with the investment valuation

professionals and the investing public. Chisholm (2009) describes the P/E ratio in more detail and shows that the ratio is used to rate which shares in a given sector are “dear” and “cheap” to each other. It is possible to compare the P/E ratios of similar companies operating in the same industry as their performance is affected by related factors.

There is a problem with comparing P/E ratios of firms in different industries or markets which can be due to differences in accounting standards. This problem is being overcome with the adoption of international financial reporting standards.

According to Gottwald (2012), many investors are prepared to pay a premium for high growth expectations in the form of a high P/E ratio and also, analysts use P/E ratio in the pricing of new shares in an initial offering. The ratio is used as a measure of relative value when comparing listed companies. When two companies in the same line of business are compared; the one having a higher P/E ratio than a rival one usually means bad value for investors. Between earning per share (EPS) and P/E; the higher the EPS, the lower the P/E ratio; the better for the investor, and lower EPS means higher P/E ratio and bad news for the investor.

One popular tool to keep an eye on according to Krantz (2013) in the stock market is the price-to-earnings ratio, a measure which tells investors how much they are paying on average for a claim on their dollar earnings. P/E ratio as a relative valuation technique has always remained at the centre of attention of market analysts and investors. Researchers, market analysts, fund managers and investors mostly rely on price-earnings ratio for relative attractiveness of equity investments and use it as a valuation

technique for performance evaluation of individual stocks, sectors and markets. It is also a reflection of investors' confidence and sentiment about a firm's future performance and therefore influences investment decisions.

Theories, focusing on stock price volatility, state that price-earnings ratio of individual stocks and markets depict variability across time, indicating that stock markets had always been facing irrational pricing, speculation and financial bubbles. Investors therefore use various valuation techniques to identify whether the stock market is rationally priced or not and how much to pay for every $1 of a firm's earnings.

Anderson and Brooks (2006) show that besides the overall stock market, share prices and P/E ratios vary across sectors because of diverse growth prospects. Typically sectors having companies with mature; stable and moderate potentials have low P/E ratios compared to sectors having relatively young and just-growing companies.

Investors often refer to P/E ratio as a rough indicator of value for a company. A high P/E ratio would imply that investors are very optimistic (bullish) about the future of a company since the price (which reflects market value) is selling far well above current earnings. A low P/E ratio would imply that investors view the company's future as poor and thus, the price the company sells for is relatively low when compared to its earnings. The P/E ratio poses questions like – is the current stock market rationally priced? How much should investors pay for $1 of net earnings?

2.3.2 **Price-Book Value Ratio (PBR)**

This ratio is used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share. It is also known as the price-equity ratio; and is calculated as:

$$\text{PBR} = \frac{\text{Stock Price}}{\text{Total Assets} - (\text{Intangible Assets Plus Liabilities})}$$

According to Gottwald (2012) the P/B ratio compares the market capitalization of a company with its shareholders equity. While the market capitalization is based on forecast sales and profits; the book value of the common stock is based on historic cost of the assets less depreciation and total liabilities. The ratio gives the investor an idea of whether he is paying too much for what would be left of the company if bankruptcy occurs immediately.

When compared with book value, a higher book value yields a lower P/B ratio and the better for the investor and similarly, a lower book value means a higher P/B ratio which is not in the interest of investors. When related to stock price; a higher stock price means a higher P/B ratio which is worse for the investor and a lower stock price yields a lower P/B ratio which is good for the investor. A lower P/B ratio could mean that the stock is under-valued or that something is fundamentally wrong with the company. A higher P/B ratio means the stock is overvalued or that growth is anticipated.

2.3.3 Dividend Yield

Dividend yield is an important ratio to those looking for dividend income. Its importance is therefore not common to all as it depends on whether the investor is growth oriented or traditional. According to Chiang (2006), the more traditional group of investors attributes far more importance to dividends than the growth – oriented group. The latter group perceives dividends as something needed to pacify the shareholder. In all, dividends seem to have positive effect on stock prices whether the effect is induced by growth or some other expectations.

Dividend yield indicates the percentage return that a stockholder will receive on dividends alone (Block and Hirt, 2000:651) it is measured as:

$$\frac{\text{Dividend per share}}{\text{Market Price per share}} \times 100$$

In the relationship between dividend per share and dividend yield, higher dividend per share results in higher dividend yield than lower dividend per share. Shareholders prefer higher dividend yields as it indicates that they are getting higher returns on dividends.

There is a direct relationship between dividend payout and dividend yield; the higher the dividend payout, the higher the dividend yield and the lower the dividend payout, the lower the dividend yield.

2.4 Developments and Regulations in Accounting and Stock Markets

The level of globalization and integration of world economies and stock markets during the last two decades have been unprecedented. These have to a great extent facilitated

the benefits for globally recognized and acceptable financial reporting standards. This has resulted in the emergence of international financial reporting standards (IFRS) which promises transparent comparable and consistent financial information. It has provided additional guide to investors in making optimal investment decisions in international markets.

There is evidence that quality of financial reporting affects value relevance of accounting information. Khanagha (2011) studied value relevance of accounting information in pre and post-periods of intentional financial reporting standard implementation for a sample of UAE companies. The results show accounting information to be value relevant. But a comparison of the results for the periods before and after adoption, show a decline in value relevance of accounting information after the reform in accounting standards. Value relevance studies constitute a large body of literature and there is evidence that results from different countries are often contradictory and this according to Svensson and Larsson (2009) is because accounting regulations differ between countries.

There are also concerns as to whether differences in accounting regulations between different countries cause differences in the comparative quality of accounting information. This difference in country regulation affect information and in turn value relevance of accounting information. The US accounting regulation for example, focuses entirely on the needs of capital market investors while the needs of users outside the

capital markets are given more attention in Sweden, partly because of the connection between tax accounting and financial reporting.

This standardization is even more urgent for the transition economies that are attempting to develop their financial markets. Harmonization of accounting regulations is expected to be value relevant of reported accounting numbers to stock market valuation of corporate equity. Dobija and Klimczak (2008) studied the Warsaw stock exchange in Poland from 1994 through the adoption IFRS and corporate governance codes up to 2008. Findings show that the stock market was weak-form efficient during this period and estimate regressions for value relevance of earnings to corporate value. They also find positive evidence of such relevance but no improvement in the strength of the relationship over time.

Value relevance research according to Hellstron (2005) requires an in-depth knowledge of accounting institutions and accounting standards, that differences in accounting regulations between countries favor research based on case country studies rather than comparative studies where the researcher has limited possibilities to understand the accounting institutions and standards of all countries researched. For accounting information to be relevant and reliable particularly in the developing countries, relevant regulations and institutions need to be developed.

Abdel-Khalik, Weng and Wu (1999) show in detail, the conditions necessary for carrying out relevance studies in developing countries. Firstly, all capital markets must be free from official manipulation, secondly, market prices must reflect preference of

participants; and insiders must not use their information advantage for their own gain.

Five issues raised (by Brown & Howeison, 1998 as referenced in Brimble, 2003) that limit the usefulness of value relevance research to standard setters are:

(1) That standard setters cannot possibly meet the information requirements of all users of accounting information; favoring investors would necessitate limiting the usefulness for other groups of users.

(2) The value relevance literature has not provided very strong results in terms of the strength of the association between stock returns and accounting information (particularly earnings).

(3) The results generated by value relevance studies are inevitably influenced by externalities that weaken the inferences that can be drawn from such studies.

(4) Concerns can be raised as to the relative sophistication of market participants, particularly as to whether the complex statistical association models employed in value relevance studies can be interpreted by investors.

(5) Standard setters require conclusive results and emphasize questions that comprehensively deal with an issue, which is not the case in value relevance studies since they are often incremental in nature.

Barth, Beaver and Landsman (2001) refute the above concerns raised about the usefulness of value relevance research to standard setters. They argue that:

(1)The value relevance literature does not provide insights useful to standard setters because it is based on well-accepted valuation models.

(2)Investors are the main users of accounting information; focusing on this group of users is thus relevant and useful.

(3)Despite simplifying assumptions, empirical valuation models can be used in a value relevance research design.

(4)Value relevance research is not designed to test usefulness of accounting amounts.

(5)Common econometric issues in research design can be and are, mitigated by applying various statistical techniques.

Concerning developments in accounting and stock markets, Marton (1998) observes two trends in worldwide stock markets: increasing internationalization and increasing importance. Internalization has to do with increasing cross-border investment activities while importance refers to the increasing activity on stock markets by both companies and people. He argues that stock markets are historically national in scope but that they are currently going through an increasing internalization with financial market deregulations and technological change seen as explanatory factors behind this. Geographic location of companies and investors are becoming less relevant due to increased activity in foreign countries.

This internalization of stock markets has consequences for accounting and has led to increasing efforts to achieve accounting harmonization (by way of removal of country-specific differences) by governments, professional organizations, and individual companies.

According to Marton (1998) the implication of accounting for internalized stock markets is that financial statements that are regulated on a national level are now issued in other countries to investors that might be used to different accounting regulations. He argues that annual reports from different countries differ both in terms of valuation and disclosure. While valuation issues determine the values of accounting figures, disclosure relate to how much information is included in financial statements. An international investor may therefore encounter difficulties when comparing accounting information from different countries with the recent adoption of international financial reporting standards; this problem is largely resolved.

In the latest years an increasing number of empirical studies have indicated that financial statements of enterprises contain certain parameters that play a critical role in the course of their respective equities in the stock market. This is expected, particularly because international accounting standards have been improved across the world since after year 2000. For this, information offered to investors is now more accurate and enlightening than before.

2.5 **Empirical Literature**

This sub-section deals with a detailed exposition of empirical literature of previous studies relating to relevance of financial information to share pricing in different stock markets.

Specifically, it reviews previous studies that are related to:

(i) Financial information and decision making

(ii) Relevance of financial information studies in developed stock markets

(iii) Relevance of financial information studies in emerging stock markets

2.5.1 **Financial Information and Decision Making**

Value relevance according to Abiodun (2012) means that there is a statistical association between accounting information and prices or returns, and that the accounting based measure explains market prices in a good way, under efficient market assumption that pricing reflects available information.

The main purpose for generating accounting information according to Henriksen and Van-Brenda (1992) is to facilitate decision making but for financial reporting to be effective, it must be relevant, complete and reliable among other requirements. In addition it also has to be clear and fair to all users and should therefore give a decision maker the capacity to predict future actions.

Meyer (2007) observes that despite their widespread use and continuing advancement, there is some concern that accounting practice has not kept pace with rapid economic

and high-technology changes which invariably affect the value relevance of accounting information. This observation is important as it is reinforced by the accounting frauds across the world, changing business environment and research findings that value relevance of accounting information has declined (Lev and Zarowin, 1999 and Francis and Schipper, 1999). They also suggest that the value relevance of accounting information has decreased over time due to issues like; decreased timeliness of financial statement information, increased economic reporting losses and one time or special items, and increased importance of unreported intangible assets because of relative importance of high-tech industries.

Some other recent studies that also find that value relevance of accounting information has declined are (Thingganrda & Damkierb, 2008, Wiedman & Marquardt, 2004 and Core, Guay and Buskirk, 2003).

A number of other studies however show that accounting information has not lost its value relevance. Collins, Maydew and Weiss (1997) assert that claims that accounting information has lost its value are premature. Balachandran and Mohanram (2006) in a study of association between conservatism and the value relevance of accounting information conclude that there is no evidence that industries with increasing conservatism see a greater decline in value relevance than industries with decreasing conservatism.

Some other recent studies also find that value relevance of accounting information has increased. Qystein, Kjell and Frode (2007) evaluated the relevance of financial reporting

over a relatively long period (over 40 years) and find that the relevance of Norwegian GAAP was non-declining throughout 1965-2004. Dung (2010) tested the value relevance of financial statement information on the Vietnamese stock market and the results show that the value relevance of accounting information was statistically meaningful, though somewhat weaker than in other developed and emerging markets. Fillip (2010) evaluated the impact of the mandatory IFRS adoption on the value relevance of accounting in Romania and observed that the implementation of IFRS increased the value relevance of earnings.

Francis and Schipper (1999) view value relevance of accounting information as not being the same thing as the quality of accounting information. Oyerinde (2009), Nilsson (2003) define value relevance from four different perspectives: (i) the fundamental analysis view of value relevance, (ii) the prediction view of value relevance, (iii) the information view of value relevance and (iv) the measurement view of value relevance.

Early relevance studies according to Svenston and Larsson (2009) focused on the information content of earnings but the focus is changing. This focus is changing as recent studies pay more attention on the alleged decreasing/increasing relevance of financial statement information for stock valuation.

Its criticism not withstanding historical accounting data has over the years been an invaluable source of information that investors, creditors, and other interested parties have relied on in making decisions that concern their relationship with the corporate firm.

Mistrust as to the process and policies employed in preparing accounting statements are some of the major causes of doubt on the validity of accounting statements. Tanzil (2012) observes that standard preparation of financial statements and agency problems have always caused doubts in the process of preparing financial statements. This is because generally accepted accounting principles (GAAP) endow managers with some discretion in their choice of accounting alternatives. In this regard, the same private information regarding future outcomes can be conveyed differently by different managers or by the same manager under differing incentives.

Zaleha, Muhd-Kamil, Jagjit and Hamezah (2008) with the conclusion of usefulness paradigm proposed that accounting information is useful and utilized by users of financial statements for, or significantly associated with their decision making. This is even though such information may not be stated in their best form (Scott, 2010). In discussing the concept of relevance with regard to accounting information, Riahi-Belkaoui (2009) believes that accounting information is relevant if the information can influence decisions made by decision makers.

As observed by Srinivasan (2012) various researchers have found important internal factors that determine share prices for different markets. These factors as many other results have shown vary across markets and over time. It is therefore appropriate to attempt to periodically understand the impact of various fundamental variables on share price given different assumptions. This is useful as it helps investors in taking

profitable decisions particularly as it affects their choice of equity investment in foreign markets.

2.5.2 **Relevance of Financial Information Studies in Developed Stock Markets**

For financial information to be value relevant, accounting numbers must be related to current company value. If there is no association between accounting numbers and company value accounting information cannot be termed relevant, and hence, financial reports are unable to fulfill one of its primary objectives (Abiodun, 2012).

The relationships between the different accounting variables and stock prices have been extensively investigated in financial literature with the focus of these studies varying between periods, sectors or stock markets. Investigations of value relevance appear to have yielded evidence that changes in financial ratios jointly and separately bring about changes in share prices both in developed stock markets and emerging stock markets. However, the actual internal factors found to be relevant seem to vary from market to market.

In the developed countries; there has been many studies examining the value relevance of accounting information. These studies have employed different contexts and models in their analyses and while some find improvement in quality others find declining value relevance.

Chalmers, Clinch and Godfrey (2011) also studied value relevance upon the adoption of IFRS in the Australian Securities Exchange and finds that earnings became more value-

relevant whereas the book value of equity does not. This was consistent with an increase in the value relevance of earnings which became more persistent around the IFRS adopting. This suggests that even for countries categorized by strong investor protection and high-quality financial reporting and enforcement; IFRS adoption affects the association between accounting information and market value.

Abayadeera (2010) tested for the value relevance of financial and non-financial information for high-tec industries in Austria with a sample size of 91 companies from the different sectors. Employing the Ohlson (1995) model (modified for the intangible assets disclosure), findings show that book value is the most significant factor and earnings the least significant factor in deciding share prices in high-tech industries in Australia. The results provide evidence for the value relevance of traditional accounting figures, such as earnings and book value of equity as well as more specific accounting information such as capital expenditures; leverage and financial sustainability variables. The value relevance not only differs across the different countries of the sample, but also across different sectors.

Klimczak and Szafranski (2010) extended comparative value relevance research by examining patterns in the value relevance of accounting numbers as a function of the month in which market values are observed. They employed the residual income model on a sample of companies listed in the stock exchanges of Germany and France and find dramatically divergent patterns of fit. In France, accounting numbers have strong relevance to market valuation after publication of annual reports in February or March.

In Germany, accounting numbers have stronger relevance during the fiscal year. They termed the two effects forecast and coincident relevance, respectively and argue that divergence in patterns of fit may be as a result of limited interim reporting in France before adoption of IFRS.

Svensson and Larsson (2009) studied the value relevance of earnings in Sweden using data for 1999-2008 in a regression model. The model specified that market return, that is the change in market value during a year, depends on the level of earnings from the previous year suggesting that earnings is value relevant in Sweden.

Hellstrom (2005) conducted a comparative analysis of the value relevance of financial accounting information in a transitional economy for the period 1994-2001 using Czech Republic and Sweden as case study. Findings showed difference in value relevance; with an improvement in the quality of Czech financial accounting information during the period observed.

Tse (2002) examined the extent to which changes in real estate returns reflected in changes of property value in Hong Kong. Findings show that both dividend yields and past returns have predictive power for P/E ratios hence they can be used as tools informing a market timing and asset allocation strategy in stock markets.

2.5.3 **Relevance of Financial Information Studies in Emerging Stock Markets**

Abiodun (2012) studied the significance of accounting information in Nigeria for the period 1999-2009 using data of 40 companies drawn from various sectors. Findings

show that earnings is more value relevant than book values. The implication of this is that income statement information is more value relevant than balance sheet historical information.

Dahmash and Qabajeh (2012) studied a sample of 365 Jordanian firms examining the value relevance of Ohlson (1995) model. The findings indicated value relevance and the data indicated by the variables of the model had high explanatory power.

Ghayoumi, Nayeri, Ansari and Raeesi (2011) empirically investigated the value relevance of accounting information to domestic investors in Tehran stock Exchange from 1999 to 2006, using earnings per share and annual change of earnings per share as the income statement indices and book value of equity per share as the balance sheet index; and employed return and price models through the regression analyses for testing research hypothesis. Their results show that accounting information is value relevant to domestic investors with income statement information being more value relevant than balance sheet information.

Shamki and Rahman (2012) examined value relevance of earnings and book value of equity (individually and in aggregate) relative to price and return models for the Jordanian Industrial companies for the period 1992 – 2002. Findings show that the value relevance of both earnings and book value were increased individually while both were irrelevant in their combination.

Irfan and Nishat (2002) investigated the effect of six accounting ratios (dividend yield, payout ratio, firm size, leverage, earnings volatility and asset growth) on price changes in Pakistan for the period, 1981 – 2000. Their simple regression model revealed that the prime key variables had no significant effect on share price deviation in Pakistan.

Studying determinants of stock price in India, Sen and Ray (2003) analyzed BSE index stocks for the period, 1988 – 2000 and find dividend payout as an important factor affecting stock prices. They also find earnings per share to have a very weak impact on share prices.

Hartono (2004) evaluated the effect of dividend and earnings on stock prices and found positive and significant influence on share prices when positive earnings information occurs after negative dividend information. He also found that positive dividend information followed by negative earning information resulted in a significantly negative impact on equity price.

Al-Deehani (2005) studied the determinants of share prices for listed companies on the Kuwait stock exchange. Findings show the previous earnings per share, cash dividends per share, previous dividends per share, return on equity, price-to-book value ratio, previous cash flow per share and cash flow per share are all highly correlated with share price.

Papadaki and Siougle (2007) found a negative price-earnings relation for those firms that report losses (loss firms) and a positive price-earnings relation for those firms that report profits (profit firms).

Concerning the Nigerian stock market, Martin (2008) observed that, the market is largely unpredictable based on the fundamental values beyond known financial performance which in themselves alone do not alter the market significantly. Somoye, Akintoye and Oseni (2009) employing simple linear regression model on 2005 – 2007 data examined the impact of earnings per share, GDP interest rate, dividend per share and oil price on equity price. The results showed that dividend per share and GDP had positive correlation but are not significant determinants to stock prices.

Uwuigbe, Olowole and Godswill (2012) assessed the Nigerian stock market for the determinants of share prices. Employing dividend payout among other independent accounting variables that were modeled for financial performance; their findings indicated a significant and positive relationship with share prices.

Using secondary data from sampled listed firms' financial statements; Stephen and Okoro (2014) studied the determinants of price in Nigeria for the period, 2001 - 2011. Their results suggested that earnings per share, book value per share and dividend cover serve as factors in the determination of stock prices; an indication of relevance of accounting variables tested to stock pricing in the Nigerian stock market.

Al-Shubiri (2010) studied Jordanian commercial banks listed on the Amman stock exchange for the period, 2005 – 2008 to investigate the determinants of stock market price movements. Empirical findings based on simple regression and multiple regression analysis show highly positive significant relationship between stock market price and net

asset value per share, market price of stock dividend percentage, GDP and negative significant relationship on inflation and lending interest rate.

Kheradyar and Ibrahim (2011) investigated the role of financial ratios as empirical predicators of stock return in separate and combined tools for the period, 2000 – 2009 in Bursa Malaysia. Lewellen's financial ratios that include dividend yield, earning yield and book-to-market ratio were considered using panel data model and generalized least squares (GLS) techniques. The results show that the financial ratios are able to empirically predict stock return as the book-to-market ratio has the higher predictive power than dividend yield and earning yield respectively. They also show that financial ratios are able to enhance stock returns predictability when the ratios are combined.

Nirmala, Sanju and Ramachandran (2011) examined the determinants of share prices in India using 2000 – 2009 data from three sectors: auto, health care and public sector undertakings. They employed panel co-integration test and fully modified least squares and their findings show that dividend per share and price earnings ratio positively influence share price of all the three sectors. Results also show that debt-equity ratio is significant factor to share prices for all three sectors and that it exerts a negative relation with share price.

Sharma (2011) studied different industry groups and explanatory variables in India for the period 1993 – 2008. The results reveal that, earnings per share, dividend per share and book value per share have significant impact on equity prices.

Srinivasan (2012) examined the fundamental determinants of share price in India employing panel data consisting of annual time series data over the period, 2006 – 2011 and cross section data pertaining to 6 major sectors. The empirical results reveal that dividend per share has a negative and significant impact on share price of manufacturing, pharmaceutical, energy and infrastructure sectors. Evidence also show that earnings per share and prices-earnings ratio are the crucial determinants of share prices of manufacturing, pharmaceutical, energy, infrastructure and commercial banking sectors. Also size is a significant factor in determining the share prices of all sectors considered except manufacturing.

Afza and Tahir (2012) studied the chemical sector of Pakistan stock market and find that variables in P/E ratio, dividend payout ratio and Tobin's Q remain the most important determinants of stock price in the market.

Wheeler, Neale, Kowalski and Letza (2002) tested the first five years of the Warsaw market's operations and find that the general level pricing efficiency, though low, steadily increased with the exception of the 1993-1994 bubble period). Bechev (2003) tested the efficiency of three central European exchanges for the period, 1996-2003 and found that the efficiency for the Warsaw stock exchange improved during the period. Also, Zgaljic (2004) analyzed Warsaw stock exchange returns for a range of periods and observed that until late 2000; the market was not weak form efficient

2.6 Summary of Literature Reviewed

Following the globalization and internalization of world stock markets; more investors now invest in foreign markets. Investors whether in local markets or foreign markets need to know not only the relationships between stock prices and their determinants, but also the size of financial measures, especially those that measure earnings, book values and dividends of firms listed in the developed stock markets as well as the emerging stock markets. This comparative evaluation is important as it aids investors' investment and portfolio diversification decisions in the internationalized stock market place.

Studies on value relevance are broad and diverse. Some researchers regard the ability of accounting information to summarize business transactions and other events (the measurement view of value relevance) as sufficient proof of value relevance of accounting data. Some others place greater emphasis on earnings prediction (the prediction view of value relevance) or information content of accounting data (the information view of value relevance).

Over the past 40 years numerous value relevance studies have been conducted. The literature has focused on whether value relevance has declined or increased over time and prior research has produced conflicting views.

To date, the majority of empirical research into the value relevance of accounting numbers according to Suwardi (2004) has been carried out in mature capital market environments, such as the United States (US). In most emerging markets, research

dealing with the relationship between accounting data and market values has been limited, although this situation is now rapidly changing in the wake of the recent crises in emerging financial markets.

Previous studies reviewed have concentrated on: value relevance of accounting information in specific firms, industries, stock markets, or markets with similar characteristics. Little or no attention has been given to the relevance of the fundamental variables that explain how market participants react to firms' internal accounting data and the relative importance of these variables to international investors' equity investment decisions. Previous studies have not also paid due attention to comparative relevance of these fundamental variables to stock pricing in both the developed stock markets and emerging stock markets. None of the previous researches have also attempted to compare the mean sizes of earnings, book values and dividend payouts in different stock markets.

To address these fundamental issues raised, this study takes a comparative evaluation of the relevance and size of earnings, net book values and dividend payout to stock prices in selected developed stock markets and emerging stock markets. The findings of this study provide relevant literature that fills the gap in knowledge created by this perceived limitations of previous studies.

2.7 Developed stock Markets and Emerging Stock Markets

Stock markets are more than a place where securities are traded as they include all the networks that operate to facilitate transactions between savers and users of long-term

capital by way of pooling funds, sharing risk and transferring wealth. In performing these functions, they become major stimulants for economic growth as they ensure the flow of resources to the sectors of the economy.

Financial markets, especially the stock markets are known to have grown considerably in both the developed and emerging countries over the last two decades. Several factors have aided the growth of stock markets in both emerging and developing countries. Most important among these factors is the improved macroeconomic fundamentals such as monetary stability and higher economic growth. Other factors that also accounted for this improved capital market development are general economic and capital market specific reforms, including privatization of state owned enterprises, financial liberalization, the establishment of stock exchanges and bond markets and improved institutional frameworks for investors in the countries around the world. Financial globalization has also increased in the last two decades and an important element of this trend has been the increase in the stock exchange activities that take place abroad, most notably for emerging markets, but also for developed countries (Claessens and Tzioumis (2006).

Many firms now cross-list on international exchanges with deposition receipts particularly becoming a very popular instrument for accessing international markets. This globalization is expected to continue as access to information improves; standards (concerning corporate governance, listing, accounting and others) become more harmonized, technology advance, and inter-market linkages further increase.

Mobarek (nd) observes that the higher momentum in the integration of world stock markets especially during this period was not only due to tighter economical and financial linkages among developed economies which have grown stronger but also due to the rises of many important emerging markets, which have been a major driver of global growth and have opened up additional channels for cross-border relations.

2.7.1 **MSCI Market Classification Framework**

To provide global market information and for ease of decision making world stock markets are classified between the developed; emerging and developing or frontier investment universe. According to the MSCI, market classification framework (2011), the classifications of markets is a key input in the process of index construction as it drives the composition of the investment opportunity sets to be represented. The MSCI the classification consists of three criteria: economic development, size and liquidity as well as market accessibility.

In order to be classified in a given investment universe, a country must meet the requirements of all three criteria as described in the Table 2.1 below:

Table 2.1: MSCI Market Classification Framework

CRITERIA	FRONTIER	EMERGING	DEVELOPED
B. Economic development • Sustainability of economic development	No requirement	No requirement	Country GNI per capita 25% above the World Bank high income threshold for three consecutive years
C. Size and liquidity requirements • Number of companies meeting the following standard index criteria	2	3	5
– Company size (full market capital)	USD 505mm	USD 1010mm	USD 2020mm
– Security size (float market capital)	USD 35mm	USD 505mm	USD 1010mm
– Security liquidity	2.5% ATVR	15% ATVR	20% ATVR
D. Market accessibility criteria			
• Openness to foreign ownership	At least some	Significant	Very high
• Ease of capital inflows/outflows	At least partial	Significant	Very high
• Efficiency of the operational framework	Modest	Good and tested	Very high
• Stability of the institutional framework	Modest	Modest	Very high

- High income threshold for 2009: GNI per capita of USD 12, 196 (World bank, Atlas method)
- Minimum in use for May, 2011. Semi-annual index review.

Source: MSCI Index Research (2011).

2.4.2 FTSE Global Equity Indices Classification

The FTSE a London based major global stock indices compiles and also grades World Stock Markets. The FTSE Indexes classify 72 countries in the world into 4 categories: developed, advanced emerging markets, secondary emerging and frontier markets. The evaluation standards are:

1. Market and regulatory environment
2. Custody and settlement
3. Dealing landscape
4. Process of assessment

The Standard & Poors Global BMI Equity Indices is a comprehensive rules-based index that measures global stock market performance covering 10, 000 companies in 46 countries. All 46 countries are classified only between developed or emerging depending on the following factors: macroeconomic conditions, political stability, legal property rights and procedures, trading and settlement processes and conditions and feedback from institutional investors.

Using various but related criteria; the major index compilers classify World stock markets on a regular basis. Table 2.2 above shows the FTSE Global equity indices for 72 countries as at September, 2009

Table 2.2 **FTSE Global Equity Indices for 72 Countries**

DEVELOPED	ADVANCE EMERGING	SECONDARY EMERGING	FRONTIER
Australia	Brazil	Argentina	Bahrain
Austria	Hungary	Chile	Bangladesh
Belgium/Luxemburg	Mexico	China	Botswana
Canada	Poland	Columbia	Bulgaria
Denmark	South Africa	Czech Republic	Cote d'Ivoire
Finland	Taiwan	Egypt	Croatia
France		India	Cyprus
Germany		Indonesia	Estonia
Greece		Malaysia	Kenya
Hong Kong		Morocco	Macedonia
Ireland		Pakistan	Malta
Israel		Peru	Mauritius
Italy		Philippines	Nigeria
Japan		Russia	Oman
Netherlands		Thailand	Qatar
New Zealand		Turkey	Romania
Norway		UAE	Serbia
Spain			Slovakia
Sweden			Slovenia
Switzerland			Sri Lanka
United kingdom			Tunisia
United States			Vietnam
25 countries	6 countries	17 countries	24 countries

Source: FTSE country classification September, 2009 updates.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter focuses on the research methodology. In view of the objectives to be achieved, research questions raised, hypotheses formulated and research variables specified the most appropriate methods are in to generating samples as well as source and analyze the data for the study. This chapter therefore specifies the research design, sources and methods of data collection, the model specification as well as the methods of data analysis.

3.1 **Research Design**

Given the research problem and objectives that have been defined, the next stage is the design of the research. Research design according to Panneerselvam (2010:12) "provides a complete guideline for data collection". It is a plan of investigation that specifies the nature of investigation and the types and sources of information relevant to the research questions. It is the blue print that specifies the best approach for gathering and analyzing the data.

The most appropriate methods of research design for this study are the archival, content analysis, economics technique of multiple regressions and the analysis of variance. The archival method according to Avwokeni (2005:166) involves "the search of existing records of data for the research" and content analysis "is a method that

involves analyzing the content of records from the archival source to answer specific research questions.

The study is an archival research since it involves the published data for all listed firms in the participating stock markets. Also content analysis is used to analyze the year-ends abridged stock market reports to obtain the appropriate parameters for the computation of the average price-earnings ratio, price-book value ratio, dividend yields and share prices for each of the selected stock markets during the period.

3.2 **Data Required**

The data required for this study are:

i. Abridged year-end average price-earnings ratio, price-book value ratio and dividend yield as proxies for earnings, net book values, and dividend payout respectively for each of the selected developed stock markets and emerging stock markets for the period, 1995- 2011.

ii. Abridged year-end average share price data for each of the selected developed stock markets and emerging stock markets for the period, 1995 - 2011.

3.3 **Sources of Data**

This research is case study in nature and therefore places emphasis on the relative analysis of stock market information as published in the World Stock Exchange Fact Book, 2012 Edition. The World Stock Exchange Fact Book, 2012 is a publication of

Meridian Securities Markets Ltd., with the permission of the following sampled stock exchanges among other top world stock exchanges:

1. The Hong Kong Stock Exchange
2. The JSE Stock Exchange South Africa
3. The Madrid Stock Exchange
4. The Mexican Stock Exchange
5. The Tokyo Stock Exchange
6. Warsaw Stock Exchange
7. The Istanbul Stock Exchange
8. The Philippines Stock Exchange
9. The Prague Stock Exchange
10. The Taiwan Stock Exchange
11. The Stock Exchange of Thailand

The Nigeria Stock Exchange data is computed from the Nigeria Stock Exchange Fact Book, 2002 – 2012.

3.4 **Model Specification**

This is a very important step where the researcher has to take care in attempting to study the relationship between the dependent variable and independent variables in the model. Specifically, it covers the relevance and homogeneity in performance of all the independent variables between the developed stock markets and emerging stock markets.

3.4.1 **Variables in the Model**

The variables in the model consist of two types: the dependent variables and the independent variables. The dependent variable for this study is average share price while the independent variables are the average price-earnings ratios, price-book value ratios and dividend yields for all listed firms in each of the sampled stock markets. The independent variables are tested for their relevance to share pricing and homogeneity in mean sizes between the developed and emerging stock markets.

3.4.1a **Dependent Variable**

In an efficient market according to Harper (2010) stock price is primarily determined by some fundamentals. This implies that the price of a company's shares is dependent on some variables and that share price is a key indicator of how the market perceives the performance of a firm.

The stock price as observed by Boulding and Staelin (1995) is traditionally considered a key benchmark of a firm's future performance. This according to the efficient market theory is because: stock prices incorporate all information about expected future earnings.

For this reason, it is believed that all things being equal, a company's share price will rise when the market expects better future performances and similarly, price will fall if a decline in performance is anticipated. This anticipation is largely due to trends in

historical earnings, net book values, and dividend payout patterns among other internal variables of the underlying securities.

For this study, share price (S_p) is the dependent variable and is appropriate for measuring firms' values in a stock market based relevance study.

3.4.1b **Independent Variables**

The independent variables are those factors that seem to determine changes in the dependent variable (share price of listed firms). For this study, the independent variables are the fundamental variables: price-earnings ratios, price-book value ratios and dividend yields which are employed as proxies for earnings, net-book values and dividend payout.

3.4.1b (i) **Price-Earnings Ratios**

To a shareholder, earnings refer to the profit that accrues to him on his investments. Harper (2010) explains that an owner of a common stock has a claim on earnings and that earning per share is buying a proportional share of an entire future stream of earnings.

Due to the nature of this study which is comparative stock market based, an earning indicator that is common to all markets studied is considered most appropriate. The price-earnings ratio (PER) is therefore employed as proxy for earnings in the study. The price-earnings ratio expresses the relation between stock price and earnings per share;

thus an indication of how the stock market perceives the company's earnings and changes in earnings.

The price-earnings ratio (PER) is measured as:

$$\frac{\textit{Market price per share (MPS)}}{\textit{Earnings per share (EPS)}}$$

Where Earnings per share =

$$\frac{\textit{Total profit due to shareholders}}{\textit{Number of equity shares outstanding}}$$

In an efficient stock market, those investors whose objective is to maximize earnings would be willing to pay higher prices for higher actual or expected earnings and vice versa. Given a constant market price per share, increase in earnings is expected to result in lower price-earnings ratio (PER). Thus, since shareholders prefer higher earnings (lower PER) to lower earnings (higher PER), an increase in PER (decrease in earnings) will result in decreasing share price and a decrease in PER (increase in earnings) will increase share price all things being equal.

3.4.1b (ii) **Price-Book Value Ratios**

The net book value of a company is the historic cost of its assets after deducting all liabilities and depreciation. It is an indication of what value that will be left of the company should it be liquidated immediately. The net-book value per share measures the dollar amount that a shareholder gets for each unit of share he owns of this total net-book value

The price-book value ratio (PBR) is employed as proxy for determining the effect of changes in net-book values on share price. Considering that the study evaluates stock market and accounting based relationships in different countries the PBR, is appropriate as it can be uniformly applied across the different stock markets.

The price-book value ratio (PBR) is measured as:

$$\frac{\textit{Market price per share (MPS)}}{\textit{Net-book value per share (NBVS)}}$$

Where; Net-book value per share =

$$\frac{\textit{Total net-book value}}{\textit{Number of equity shares outstanding}}$$

Given that the stock market is book value efficient, investors would be willing to pay higher prices for higher actual or expected net-book values and vice versa. If there is no change in the share price, an increase in net-book value will result in lower price-book value ratio (PBR). Thus, since shareholders prefer higher net-book values (lower PBR) to lower net-book values (higher PBR), an increase in PBR (decrease in net-book value) will decrease share price and a decrease in PBR (increase in net-book value) will increase share price, all things being equal.

3.4.1b (iii) **Dividend Yield**

Dividend payout is the percentage of a firm's earnings due to shareholders that is paid as dividends. This dividend payment is so important that the different dividend theories either argue for the relevance or irrelevance of dividends to the value of the firm. There is also sizeable finance literature indicating that dividends do impact on share prices.

For this comparative stock market study; dividend yield is used as an indicator for dividend payout ratio in each stock market.

Dividend yield (DIY) is measured as:

$$\frac{\textit{Dividend per share (DPS)} \quad x \quad 100}{\textit{Market price per share (MPS)}}$$

Where dividend per share is the dividend due on each unit of equity share existing.

Pro-dividend investors always prefer higher dividend payouts and are willing to pay more for a higher payout than for a lower dividend payout. Consequently, there is a positive relationship between dividend payout and dividend per share given no change in market price. Thus, an increase in dividend yield will result in an increase in share price and a decrease in dividend yield will result in a decrease in share price all things being equal.

3.4.2 **Analytical Framework**

The research draws from the work of Ohlson (1995) and Feltham and Ohlson (1995) frameworks both of which adopted historical price models in their value relevance studies.

The model underlies the classic belief that the value of a company consists of its book value (net value of investments in it) and earnings (present value of the periods benefits) and that these combine to bring about shareholders value.

The Ohlson (1995) and Feltham and Ohlson (1995) frameworks have been tested for different sectors, or stock markets with similar characteristics employing earnings and other historical data.

Concerning the relevance component of the study, the financial variables are assumed as possible universal determinants of share prices in different stock markets and the research extends by empirically comparing their relationships. For the performance component, the mean sizes of the independent variables: price-earnings ratios, price-book value ratios and dividend yield ratios are compared between the developed stock markets and emerging stock markets.

Arising from the above, the functional relationships between the variables relevant for testing of the first two hypotheses are stated as:

$$SP_D = f(PER_D, PBR_D, DIY_D) \quad 3.1$$

$$SP_E = f(PER_E, PBR_E, DIY_E) \quad 3.2$$

Where SP_D = Average share price of listed firms in developed stock markets.

PER_D = Average price-earnings ratio of listed firms in developed stock markets.

PBR_D = Average price-book value ratio of listed firms in developed stock markets.

DIY_D = Average dividend yield of listed firms in developed stock markets.

SP_E = Average stock price of listed firms in emerging stock markets.

PER_E = Average price-earnings ratio of listed firms in emerging stock markets.

PBR_E = Average price-book value ratio of listed firms in emerging stock markets.

DIY_E = Average dividend yield of listed firms in emerging stock markets.

Based on equations (3.1) and (3.2) the explicit econometric models are:

$$SP_D = a_0 + a_1 PER_D + a_2 PBR_D + a_3 D1Y_D + U_{1t} \quad 3.3$$

$$SP_E = b_0 + b_1 PER_E + b_2 PBR_E + b_3 D1Y_E + U_{2t} \quad 3.4$$

Where: all the variables are as earlier defined, and U1t and U2t are error terms

Equation (3.3) and (3.4) will be analyzed mathematically using linear and log-linear forms of:

$$\hat{SP}_D = \hat{a}_0 + \hat{a}_1 PER_D + \hat{a}_2 PBR_D + \hat{a}_3 DIY_D \quad 3.5$$

$$\text{LN}\hat{SP}_D = \hat{a}_0 + \hat{a}_1 LNPER_D + \hat{a}_2 LNPBR_D + \hat{a}_3 LND1Y_D \quad 3.6$$

$$\hat{SP}_E = \hat{b}_0 + \hat{b}_1 LNPER_E + \hat{b}_2 LNPBR_E + \hat{b}_3 LNDIY_E \quad 3.7$$

$$\hat{LNSp}_e = \hat{b}_0 + \hat{b}_1 LNPER_E + \hat{b}_2 LNPBR_E + \hat{b}_3 LNDIY_E \quad 3.8$$

Where ^ = Parameter estimate LN = Natural logarithms of the estimates while all other acronyms remain as earlier defined.

Apriori, a_1 and $a_2 > 0$; while $a_3 < 0$; on the other hand, b_1 and $b_2 > 0$; while $b_3 < 0$.

For the test of comparative performance, homogeneity between mean price-earnings ratios, price-book value ratios and dividend yields in both the developed stock markets and the emerging stock markets, the analysis of variance (ANOVA) is used.

The mean is also known as the arithmetic average of the sample or the sum of all the observations divided by the number of observations. The sample mean price-earnings ratios, price-book value ratios and dividend yields as independent variables are compared for the groups of developed and emerging stock markets to determine their homogeneity.

Students t-test is conducted by first preparing and sorting the relevant data. Using markets mean price-earnings ratios, price-book value ratios and dividend yields as independent variables and the levels of stock market development (divided into two groups; developed stock markets and emerging stock markets) as dependent variables in order to compare their means. Prior to comparison; the data is checked for assumption of normality in order to ensure that the appropriate statistical tests for differences between means are used in hypothesis testing.

The t-test is appropriate because according to Avwokeni (2005:121), “its first use is to check whether the difference in means/proportions obtained from the independent/unmatched groups is statistically significant from zero in the population”

3.5 **Methods of Data Analysis**

The main analytical tools employed in this study are descriptive statistics, econometric method of ordinary least square (OLS) of multiple regressions and the analysis of variance (ANOVA).

3.5.1 **Descriptive Statistics**

The transformation of data into a format that is easier to understand and interpret, according to, Zikmund, (2003) is known as descriptive statistics. This descriptive statistics analysis according to Uzoagulu (1998:24) deals with the methods and techniques of summarizing and describing information (data).

Descriptive statistics according to Pallant (2007) and Dreyer (2010) can be used to:

(a) Describe the characteristics of your sample

(b) Check your variables to ensure that they do not violate the underlying statistical techniques that you intend using to answer your research questions

(c) To address specific research questions.

The descriptive statistics employed are tables, percentages, mean, curve labor, etc. Specifically, these tools are used to analyze the research questions.

3.5.2 **Multiple Regression Analysis**

According to Kothari (2010:130) multiple regression analysis is adopted when the researcher has one dependent variable which is presumed to be a function of two or

more independent variables and the objective of the function is to make a prediction about the dependent variable based on its variance with all the independent variables.

Multiple regression analysis is used for the first two hypotheses because according to Akenbor (2011):

(i) It measures the impact of two or more independent variables on the dependent variable.

(ii) It is used for testing parametric data, which are the type of data to be generated.

(iii) All the variables used are interval scale.

There are however situations when we have to improve on our predicting ability by including more independent variables in a regression model as in real life situation, the simple regression may be an over simplification of reality. The aim in multiple regression is to examine the nature of the relationship between a given dependent variable and two or more independent variables. The concept and technique for analyzing the relationship between dependent variable and several independent variables are a straight forward extension of those involved in the simple regression.

The OLS method of multiple regression analysis is used to test the various apriori expectations and formulated hypotheses. The method is chosen because its estimates possess the properties of best, linear, unbiased and efficient estimator (BLUE).The econometric package called E-view version 7 is used in the processing the data

collected. Accordingly, tests of First Order Least Regression (FOLR) analyses are conducted.

3.5.3 **Analysis of Variance (ANOVA)**

The Analysis of variance (ANOVA) is appropriate for testing the third, fourth and fifth hypotheses involving differences in markets mean size of the fundamental variables: price-earnings ratios, price-book value ratios and dividend yields respectively. This is because; according to Lucey (1988:98) it is useful in testing the hypothesis that the means of several sampled populations are equal. It uses f – distributions.

ANOVA is an appropriate statistical tool for measuring the difference between means for more than two groups when there is only one independent variable affecting all groups, in terms of behavior or characteristics, there will be statistically significant variances of the group means about a grand mean. The null hypothesis (assuming all means are equal) will be rejected if at least two means vary from the central mean (Zikmund, 2003) and (Dreyer, 2010)

When one factor (treatment) is involved, it is called one way ANOVA, when two factors (treatment and block) are involved; it is regarded as two-way ANOVA.

The hypothesis will be

$$H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4 = \dots \mu_n$$

$$H_1 : \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \dots \mu_n$$

At an α level of 5%

3.5.4 **Parameter Estimation**

3.5.4.1 Coefficient of Determination (R^2)

This represents the amount or proportion of Y the independent variable explained or attributed to the linear relation of Y and X. It is the proportion of the total variability in Y, explained by the regression equation. It is equal to the square of the correlation coefficient (γ). This statistic measures the percentage variation in the dependent variable due to changes in the independent variables.

3.5.4.11 The Student t-Test (T-Test)

This test is carried out to test the significance of the various parameter estimates. Thus, the t-test helps us to measure the effect of the financial variables on stock prices in world stock markets. In order to achieve this, the test will be carried out at 5 percent level of significance.

3.5.4.111 Analysis of Variance (ANOVA)

The analysis of variance splits the variations in two parts: explained and unexplained variations. Here, the F-statistic is used to test the overall significance of each of the models. The decision rules will be that if the calculated F-value is greater than the table value, the null hypothesis will be rejected and vice versa.

3.5.5 **Parametric Versus non-parametric test**

Statisticians generally make use of two types of tests; they are the parametric and non-parametric tests. According to Hebel (2002) parametric and Non-parametric assumptions can be compared as follows:

Table 3.1 **Differences between Parametric and Non Parametric Assumptions**

Parametric Assumptions	*Non-Parametric Assumptions*
The observations must be independent	Observations are independent
The observations must be drawn from normally distributed populations	Variables under study has underlying continuity
These populations must have the same variances	
The means of these normal and homoscedastic populations must be linear combinations of effects due to columns and or rows.	

Source: Hebel: A (2002)

The following parametric methods are identified:

Table 3.2: Differences between Independent Groups

	Parametric	*Non parametric*
Two samples – compare mean value for same variable of late interest	t - test for independent samples	Wald – Wolfowitz runs test
		Mann – Witney U test
		Kolmogorov – Smirnov two sample test

Source: Hebel, A (2002)

Table 3.3 Differences between Groups

	Parametric	*Non parametric*
Compare two variables measured in the same sample	t - test for independent samples	Sign test
		Wilcoxon's matched pairs text
If more the two variable are measured in same sample		Friedman's two way analysis of variance
		Cocharan Q

Source: Hebel, A (2002)

There is at least one nonparametric test equivalent to a parametric test. These tests fall into two categories:

1. Test of difference between groups (independent sample)
2. Test of differences between variables (dependent samples)
3. Test of relationships between variables

Due to the fact that financial data is normally distributed; parametric tests will be used for analysis in this study.

Table 3.4 Relationship between Variables

	Parametric	*Non parametric*
Two variable of interest are categorized	Correlation coefficient	Spearman R
		Kendall Tau
		Coefficient Gamma
		Chi Square
		Phi coefficient
		Fisher exact test
		Kendall coefficient of concordance

Source: Hebbel, A (2002)

3.5.6 **Cross sectional, longitudinal and Panel data**

Cross – sectional data refers to data collected by observing many subjects (such as individuals, firms, countries) at the same point of time. The data are useful for comparing the differences among the subjects. The data are gathered at approximately the same period of time from a large cross section of the population. The data that are used to test the efficiency of the developed stock markets and emerging stock markets are examples of cross-sectional data.

Time series data on the other hand involves the observation of same variables over an extended period and at the same intervals. The data on each stock markets average share price, price-earnings ratio, price-book value ratios and dividend yields for the

period 1995-2011 are examples of time series data. For time-series data to assure meaningful statistical analysis; the number of observations must be more than 30. Observing the fundamental variables and share price data for more than thirty years is possible; but for the emerging stock markets; this would drastically reduce the number of samples that will quality for inclusion. This is due to the non-availability of adequate relevant data for these markets.

To compensate for lack of depth in time series data; the researcher used panel data to enrich the regression analysis with spatial and temporal dimension. This refers to the periodic observations of a set of variables characterizing the cross-sectional unit over a defined period of time which according to Yaffee (2003) and Dreyer (2010) is the panel data.

3.6 **Validity and Reliability of Research Instruments**

Validity is simply the appropriateness of an instrument in measuring what it is intended to measure. Example; a wrist watch is a valid instrument for measuring time; and a ruler is a valid instrument for measuring length, etc (Aneke, 2002).

Wainer and Braun (1998) describe validity in quantitative research as 'construct validity' and that the construct is the initial concept, notion, question or hypothesis that determines which data is to be gathered and how it is to be gathered. Validity according to Joppe (2000) determines whether the research truly measures that which it was intended to measure or how true the results are.

This study uses secondary data and since the focus is on fundamental variables: price-earnings ratios, price-book value ratios and dividend yields and their relationship with share prices as well as the mean size of the fundamental variables in different world stock markets, no other source will be more valid than the World Stock Exchange Fact Book which is published using data from and with the permission of the respective country stock exchanges. The level of accuracy of data from this source is superior to that found when linking many other sources. The database provides historical matching abridged data for the all listed firms in the selected developed stock markets and emerging stock markets.

The reliability of a test instrument according to Uzoagulu (1998) is the consistency of the instrument in measuring whatever it purports to measure. Avwokeni (2005:175) posits that, we do not need to worry about reliability because, if an instrument is valid, it is also reliable. In the absence of any reason that transmission errors exist, we believe that the data analyzed are valid and reliable.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

After setting out the methodology for collection and analyzing the research data in chapter three; this section focuses on the presentation and analysis of the data collected as well as discussion of results obtained. This involves systematic statistical presentation and analysis of all data obtained using tables, bar charts, trend graphs and other appropriate statistical tools considered relevant to the study.

4.1 **Data Presentation**

The data presentation is directly based on the variables in the various research hypotheses formulated for the study. The sampled stock exchanges are grouped between the: (i) developed stock exchanges, and (ii) emerging stock exchanges.

The basic data analyzed in the study are the average share prices and the financial variables (that is, the average price- earnings ratios, price-book value ratios and dividend yields) for all listed firms in each of the stock markets studied. The results are analyzed for the developed stock exchanges and the emerging stock exchanges for the period, 1995 – 2011; are presented in Tables 4.1 – 4.8 below.

4. 1. 1 **Data for Developed Stock Markets**

Classified as developed stock exchanges are; the Hong Kong stock exchange, Johannesburg stock exchange, Madrid stock exchange, Mexican stock exchange, Tokyo stock exchange and Warsaw stock exchange.

The average of share prices in USSD; price – earnings ratios, price – book value ratios, and dividend yields for all listed firms in each of the six developed stock exchanges are presented in Tables 4.1 – 4.4 below.

4. 1. 1. 1 **Developed Stock Markets – Average Year - End Share Prices (USSD)**

The average share prices for each of the stock exchanges in the developed stock markets sampled for the period, 1995 – 2011 are presented in Table 4.1 below.

Table 4.1: **Average Year-end Share Prices (USSD) for Listed Firms in Developed Stock Markets; 1995-2011.**

Year End	Stock Exchange						Average
	HSE	JSE	MaSE	MeSE	TSE	WSE	
1995	0.76	3.44	13.50	2.95	11.06	21.45	8.86
1996	0.58	3.39	15.32	1.83	12.38	21.33	9.14
1997	0.45	2.78	19.77	3.08	12.07	23.07	10.20
1998	0.40	2.08	19.19	2.74	9.39	17.20	8.50
1999	0.24	2.22	15.32	2.19	14.24	16.33	8.42
2000	0.19	2.19	17.79	2.33	17.12	15.08	9.12
2001	0.20	1.98	12.28	2.21	11.97	8.93	6.26
2002	0.16	2.53	9.48	1.49	11.06	7.49	5.37
2003	0.17	2.84	8.30	1.52	9.38	8.84	5.18
2004	0.16	3.60	10.05	2.03	11.08	10.51	6.23
2005	0.12	3.71	9.93	2.19	10.79	11.21	6.33

2006	0.14	4.31	---	2.68	16.39	10.56	8.68
2007	---	5.94	12.76	3.21	16.36	7.39	7.61
2008	0.07	6.22	---	2.42	12.49	5.08	4.37
2009	0.07	5.03	---	2.03	8.09	---	2.53
2010	0.05	5.99	---	2.46	8.49	---	2.83
2011	0.04	6.26	---	2.18	7.97	---	3.07
	0.23	3.79	9.63	2.33	11.78	10.85	6.44

Source: World Stock Exchange fact book, 2012.

Note: HSE – Hong Kong Stock Exchange **MeSE** – Mexico Stock Exchange

JSE – Johannesburg Stock Exchange **TSE** – Tokyo Stock Exchange

MaSE – Madrid Stock Exchange **WSE** – Warsaw Stock Exchange

As shown in Table 4.1; the average share price for the sampled developed stock markets in 1995 was 8.86USSD which increased to 9.14USSD and 10.20USSD in 1996 and 1997 respectively. After an 8.31% increase to 9.12 USSD in 2000; average share price dropped between 2001 and 2003.

Average share price was highest in 1997 at 10.20 USSD and lowest at 2.53 USSD in 2009. On the whole prices in the developed stock markets fluctuated upwards and downwards between periods of 2-3 years.

Three of the stock exchanges exceeded the group average share price of 6.44 USSD for the period 1995 – 2011; Tokyo stock exchange had the highest average price of 11.98 USSD followed by the Warsaw stock exchange with 10.85 USSD while Madrid stock exchange had 9.63 USSD.

The other three stock exchanges had below the developed markets average of 6.44 USSD. The Hong Kong stock exchange had the least average share price of 0.23 USSD followed by the Mexican stock exchange with 2.33 USSD and Johannesburg stock exchange with average share price of 3.79 USSD for the period, 1995-2011.

4.1.1.2 **Developed Stock Markets – Average Year-End Price – Earnings Ratios**

Price-earnings ratio is the financial variable used to measure earnings of listed firms in the study. The average price-earnings ratios for all listed firms in the sampled developed stock exchange are presented in Table 4.2 below.

As shown in the Table; average price-earnings ratio for 1995 was 26.56 which increased marginally to 26.61 in 1996 before dropping to 19.38 in 1997. The price-earnings ratio increased by 62.02% to 31.40 in 1998 before fluctuating in every one, two or three years and ending with an average of 27.49 at the period, in 2011.

Of the six developed stock exchanges; only one; the Tokyo stock exchange had a higher price-earnings ratio (75.46) which is higher than the group average of 27.49. The other five stock exchanges had price-earnings ratios which were all lower than the group average with the lowest being Hong Kong Stock Exchange 14.90; Madrid Stock exchange 17.21 and Warsaw Stock Exchange 24.99.

Given the relationship between share price and earnings where investors prefer lower price-earnings ratios to higher ones; the developed stock markets had the best results with 11.20 in 2011. Other years in which price-earnings ratios were below the group

average were 12.28 in 2008; 13.79 in 2002; 18.22 in 2009; 18.90 in 1999 and 19.00 in 2010. The good price-earnings years were 2007 when price-earnings ratio was 19.19 and in 1997; 19.38. The years 2006; 2004; 2005; 2000; 1995 and 1996 were also good for investors with price-earnings ratios of 20.64, 20.98; 21.15; 26.04; 26.56 and 26.61 respectively.

Table 4.2: **Average Year-end Price-Earnings Ratio for listed Firms in Developed Stock Markets; 1995-2011**

Year End	**Stock Exchange**						**Average**
	HSE	JSE	MaSE	MeSE	TSE	WSE	
1995	11.44	21.60	12.30	20.63	86.50	6.90	26.56
1996	16.69	18.70	16.80	13.48	79.30	14.70	26.61
1997	12.10	16.80	19.10	17.85	37.60	12.80	19.38
1998	10.66	19.40	24.39	16.24	103.10	14.60	31.40
1999	26.77	16.90	24.93	17.20	---	27.10	18.90
2000	12.95	13.51	18.65	12.23	85.50	13.40	26.04
2001	12.30	13.29	17.81	15.56	61.40	65.90	31.04

2002	1478	11.84	15.80	12.53	---	27.60	13.79
2003	19.08	13.47	19.42	17.91	614.10	101.90	130.98
2004	18.80	18.09	18.32	14.57	39.00	17.10	20.98
2005	15.61	17.87	16.07	17.32	45.80	14.25	21.15
2006	17.39	19.98	15.04	17.74	36.00	17.71	20.64
2007	22.47	16.48	12.08	18.58	26.70	18.80	19.19
2008	7.26	8.90	8.16	20.95	20.00	8.43	12.28
2009	18.13	19.40	12.70	22.10	---	37.01	18.22
2010	16.67	19.40	8.70	18.90	32.92	17.48	19.00
2011	---	15.00	9.30	18.70	15.00	9.18	11.20
2012	14.90	16.50	15.86	17.21	75.46	24.99	27.49

Source: World Stock Exchange Fact Book, 2012.

Note: HSE – Hong Kong Stock Exchange **TSE** – Tokyo Stock Exchange
JSE – Johannesburg Stock Exchange **WSE** – Warsaw Stock Exchange
MaSE – Madrid Stock Exchange **MeSE** – Mexico Stock Exchange

For the developed markets; the best price-earnings ratio of 14.90 was offered by the Hong Kong stock exchange followed by the Mexican stock exchange 17.21 and Warsaw stock exchange 24.99. The Tokyo stock exchange's average of 75.46 was relatively too high compared to others in the group.

4.1.1.3 **Developed Stock Markets – Average Year-End Price - Book Value Ratios**

The price-book value ratios express the relationship; between market price per share and net book value per share of a firm. Investors prefer lower price-book value ratios to higher ones. The result for average price-book value ratios for the developed stock markets is presented in Table 4.3 below.

As shown in Table 4.3 below; the price-book value ratios for the developed stock markets increased steadily between 1995 (1.29) to 1997 (1.76) before dropping marginally by 1.14% to 1.74 in 1998. There was steady decline in price-book value ratios between the years of 2000 – 2003 with price-book value ratios dropping from 1.95 to 1.35. The biggest increases in prices relative to net book values were between 2007 and 2011.

The best years for net-book value investors were 2011 (0.39) 2010 (0.50) 2009 (0.55) and 2008 (1.13): other good years for investors with below market average returns were 2005 (1.18); 2002 (1.27); 1995 (1.29) and 2003 (1.35). Of the seventeen years studied; eight years had below average results while the other nine years had above average results.

Table 4.3: **Average Year-end Price-Book Value Ratios for Listed Firms in Developed Stock Markets; 1995-2011.**

Year End	**Stock Exchange**						**Average**
	HSE	JSE	MaSE	MeSE	TSE	WSE	

1995	---	---	1.48	1.85	1.90	1.23	1.23
1996	---	---	2.09	1.76	1.80	2.07	1.54
1997	1.43	---	2.42	2.32	1.20	1.49	1.76
1998	1.17	---	3.14	1.61	1.20	1.57	1.74
1999	2.16	---	3.31	2.41	1.50	2.03	2.28
2000	1.81	---	2.97	1.98	1.20	1.80	1.95
2001	1.35	---	2.30	1.39	1.00	1.28	1.40
2002	1.11	---	1.60	1.39	0.90	1.35	1.27
2003	1.68	---	---	2.20	1.20	1.69	1.35
2004	1.89	---	---	2.86	1.30	2.15	1.64
2005	1.93	---	---	---	1.90	2.09	1.18
2006	2.52	---	---	4.68	1.60	2.62	2.28
2007	---	---	---	4.42	1.30	2.66	1.68
2008	---	---	---	3.49	0.90	1.24	1.13
2009	---	---	1.80	---	0.90	1.56	0.85
2010	---	---	---	---	0.90	1.59	0.50
2011	---	---	---	---	0.80	1.15	0.39
2012	1.00	---	1.24	1.90	1.74	1.74	1.43

Source: World Stock Exchange Fact Book, 2012.

Note: HSE – Hong Kong Stock Exchange **MeSE** – Mexico Stock Exchange

JSE – Johannesburg Stock Exchange **TSE** – Tokyo Stock Exchange

MaSE – Madrid Stock Exchange **WSE** – Warsaw Stock Exchange

Concerning the respective stock markets in the group, the Hong Kong stock exchange had the best price-book value ratio of 1.00 followed by the Madrid stock exchange 1.24; then the Tokyo Stock Exchange with 1.26.

4.1.1.4 **Developed Stock Markets – Average Year – End Dividend Yields (%)**

The dividend yield (%) expresses the relationship between dividends per share and market price per share. Since investors prefer higher dividends to lower dividends; higher dividends yields (%) are better.

The results for average dividend yields for the developed stock markets are presented in Table 4.4 below.

As shown in Table 4.4; the average dividend yields for the developed stock markets in 1995 was 2.36% which dropped by 18.97% to 1.88 in 1996 before an increase of 8.51% to 2.04 in 1997. The yearly average dividend yield percentage fluctuated upwards and downwards on almost two-yearly basis with the group average for the period, 1995 - 2011 being 2.14%.

The best year for dividend investors in the developed stock markets was 2008 with 3.95% dividend yield. Other good years with above average dividend yields were 1995, (2.32%), 1998 (2.26%); 2001 (2.45%); 2002 (2.46%); 2003 (2.27%); 2005 (2.56%); 2006 (2.26%); 2007 (2.71%) and 2009 (2.19%) while the remaining seven years produced dividend yields that were below the group average of 2.14%.

Table 4.4: **Average Year-end Dividend Yield (%) for listed Firms in Developed Stock Markets; 1995-2011**

Year End	Stock Exchange						Average
	HSE	JSE	MaSE	MeSE	TSE	WSE	
1995	3.62	2.20	3.80	1.13	0.85	2.30	2.52
1996	2.89	2.24	2.80	1.40	0.72	1.20	1.88
1997	3.51	2.70	2.30	1.40	0.92	1.40	2.04
1998	3.69	3.30	1.50	2.90	1.15	1.00	1.00
1999	2.20	2.00	1.60	0.80	0.99	0.60	0.60
2000	1.99	2.59	1.70	0.98	0.91	0.80	0.80
2001	2.89	2.87	2.00	2.03	1.14	1.30	1.30
2002	3.36	3.70	2.70	2.00	1.42	1.30	1.30
2003	2.92	2.30	2.30	1.90	1.80	1.80	1.50
2004	2.83	2.30	---	1.70	1.16	1.30	1.55
2005	2.87	2.16	2.90	3.70	0.92	2.82	2.56
2006	2.19	2.50	3.10	1.70	1.16	2.92	2.26
2007	2.21	2.70	3.10	---	5.64	2.59	2.71

2008	5.38	4.60	6.60	---	2.52	4.61	3.95
2009	2.33	2.13	4.50	---	2.05	2.14	2.19
2010	---	2.96	---	---	1.84	2.18	1.50
2011	---	2.96	---	---	4.20	4.20	1.57
2012	2.78	2.77	2.41	1.27	2.01	2.01	2.14

Source: World Stock Exchange Fact Book, 2012.

Note: HSE – Hong Kong Stock Exchange **MeSE** – Mexico Stock Exchange
JSE – Johannesburg Stock Exchange **TSE** – Tokyo Stock Exchange
MaSE – Madrid Stock Exchange **WSE** – Warsaw Stock Exchange

For the individual stock exchanges; the Hong Kong Stock Exchange average dividend yield was 2.78% which is the highest followed by those of Johannesburg stock exchange, 2.77% and Madrid stock exchange, 2.41%. The other three stock exchanges: Mexican stock exchange (1.27%); Tokyo stock exchange (1.61%) and Warsaw stock exchange (2.01%) were below the group average of 2.14%.

4.2.2 **Data for Emerging Stock Markets**

The Stock exchanges included as the emerging stock markets are the: Istanbul stock exchange, Nigeria stock exchange, Philippine stock exchange, Prague stock exchange, Taiwan stock exchange and Stock exchange of Thailand.

The results for the emerging stock markets' average share prices and the financial variables (price-earnings ratios, price-book value ratios and dividend yields) are presented in Tables 4.5 – 4.8 below.

4.2.2.1 **Emerging Stock Markets – Average Year - End Share Prices (USSD)**

Presented in Table 4.5 below are the average year–end share prices for each of the stock exchanges in the emerging stock markets category.

As shown in Table 4.5 below; the average share price for the emerging markets steadily declined from 820.56 USSD in 1995 to 8.64 USSD in 1999 before fluctuating downwards and upwards between the years 2000 to 2011. The overall average share price for the period 1995 – 2011 was 16.36 USSD.

Table 4.5: **Average Year-end Share Prices for Listed firms in the Emerging Stock Markets; 1995-2011**

Year End	**Stock Exchange**						**Average**
	ISE	NSE*	PhSE	PrSE	TaSE	SET	
1995	412.44	-	0.02	77.33	1.54	4.01	82.56
1996	228.81	-	0.02	71.13	1.46	3.47	50.82
1997	156.45	-	0.02	67.53	2.26	1.52	37.96
1998	69.16	0.31	0.07	31.09	1.88	0.54	17.18
1999	33.04	0.35	0.04	16.01	1.65	0.75	8.64

2000	33.74	0.25	0.02	23.36	1.82	0.68	9.98
2001	8.49	0.21	0.04	16.40	1.14	0.38	3.61
2002	4.71	0.15	0.06	16.77	0.97	0.34	3.83
2003	2.98	0.18	0.06	21.13	0.84	0.36	4.26
2004	3.31	0.20	0.02	0.02	0.83	0.38	5.29
2005	3.39	0.16	0.04	0.04	1.04	0.25	7.22
2006	3.28	0.14	0.03	0.03	1.19	0.20	9.19
2007	2.68	0.12	0.03	0.03	1.36	0.26	11.33
2008	2.10	0.10	0.05	0.05	1.16	0.16	7.91
2009	0.21	0.11	-	-	0.95	0.17	5.21
2010	3.65	0.09	-	-	1.20	0.25	6.24
2011	2.08	0.07	0.03	0.03	1.37	0.31	6.18
2012	57.09	0.14	0.03	0.03	1.3	0.82	16.36

Source: World Stock Exchange Fact Book, 2012.

*NSE –Computed from NSE Fact Books, 2002-2012

Emerging markets share prices were above average of 16.36 USSD in only four years; 1995 (82.56 USSD), 1996 (50.82 USSD), 1997 (37.96 USSD) and 1998 (17.18 USSD) due mainly to the exerting influence of the Istanbul Stock exchange share price during 1995 - 1997.

On specific market levels, the Istanbul stock exchange had the highest average price of 57.09 USSD followed by the Prague stock exchange with 38.78 USSD. The other four stock exchanges; Nigeria stock exchange (0.14 USSD); Philippine stock exchange (0.03 USSD); Taiwan stock exchange (1.33 USSD) and Stock exchange of Thailand (0.82 USSD) had below average share prices.

4.1.2.2 **Emerging Stock Markets - Average Price - Earnings Ratios**

The emerging stock markets average price-earnings ratios are as shown in Table 4.6 below.

The market average for 1995 is 13.30 followed by a 15.26% increase to 15.33 in 1996 which was followed by an 11.74% decline to 13.53 in 1997. This fluctuating trend continued over every other one or two-year periods till 2011 and averaged at 17.50 at the end of 2011. The average price - earnings ratios were highest in 2002 (46.10); 2001 (31.80) and 2009 (31.09). The best years for earnings investors (year with the lowest price – earnings ratios) were 2008 (8.41), 2011 (8.48) and 2006 (9.82). Other good years with below the group average price - earnings ratios were 1995 (13.30); 1996 (15.33), 1997 (13.53); 1998 (13.56), 2000 (12.69), 2003 (15.38), 2004 (13.06) 2005 (15.22); 2007 (15.15) and 2010 (11.24)

At the level of individual markets, those with below average (good) results were the: Nigeria stock exchange (6.36), Stock exchange of Thailand (9.64), Prague stock exchange (14.39) and the Philippine stock exchange (15.26), the average price - earnings ratios for

the Istanbul stock exchange (31.11) and Taiwan stock exchange (28.86) were (bad) above the group average of 17.50

Table 4.6: **Average Year-end Price-Earnings Ratios for Listed Firms in Emerging Stock Markets; 1995-2011.**

Year End	Stock Exchange						Average
	ISE	NSE*	PhSE	PrSE	TaSE	SET	
1995	9.23	-	19.09	10.40	21.31	19.75	13.20
1996	12.15	-	26.14	12.69	29.01	11.97	15.33
1997	24.39	-	9.45	13.70	27.04	6.59	13.53
1998	8.84	6.25	15.80	14.28	26.14	10.04	13.56
1999	37.52	7.15	16.20	15.94	47.73	14.70	23.21
2000	16.82	8.13	14.16	16.65	14.84	5.52	12.69
2001	108.33	10.25	18.24	7.50	41.57	4.92	31.80
2002	195.92	9.41	14.40	8.14	45.77	6.98	46.10
2003	14.54	6.34	19.20	13.79	24.76	13.65	15.38
2004	14.18	5.36	18.30	18.53	12.58	9.40	13.06
2005	17.19	8.14	24.22	24.22	17.55	9.40	15.22
2006	22.02	10.11	21.72	21.72	18.98	8.10	9.82
2007	12.16	11.11	25.50	25.50	15.31	12.63	15.15
2008	5.50	8.52	11.20	11.20	9.80	7.01	8.41
2009	17.89	8.64	10.79	10.79	110.54	25.56	31.09

2010	12.20	7.72	10.13	10.13	16.04	-	11.24
2011	-	-	9.48	9.48	15.76	12.07	8.98
2012	31.11	6.36	14.39	14.39	28.86	9.64	17.50

Source: World Stock Exchange Fact Book, 2012.

*NSE –Computed from NSE Fact Books, 2002-2012

Note: ISE – Istanbul Stock Exchange **PrSE –** Prague Stock Exchange
NSE- Nigeria Stock Exchange **TaSE –** Taiwan Stock Exchange
PhSE – Philippine Stock Exchange **SET –**Stock Exchange of Thailand

4.1.2.3 **Emerging Stock Markets – Average Year-End Price - Book Value Ratios**

The results for the average year-ends price – book value ratios for each of the stock exchanges in the emerging stock markets category are as presented in Table 4.7 below.

Table 4.7: **Average Year-end Price-Book Value Ratios for Listed Firms in Emerging Stock Markets; 1995-2011.**

Year End	Stock Exchange						Average
	ISE	NSE*	PhSE	PrSE	TaSE	SET	
1995	3.71	-	3.10	1.28	2.50	2.75	2.22
1996	4.52	-	4.08	1.49	2.70	1.58	2.40
1997	8.31	-	1.65	1.31	2.93	0.89	2.52
1998	3.21	1.05	-	1.05	2.20	1.05	1.43
1999	7.70	1.06	-	1.38	2.57	1.78	2.42
2000	3.02	0.82	-	1.54	1.39	1.11	1.31
2001	2.71	0.61	-	1.30	1.66	1.29	1.43

2002	2.01	0.60	-	1.44	1.41	1.36	1.14
2003	2.16	1.12	-	1.04	1.82	2.71	1.48
2004	1.51	1.21	-	1.65	1.73	2.00	1.35
2005	2.11	1.45	-	2.67	1.76	1.91	1.65
2006	1.91	1.61	-	2.37	1.98	1.65	1.59
2007	2.20	1.75	14.17	3.23	1.95	2.00	4.22
2008	1.00	1.81	8.41	2.13	1.09	0.98	2.57
2009	-	1.71	13.10	2.35	1.91	1.56	3.44
2010	1.91	1.84	21.32	2.27	1.95	-	4.88
2011	-	-	16.54	2.14	1.54	1.87	3.68
2012	2.91	0.98	4.85	1.80	1.95	1.56	2.34

Source: World Stock Exchange Fact Book, 2012.

*NSE –Computed from NSE Fact Books, 2002-2012

Note: ISE – Istanbul Stock Exchange **NSE**- Nigeria Stock Exchange
PhSE – Philippine Stock Exchange **PrSE** – Prague Stock Exchange
TaSE – Taiwan Stock Exchange **SET** –Stock Exchange of Thailand

As shown in Table 4.7, the overall average price-book value ratio for the emerging markets for 1995 – 2011 was 2.34. The ratio for 1995 was 2.22 which increased by 8.11% and 5% to 2.40 and 2.52 respectively in 1996 and1997. Thereafter, the average emerging stock markets price-book value ratio fluctuated between every other one or two years. In eight out of the seventeen years studied, price-book value ratios were above the 2.34 group average while in the remaining nine years they were below the average of 2.34. Given the implication of movements in price-book value ratios; 2002

(11.4), 2000 (1.31) and 2004 (1.35) were the best years for book value investors while their worst years were; 2010 (4.88)' 2007 (4.22) and 2009 (3.44).

Concerning the performance of the respective emerging market exchanges, the best for book-value investors are: Nigeria stock exchange (0.98), Stock exchange of Thailand (1.56); Prague Stock exchange (1.80). Other exchanges with below average performances were the Taiwan stock exchange (4.85) and Istanbul stock exchange, 2.91 which were above the overall emerging markets average of 2.34.

4.1.2.4 **Emerging Stock Markets - Average Year-End Dividend Yields (%)**

The average year-ends dividend yields results for the individual stock exchanges in the emerging stock markets category for the period, 1995 - 2011 are as presented in Table 4.8 below.

As shown in Table 4.8; the overall average dividend yield (%) for the emerging stock markets for the period was 2.82%. The dividend yield for 1995 was 2.02% which increased by 254% to 5.13 in 1996 before falling by 57.12% to 2.20 in 1997. Like some of

Table 4.8: **Average Year-end Dividend Yields (%) for Listed Firms in Emerging Stock Markets; 1995-2011**

Year	**Stock Exchange**						
	ISE	NSE*	PhSE	PrSE	TaSE	SET	

End							Average
1995	3.56	-	6.57	1.88	3.88	2.25	2.02
1996	2.87	-	19.06	1.43	3.94	3.50	5.13
1997	1.56	-	1.29	1.51	2.82	6.04	2.20
1998	3.37	2.13	0.50	1.47	4.47	1.34	2.21
1999	0.72	1.19	0.70	0.62	2.68	0.61	1.09
2000	1.29	1.82	1.32	0.59	5.38	1.78	2.03
2001	0.95	2.75	1.15	6.69	4.85	2.06	3.08
2002	1.20	3.25	-	3.62	3.70	2.72	2.42
2003	0.94	2.40	-	7.09	3.10	1.81	2.56
2004	1.337	1.32	1.70	4.17	4.38	2.75	2.62
2005	1.71	1.60	1.50	1.85	5.39	3.37	2.57
2006	2.10	0.92	-	3.78	4.21	4.23	2.54
2007	1.90	0.78	2.33	2.89	4.22	3.31	2.57
2008	4.93	1.56	5.64	6.78	9.83	6.57	5.89
2009	2.37	2.22	-	6.44	2.76	3.86	2.94
2010	1.99	2.65	2.64	6.39	3.58	-	2.89
2011	-	-	2.91	7.11	5.65	3.72	3.23
2012	1.93	1.45	2.43	3.78	4.40	2.94	2.82

Source: World Stock Exchange Fact Book, 2012.

*NSE –Computed from NSE Fact Books, 2002-2012

the other variables in the emerging market, dividend yields also fluctuated between every one or two year periods. The lowest dividend yield was the 1.09% in 1999 and the highest of 5.89% in 2008.

Concerning the individual stock exchanges, the best performing stock market for dividend investors was the Taiwan stock exchange with dividend yield of 4.40% followed by the Prague stock exchange with 3.78% and the Stock exchange of Thailand with 2.94%. The poor dividend – share price performing stock exchanges for the period were the Philippine stock exchange 2.43%; Istanbul stock exchange 1.93%' and Nigeria Stock exchange 1.45%

4.1.3 **Share Prices and the Financial Variables in the Developed Stock Markets**

The summary of the average year-end share prices and the financial variables (price-earnings ratios, price-book value ratios and dividend yields) for the developed stock markets for the period, 1995- 2011 are presented in Table 4.9 below.

As shown in Table 4.9; the overall average share price for the developed stock markets for the period was 6.44 USSD when the average price-earnings ratio was 27.49 times the price book value ratio 1.43 times and the average dividend yield. 2.14%.

Average share price for the emerging markets was highest in 1997 at 10.20 USSD when price-earnings ratio was 19.38 times; price-book value ratio 1.76 times and dividend yield 2.04%. The second highest average share price was recorded in 1996 at 9.14 USSD

Table 4.9: **Average Share Prices and Financial Variables of listed Firms in Developed Stock Markets; 1995-2011.**

Year End	SP_D	Financial Variable		
		PER_D	PBR_D	DIY_D
1995	3.81	26.58	1.29	2.32
1996	9.14	26.61	1.54	1.88
1997	10.20	19.38	1.76	2.04
1998	8.50	31.40	1.74	2.26
1999	8.42	18.90	2.28	1.37
2000	9.12	26.04	1.95	1.50
2001	6.26	31.04	1.46	2.45
2002	5.37	13.79	1.27	2.46
2003	5.18	130.98	1.35	2.27
2004	6.24	20.98	1.64	1.55
2005	6.33	21.15	1.18	2.56
2006	5.68	20.64	2.28	2.26
2007	7.61	19.19	1.68	2.71
2008	4.37	12.28	1.13	3.95
2009	2.53	18.22	0.85	2.19
2010	2.83	19.00	0.50	1.50
2011	3.07	11.20	0.39	1.57
Average	6.44	27.49	1.43	2.14

Source: World Stock Exchange Fact Book, 2012.

Notes: **SP_D** - Average share price for listed firms in developed markets

PERD **-** Average price-earnings ratio for listed firms in developed markets

`PBRD **-** Average price-book value ratio for listed firms in developed markets

DIYD **-** Average dividend yield for listed firms in developed markets

when price-earnings ratio was 26.61 times; price-book value ratio 1.54 times and dividend yield 1.88%. The third highest average price was 9.12 USSD in the year, 2000 when price-earnings ratio was 26.04 times; price-book value ratio 1.95 times and dividend yield 1.50%.

Share prices in the developed stock markets were lowest in 2009 at an average of 2.53USSD when price-earnings ratio was 18.22 times; price-book value ratio, 0.85 times and dividend yield 2.19%. This is followed by 2010, when average share price was 2.83 USSD, price-earnings ratio, 19.00 times; price-book value ratio 0.50 times and dividend yield 1.50%. The next lowest average share was 3.07 USSD in 2011 when price-earnings ratio was 11.20 times; price-book value ratio, 0.39 times and dividend yield 1.57%.

4.1.4 Share Prices and the Financial Variables in the Emerging Stock Markets

The results for the emerging stock market share prices and the financial variables (price-earnings ratios, price-book value ratios and dividend yields) are presented in Table 4.10 below.

As shown in Table 4.10, the overall average share price for the emerging stock markets for the period, 1995-2011 was 16.36 USSD while the average price-earnings ratio was 17.50 times, the price-book value ratio, 2.34 times and dividend yield, 2.82%.

Table 4.10: **Average Share Prices and Financial Variables of Listed Firms in Emerging Stock Markets; 1995-2011.**

Year End	SP_E	Financial Variable		
		PER_E	PBR_E	DIY_E
1995	82.56	13.30	2.22	2.02
1996	50.82	15.33	2.40	5.13
1997	37.96	13.50	2.52	2.20
1998	17.18	13.56	1.43	2.21
1999	8.64	23.21	2.42	1.09
2000	9.98	12.69	1.31	2.03
2001	3.61	31.80	1.43	3.08
2002	3.83	46.10	1.14	2.42
2003	4.26	15.38	1.48	2.56
2004	5.29	13.06	1.35	2.62
2005	7.22	15.22	1.65	2.57
2006	9.19	9.82	1.59	2.54
2007	11.33	15.15	4.22	2.57
2008	7.91	8.41	2.57	5.89
2009	5.21	31.09	3.44	2.94
2010	6.24	11.24	4.88	2.89
2011	6.18	8.98	3.68	3.23

Average	16.36	17.50	2.34	2.82

Source: Tables 4.5-4.8

Notes: – SP_E Average Share price in Emerging Stock Markets.
PER_E – Average price-earnings ratio in Emerging stock Markets
PBR_E – Average price-book value ratio in Emerging Stock Markets
DIY_E – Average dividend yield in the Emerging Stock Markets

Just as the average share prices fluctuated over the period; the fundamental variables also fluctuated every one or two years. The highest average share price for the emerging markets of 82.56 USSD was in 1995 when price-earnings ratio was 13.30 times; price-book value ratio 2.22 times and dividend yield 2.02%. This was followed by 1996 with average share price of 50.82 USSD when price-earnings ratio was 15.33 times, price-book value ratio, 2.40 times and dividend yield, 2.02%.

In 1997, average share price fell to 37.96 USSD when price-earnings ratio was 13.50 times, price-book value ratio 2.52 times and dividend yield, 2.20%.

The lowest average share price in the emerging stock markets was recorded in 2001 at 3.61 USSD when price-earnings ratio was 31.80 times, price-book value ratio, 1.43 times and dividend yield 3.08%. This was closely followed by 3.83 USSD in 2002 when average price-earnings ratio increased by 44.97%; that is 10 46.10 times but price-book value ratio decreased by 20.28% to 1.14 times over the same period and dividend yield was 2.42%. In 2003; average share price for the emerging markets increased by 0.43 USSD above the 3.83 USSD in 2002 to 4.26 USSD. During the same year, price-earnings ratio reduced by 30.72 from 46.10 to 15.38 times while price-book value increased marginally by 0.34 to 1.48 times and dividend yield also increased marginally by 5.79% to 2.56%.

4.1.5 Comparing Performance of the Financial Variables in the Developed Stock Markets and Emerging Stock Markets.

The financial variables are those basic indices published by world stock markets that indicate firms' earnings, book values and dividend payouts. In an efficient market; the size of each of these variables should to some extent matter in the pricing of each firm's shares. This is because equity investors bother about the amount of earnings, book values or dividends offered by each firm and will generally prefer to invest in those stock markets where their expectations are highest.

These financial variables; price-earnings ratio, price-book value ratio and dividend yield are employed as proxies for earnings, book values and dividend payout respectively. The mean sizes of these variables are compared for the developed stock markets and emerging stock markets and results presented in Tables 4.11 – 4.13 below.

4.1.5.1 **Performance of Price – Earnings Ratios in Developed Stock Markets and Emerging Stock Markets**

The sizes of average price-earnings ratios for the developed stock markets compared with the emerging stock markets are presented comparison in Table 4.11 below.

As shown in Table 4.11, the overall average size of price-earnings ratio for the developed stock markets sampled was 27.49 times while that for the emerging markets for the same period was 17.52 times. The implication of this is that earnings investors in the developed stock markets paid prices that were 27.49 times higher than their dollar earnings for each outstanding share. Equity investors in the emerging stock markets on the other hand bought shares at prices that were on the average 17.50 times higher than every dollar of earnings due on each outstanding share.

Table 4.11: **Mean Size of Price-Earnings Ratios for Developed Stock Markets and Emerging Stock Markets**

YEAR	PER_D	PER_E	YEAR	PER_D	PER_E
1995	25.56	13.30	2004	20.98	13.06
1996	26.61	15.33	2005	21.15	15.22
1997	19.38	13.50	2006	20.64	9.82
1998	31.40	13.56	2007	19.19	15.15
1999	18.90	23.21	2008	12.28	8.41
2000	26.04	12.69	2009	18.22	31.09
2001	31.04	31.80	2010	19.00	11.24
2002	13.79	46.10	2011	11.20	8.98
2003	130.98	15.38	Average	27.49	17.50

Source: Table 4.2 & 4.6

Note: PER_D →Price-Earnings Ratios for Developed Stock Markets

PER_E → Price- Earnings Ratios for Emerging Stock Markets

When compared on trend basis, the developed stock markets average price-earnings ratio of 26.56 is almost two times higher than 13.30 for the emerging stock markets in 1995. However in 1996; when the developed stock markets average price-earnings ratio increased by a marginal 0.02%; that of the emerging stock markets increased by a

substantial 15.26% to 15.33 times. In 1997; there was decline in average price-earnings ratios for both the developed stock markets and the emerging stock markets but increased for both groups of markets in 1998; while the developed markets increased substantially by 62.02%; the emerging stock markets increased marginally by 0.44%. The increase for the developed stock markets continued to 2001 at 31.04 times when for the first time; the emerging stock markets average price-earnings ratio exceeded the developed stock markets at 31.80times. This higher average price-earnings ratios for emerging markets than for the developed stock markets that started in 2001 continued in 2002 before the 9.50 times jump to130.98 for the developed markets in 2003; when the emerging stock markets went down 3 times to 15.38.

The fluctuations and differences in size of average price-earnings ratios in both the developed and emerging stock markets also continued through 2004 – 2011; with the developed stock markets having higher numbers than the emerging stock markets in thirteen out of the seventeen years studied.

4.1.5.2: **Performance of Price – Book Value Ratios for Developed Stock Markets and Emerging Stock Markets**

Price – book value ratios measure the relationship between market price per share and net-book value per share and the average book value investor prefers lower price-book value ratios to higher ones. An average equity investor will therefore prefer to invest in stock markets offering lower price-book value ratios. Comparative price-book value

ratios for both the developed stock markets and emerging stock markets are presented in Table 4.12 below.

As shown in Table 4.12; the average price-book value ratio for the developed stock markets for 1995-2011 is 1.43 times as against 2.34 times for the emerging stock markets. The implication of this is that the developed stock markets offered investors better price-book value ratios than the emerging markets during the analysis period.

In 1995, average price-book value ratios for the emerging markets was 2.22 times, 172% higher than 1.29 for the developed stock markets. Average price-book value ratios for the developed markets increased by 19.38% to 1.54 in 1996 and by 14.29% to 1.76 in 1997 while price-book value ratios for the emerging markets increased by 8.11% and 5% during the same 1996 and 1997 respectively. The yearly increase is price-book value ratios for the developed markets continued till 1999 at 2.28 before declining by 14.47% in the year 2000. This declining trend in price-book value ratios of the developed markets continued till 2002. The average price-book value ratios for the developed stock markets fluctuated in between periods of one or two years from 1998 and 2006.

After increasing from 1.27 in 2002 to 1.35 in 2003 and 1.64 in 2004; price-book value ratios for the developed stock markets dropped by 28.05% to 1.18 in 2005 before increasing by 93.22% to 2.28 in 2006. Thereafter average price-book value ratios for the developed markets declined steadily between 2007 and 2011; ending at 0.39. The highest increase in average price-book value ratios for the emerging markets was from 1.59 in 2006 to 4.22 in 2007; that is 165.41%. The fluctuations in price-book value ratios

in the emerging markets continued to the end of the period at 3.68; 9.44 times higher than the average price-book value ratios for the developed stock markets.

Table 4.12: **Mean Size of Price- Book Value Ratios for Developed Stock Markets and Emerging Stock Markets**

YEAR	PER_D	PER_E	YEAR	PER_D	PER_E
1995	1.29	2.22	2004	1.64	1.35
1996	1.54	2.40	2005	1.18	1.65
1997	1.76	2.52	2006	2.28	1.59
1998	1.74	1.43	2007	1.68	4.22
1999	2.28	2.42	2008	1.13	2.57
2000	1.95	1.31	2009	0.85	3.44
2001	1.46	1.43	2010	0.50	4.88
2002	1.27	1.14	2011	11.39	3.68
2003	1.35	1.48	Average	1.43	2.34

Source: Table 4.3 & 4.7

Note: PER_D →Price- Book value Ratios for Developed Stock Markets

PER_E →Price –Book value Ratios for Emerging Stock Markets.

4.1.5.3 **Performance of Dividend Yields (%) For Developed Stock Markets and Emerging Stock Markets.**

Dividend yield expresses the relationship between dividend per share and market price per share. The dividend investor prefers higher dividend yields to lower dividend yields and will invest in firms or stock markets offering higher dividend yields. Comparative dividend yields for both the developed stock markets and the emerging markets are presented in Table 4.13 below.

Table 13: **Mean Size of Dividend Yield (%) for Developed Stock Markets and Emerging Stock Markets.**

YEAR	**DIY_D**	**DIY_E**	**YEAR**	**DIY_D**	**DIY_E**
1995	20.32	2.02	2004	1.55	2.62
1996	1.88	5.13	2005	2.56	2.57
1997	2.04	2.20	2006	2.26	2.54
1998	2.26	2.21	2007	2.71	2.57
1999	1.37	1.09	2008	3.95	5.89
2000	1.50	2.03	2009	2.19	2.94
2001	2.45	3.08	2010	1.50	2.89
2002	2.46	2.42	2011	1.57	3.23

2003	2.27	2.56	Average	2.14	2.82

Source: Table 4.4 and 4.8

The average dividend yield for the emerging markets, of 2.82% as shown in Table 4.13 is 1.32 times higher than the 2.14% for the developed stock markets. This implies that for the period, 1995 – 2011 equity investors received higher dividend income than every dollar paid per share in the emerging stock markets than in the developed stock markets.

In 1995 average dividend yield for the developed stock markets was 2.32%; that is 1.15 times higher than the 2.02% for emerging stock markets while average dividend yields reduced to 1.88% in 1996 while that of the emerging markets increased 2.54 times to 5.13%. While the ratio for developed markets increased to 2.04 in 1997; that of the emerging markets dropped substantially from 5.13 to 2.20. In 1998, the yields for both groups of markets increased and also decreased together in 1999. Average dividend yields for the developed markets increased thereafter from 2000 at 1.50% to 2.45% in 2001 before dropping by 7.72% to 2.27% in 2003. Dividend yields which fluctuated upwards and downwards yearly and particularly during the first part of the analysis period, was highest in 2001 at 3.08% before dropping to 2.42% in 2002; and increasing again to 2.56% in 2003 for the emerging markets.

During the second part of the analysis period, 2004 – 2011; the upward and downward fluctuations in dividend yields for both the developed and emerging stock markets continued. During this period; the yield for the developed markets was lowest in 2010 at

1.50% and highest in 2008 at 3.95%. Dividend yield for the emerging markets was lowest in 2006 at 2.54% and highest also in 2008 like in the developed markets but at 5.89%. Fluctuations in the emerging markets were more marginal than for the developed markets.

4.2 Data Analysis

In this section the research data obtained and presented in 4.1 are statistically analyzed. The analysis provides answers to the research questions and hypotheses raised in chapter one.

The analysis of Tables 4.9, 4.10, 4.11, 4.12 and 4.13 was carried-out using the econometric software called E-view Version 7 and Microsoft Excel. The results of the analyses are shown in Tables 4.14 – 4.22 and described using Figures 4.1 – 4.6 below.

4.2.1 Relationship between the Financial Variables and Share Prices in Developed Stock Markets

In order to have a detailed analysis regarding the relationship between the financial variables and share prices in the developed stock markets an initial attempt is made to look at the simple and appropriate descriptive statistics, correlation matrix *as* well as regression analysis employed using data from Table 4.9 above.

(a) Descriptive statistics analysis

Table 4.14 below shows the summary statistics necessary for the analysis of the basic features of the data employed in the research. It shows that the calculated mean, standard

deviation and median of the dependent variable, average share price in the developed markets (SP_D) stood at 6.453529, 2.389466 and 6.26 respectively.

Again, the price- earnings ratio (PER_D) ranged between 10.9 and 31.4 with a mean value of 20.14. Furthermore, the price-book value ratio (PBR_D) ranged from a minimum of 0.39 to a maximum of 2.29. With an average (mean) value of 1.43; the dividend yields (DIY_D) ranged from a minimum value of 1.37 to a maximum of 3.95 with an average of 2.17

Table 4.14: **Descriptive Statistics for Developed Stock Markets' Model**

	SP_D	PER_D	PBR_D	DIY_D
Mean	6.453529	20.13588	1.429412	2.167059
Median	6.260000	19.33000	1.460000	2.260000
Maximum	10.20000	31.40000	2.290000	3.950000
Minimum	2.530000	10.90000	0.390000	1.370000
Std. Dev.	2.389466	6.506505	0.532922	0.622834
Skewness	-0.174648	0.230345	-0.290945	1.164968
Kurtosis	1.896757	2.054476	2.644225	4.990635
Jarque-Bera	0.948566	0.783595	0.329497	6.652124
Probability	0.622331	0.675841	0.848107	0.035934

Sum	109.7100	342.3100	24.30000	36.84000
Sum Sq. Dev.	91.35279	677.3538	4.544094	6.206753
Observations	17	17	17	17

Source**:** *Author's Computation Using Table 4.9*

More specifically, the Jarque- Bera Statistics is used to ascertain whether or not the series is normality distributed. A close look at the independent variables – PERD, PBRD and DIYD – and the reported probability values computed with exception of PBRD where P= 0.00 < 0.05) the series are not normally distributed. This observation is a necessary ingredient of a typical stock market which is usually characterized by a random walk.

(b) **Correlation Matrix Analysis for Developed Stock Markets**

The basis of the correlation matrix analysis is to determine the relationship between the variables employed in the model. The result is contained in Table 4.15 below.

Table 4.15 shows the correlation matrix result of the analysis. It shows that SPD (the dependent variable) bears with all the independent variables except DIYD. Precisely, it shows that there exists a positive relationship between SPD and PERD of about 48.1 percent. Again SPD had a very strong positive relationship of 71.6 percent with PBRD.

Table 4.15: **Correlation Matrix for Developed Stock Markets' Model**

	SPD	PERD	PBRD	DIYD
SPD	1.000000	0.480465	0.715783	-0.137185
PERD	0.480465	1.000000	0.251163	-0.065664
PBRD	0.715783	0.251163	1.000000	-0.087564
DIYD	-0.137185	-0.065664	-0.087564	1.000000

Source: *Author's Computation Using Table 4.9*

On the other hand, SPD had a very weak negative relationship of about 13.7 percent with DIYD.

(C) Short-Run Analysis of Ordinary Least Square (OLS) Results for Developed Stock Markets

Table 4.16 below shows the result of the OLS conducted on equation 3.1; in chapter three. Specifically, it shows the short-run (static) relationship between variables – the dependent and independent variables.

Table 4.16: **Developed Stock Markets' Conventional Regression Analysis**

Dependent Variable: SPD
Method: Least Squares
Date: 10/02/13 Time: 07:07
Sample: 1995 2011
Included observations: 17

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.568032	2.228419	0.254903	0.8028
PERD	0.116814	0.065568	1.781585	0.0982
PBRD	2.827169	0.801876	3.525694	0.0037
DIYD	-0.234351	0.665560	-0.352110	0.7304
R-squared	0.612540	Mean dependent var		6.453529

Adjusted R-squared	0.523127	S.D. dependent var	2.389466
S.E. of regression	1.650070	Akaike info criterion	4.041837
Sum squared resid	35.39552	Schwarz criterion	4.237887
Log likelihood	-30.35562	Hannan-Quinn criter.	4.061325
F-statistic	6.850628	Durbin-Watson stat	1.654637
Prob(F-statistic)	0.005214		

Source: *Author's Computation from Table 4.9; Using E-View Version 7*

A close look at Table 4.16 reveals that the R^2 calculated is 0.612540. This means that about 61.16 percent of the total variation in SP_D is caused by the independent variables PER_D, PBR_D and DIY_D. The remaining 39% is caused by factors exogenous to the model but accounted for by the error term. Also, the overall model is statistically significant since the calculated F-ratio of 6.85 is greater than the Table value of 3.41. More importantly, the DW statistic value computed for 1.655 is not up to 2, hence, suggests a minimal level of serial auto correlation in the model.

On theoretical (apriori) expectation all the independent variables are rightly signed with SP_D. The policy implication of this finding is that there exist positive relationships between PER_D, PBR_D and SP_D while DIY_D bears a negative relationship with SP_D.

4.2.2 **Relationship between the Financial Variables and Share Prices in Emerging Stock Markets**

The analysis of the relationship between the financial variables and share prices in emerging stock markets follows the same pattern with that of the developed stock markets. Accordingly we begin with the descriptive statistics.

(a) Descriptive Statistics Analysis

Table 4.17 below presents the summary of the descriptive statistics attributes of the nature of financial variables and share prices in the emerging stock markets.

It shows that the computed mean for stock prices for the emerging stock markets (SPE) stood at 16.32 with minimum and maximum values of 3.61 and 82.56. Also, the price-earnings ratio (PERE) ranged between 8.41 and 46.1 with an average of 17.51. Furthermore, its sleekness and kurtosis values computed are 1.693 and 5.03. On the other hand, the calculated mean (average) for dividend - yield (DIYE) is 2.34. It equally ranged from 1.14 to 4.88 with a probability value of 29 percent.

Table 4.17: **Descriptive Statistics for Emerging Stock Markets' Model**

	SPE	PERE	PBRE	DIYE
Mean	16.31824	17.50824	2.337059	3.544706
Median	7.910000	13.56000	2.220000	2.570000
Maximum	82.56000	46.10000	4.880000	9.940000
Minimum	3.610000	8.410000	1.140000	1.090000
Std. Dev.	21.34241	10.02094	1.118497	2.295354
Skewness	2.178954	1.693578	0.933603	1.665387
Kurtosis	6.731951	5.032314	2.786205	4.844947
Jarque-Bera	23.31750	11.05221	2.501953	10.26934

Probability	0.000009	0.003981	0.286225	0.005889
Sum	277.4100	297.6400	39.73000	60.26000
Sum Sq. Dev.	7287.977	1606.707	20.01655	84.29842
Observations	17	17	17	17

Source: *Author's Computation from Table 4.10; Using E-View Version 7*

One important observation in Table 4.17 is that all the calculated values for the Jarque – Bera Statistics is in each case greater than the 5 percent level. This shows that the series is not normally distributed. Again, this is one of the challenges of a time series data especially share price-earnings relationship that is always vulnerable to high degree of volatility.

(b) Correlation Matrix Analysis for Emerging Stock Markets

As earlier mentioned, the essence of the correlation analysis is to decipher the nature of relationships between the variables. Thus Table 4.18 presents the correlation matrix for the emerging stock markets.

Table 4.18: **Correlation Matrix for Emerging Stock Markets' Model**

	SPE	PERE	PBRE	DIYE

SPE	1.000000	-0.222957	-0.000277	-0.163516
PERE	-0.222957	1.000000	-0.245593	0.128318
PBRE	-0.000277	-0.245593	1.000000	0.161995
DIYE	-0.163516	0.128318	0.161995	1.000000

Source: *Author's Computation from Table 4.1; Using E-View Version 7*

Table 4.18 above shows that there exists a very weak and negative relationship between the dependent variable (SPE) and the independent variables; PERE, PBRE and DIYE. Precisely, it shows that PERE has a very weak negative relationship of about 22 percent with SPE. Both PBRE and DIYE equally had a very weak relationship of 0.0.1 and 16 percents with SPE. These observations merely inform us about dissociation and not causation. Hence, calls for regression analysis.

(c) **Short-Run Analysis of Ordinary Least Square (OLS) Results for the Emerging markets**

Table 4.19 below indicates that R^2 computed is 0.069115, which suggests that about 7 percent of the total variation in SPE The remaining 93% is explained by other factors not captured in the model but covered by the error term. Also the f-ratio computed of 0.321734 is less than the table value of 3.41. Thus the overall model is not statistically significant at 5 percent level. More importantly the calculated value for the DW statistic of 0.312646 is very far from 2. Based on the-rule-of the thumb, there is a high degree of serial autocorrelation in the model. By extension, it implies that the series is not

stationary. This affirms the values for the Jarque–Bera Statistics. However, its conclusion can be used for short-run policy formulation and recommendations.

Table 4.19: **Emerging Stock Markets' Conventional Regression Analysis**
Dependent Variable: SPE
Method: Least Squares
Date: 10/02/13 Time: 07:11
Sample: 1995 2011
Included observations: 17

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.01996	19.30378	1.555134	0.1439
PERE	-0.455592	0.597217	-0.762858	0.4592
PBRE	-0.602976	5.377439	-0.112131	0.9124
DIYE	-1.217568	2.561277	-0.475375	0.6424

R-squared	0.069115	Mean dependent var	16.31824
Adjusted R-squared	-0.145705	S.D. dependent var	21.34241
S.E. of regression	22.84441	Akaike info criterion	9.297614
Sum squared resid	6784.270	Schwarz criterion	9.493664
Log likelihood	-75.02972	Hannan-Quinn criter.	9.317102
F-statistic	0.321734	Durbin-Watson stat	0.312646
Prob(F-statistic)	0.809589		

Source: *Author's Computation from Table 4.10; Using E-View Version 7*

To digress a little, Table 4.19 further reveals that all the independent variables are wrongly signed except DIYE. The implication of this is that both PERE and PBRE bear negative signs instead of the expected positive signs.

4.2.3 Comparative Performance Analysis of Price-Earnings Ratios for Listed Firms in Developed Stock Markets and Emerging Markets Stock Markets.

The comparative performance analysis of listed firms' earnings in developed stock markets and emerging stock markets harps on the computations using Table 4.11. The results of the analysis are contained in Figures 4.1, and 4.2 below.

Figure 4.1: **A Line Graph Showing Comparative Performance Trends in Price-Earnings Ratios of Listed Firms in the Developed Stock Markets and Emerging Stock Markets, 1995-2011**

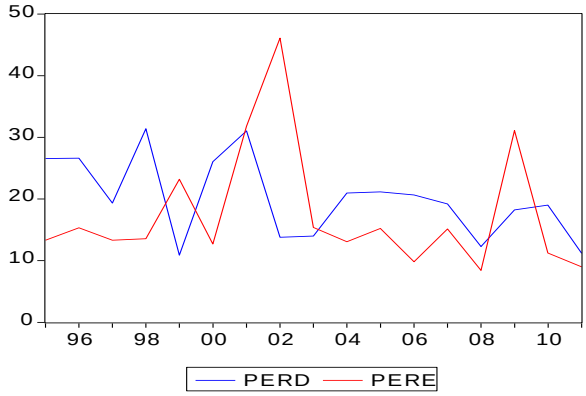
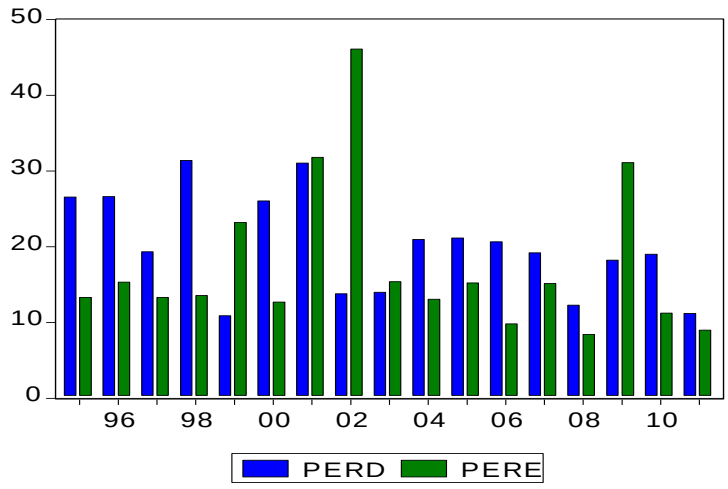


Figure 4.1 above shows the performance trend in price-earnings ratios that characterized the period, 1995 - 2011. With the exception of 1998, 1999 2002 and 2009, the developed markets (PERD) had continually out-sized that of the emerging markets. This shows that the average price-earnings ratios in the developed stock markets (PERD) were many times higher in thirteen out of the seventeen years analyzed than the average for the emerging stock markets (PERE).

Figure 4.2: **A Bar Chart Showing Comparative Performance Trends in Price-Earnings Ratios in the Developed Stock Markets and Emerging Stock Markets, 1995-2011**



The implication of this observation is that for majority of the analysis period, shareholders in the developed markets paid higher dollar price per share than the earnings due on each outstanding share compared to those in the emerging markets. Conversely, it also implies that equity investors in the emerging markets received higher dollar earnings relative to share prices than those in the developed stock markets.

4.2.4 Comparative Performance Analysis of Price-Book Value Ratios for Listed Firms in the Developed Stock Markets and Emerging Stock Markets, 1995 – 2011.

A close look at the values suggests that the emerging markets PBRE are better than that of the developed stock markets. More importantly, the overall mean for developed market stood at 1.43 while that of emerging market is 2.82, almost double of PBRD

The observation here is that listed firms' shares in the emerging stock markets were sold at prices that were higher relative to the net-book values of the underlying assets when compared to the developed stock markets. On the other hand, the average net book values

of listed firms in the developed stock markets were bigger in size than those of the emerging stock markets.

Figure 4.3: **A Line Graph Showing Comparative Performance Trends in Price-Book Value Ratios in Developed Stock Markets and Emerging Stock Markets, 1995-2011**

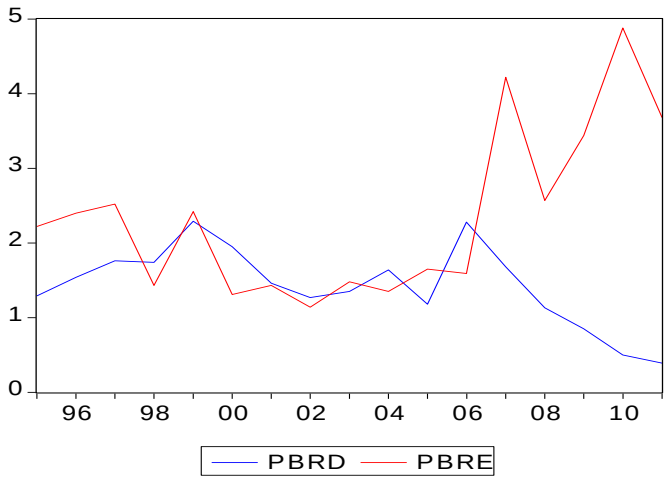
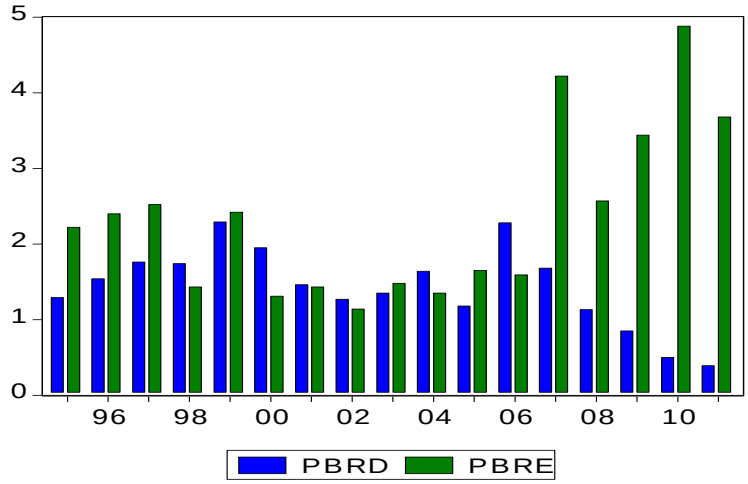


Figure 4.4: **A Bar Chart Showing Comparative Performance Trends in Price-Book Value Ratios in Developed Stock Markets and Emerging Stock Markets, 1995-2011**



Figures 4.3 and 4.4 above present the nature of mean sizes of price-book value ratios for firms in the developed stock markets and emerging stock markets.

4.2.5 **Comparative Performance Analysis of Dividend Yields for Listed Firms in the Developed Stock Markets and emerging stock markets.**

One important attribute of both developed stock markets and emerging stock markets' firms is that of undulating size of their dividend yields. In the present study, on the average, the mean value of dividend yields for listed firms in the emerging stock markets stood at 2.14 while that of developed market is 2.14

The meaning of this is that the size of dividend per share relative to market price per share is similar for both the developed stock markets and the emerging stock market for the analysis period. Therefore, when compared to the average share price of listed firms, the size of dollar dividends per share due to equity investors in both the developed stock markets and the emerging stock markets were higher for the emerging stock market than that of the developed stock market.

Figure 4.5: A Line Graph Showing Comparative Performance Trends in Dividend Yield (DIY) in the Developed Stock Markets and Emerging Stock Markets, 1995-2011

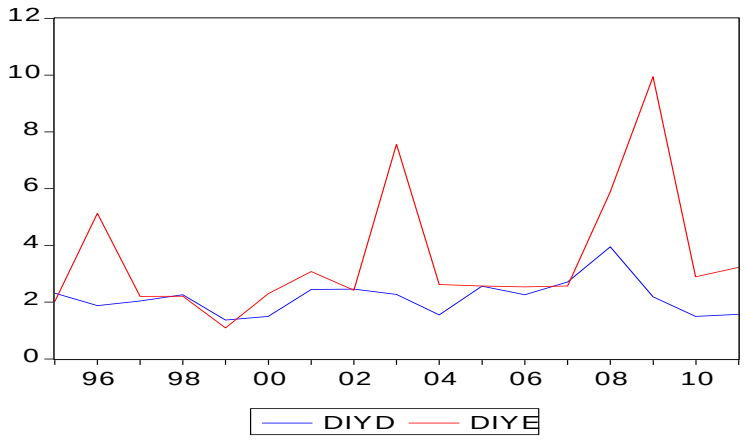
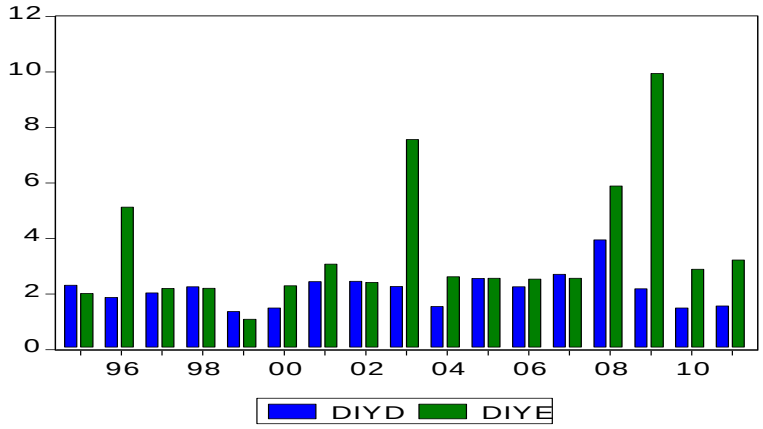


Figure 4.6: A Bar Chart Showing Comparative Performance Trends in Dividend Yield (DIY) in the Developed Stock Markets and Emerging Stock Markets, 1995-2011



4.3 **Testing of Hypotheses**

To verify the statistical significance of association between the variables in the study, each of the hypotheses formulated in chapter one is restated in their null as well alternative forms and tested.

4.3.1 **Hypothesis One**

Ho1: There is no significant relationship between the fundamental variables and share prices of listed firms in the developed stock markets.

H_A1: There is a significant relationship between the financial variables and share prices of listed firms in the developed stock markets.

Decision Rule:

(i) Reject null hypothesis and accept alternative hypothesis if; calculated t value is greater than table t- ratio. at 0.05 level of significance

(ii) Accept null hypothesis and reject alternative hypothesis if; calculated t value is less than table t- ratio. at 0.05 level of significance

The testing of this hypothesis is based on the computations in Table 4.16 thus, its computed t-value for the fundamental variables except DIY_D are greater than the Table t-ratio of 1.75.

Decision

Accordingly, we reject the null hypothesis and accept the alternative hypothesis which says there is a significant relationship between the financial variables and share prices in developed stock markets.

The policy interpretation of this finding is that, based on the 1995-2011 data; the financial variables are related with share prices in the developed stock markets and therefore equity investors in these markets relied on changes in the fundamental variables in their investment decisions.

4.3.2 **Hypothesis Two**

Ho2: There is no significant relationship between the fundamental variables and share prices of listed firms in the emerging stock markets.

H_A2: There is a significant relationship between the financial variables and share prices of listed firms in the emerging stock markets.

Decision Rule:

(i) Reject null hypothesis and accept alternative hypothesis if; calculated t value is greater than table t- ratio. at 0.05 level of significance

(ii) Accept null hypothesis and reject alternative hypothesis if; calculated t value is less than table t- ratio. at 0.05 level of significance

Table 4.19 documents the basic data for testing this hypothesis. A look at the table shows that all the t- values calculated for the financial variables are less than the t- Table value of 1.75 at 5 percent level of significance.

Decision

Hence, we accept the null hypothesis which says there is no significant relationship between financial variables and share prices in emerging stock markets.

The implication of this finding is that the financial variables were not significantly relevant to share pricing in the emerging markets based on the 1995-2011data. That is to say, share prices in the emerging stock markets are determined by factors other than the financial variables.

4.3.3 **Hypothesis Three**

Ho3: The performance of price-earnings ratios for listed firms in the developed stock markets and those in the emerging stock markets do not differ significantly.

H_A3: The performance of price-earnings ratios for listed firms in the developed stock markets and those in the emerging stock markets differ significantly.

Decision Rule:

(i) Reject null hypothesis and accept alternative hypothesis if calculated F- value is greater than critical F- value at 0.05 level of significance

(ii) Accept null hypothesis and reject alternative hypothesis if calculated F- value is less than critical F- value at 0.05 level of significance

Table 4.20 below shows that the calculated F-value of 1.999 is less than the critical F-value of 3.41 at o.05 level of significance.

Decision

Accordingly, the null hypothesis which states that the performance of listed firms' price-earnings ratios do not differ significantly between the developed stock markets and emerging stocks markets is upheld. The alternative hypothesis is therefore rejected.

The implication of this is that the mean price-earnings ratios for both the developed stock markets and the emerging stock markets are statistically similar. And therefore, dollar prices paid relative to earnings per share by investors in both the developed and emerging stock markets were almost the same.

Table 4.20: **ANOVA Analysis Using Comparative Performance Trends in Price-Earnings Ratios in the Developed Stock Markets and Emerging Stock Markets**

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Developed	17	467.36	27.49176471	745.1357529
Emerging	17	297.84	17.52	100.3163375

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	845.2067765	1	845.2067765	1.999419686	0.167015335	4.149097409
Within Groups	13527.23345	32	422.7260452			
Total	14372.44022	33				

Source: *Author's Computation from Table 4.11; Using E-View Version 7*

4.3.4 **Hypothesis Four**

Ho4: The performance of price-book value ratios for listed firms in the developed stock markets and those in the emerging stock markets do not differ significantly.

HA4: The performance of price-book value ratios for listed firms in the developed stock markets and those in the emerging stock markets differ significantly.

Decision Rule:

(i) Reject null hypothesis and accept alternative hypothesis if calculated F- value is greater than critical F- value at 0.05 level of significance

(ii) Accept null hypothesis and reject alternative hypothesis if calculated F- value is less than critical F- value at 0.05 level of significance

Table 4.21 below shows that the computed F- value of 40.513 is greater than the critical F- value of 3.41 at 0.05 level of significance

Table 4.21: **ANOVA Analysis Using Comparative Performance Trends in Price –Book Value Ratio (PBR) in the Developed Stock Markets and Emerging Stock Markets**

Anova:Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Developed	2	0.89	0.445	0.00605
Emerging	2	8.56	4.28	0.72

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	14.707225	1	14.707225	40.5129812	0.023806	18.51282051
Within Groups	0.72605	2	0.363025			
Total	15.433275	3				

Source: *Author's Computation from Table 4.12; Using E-View Version 7*

Decision

The null hypothesis which states that the performance of price--book value ratios of firms in the developed stock markets and those in the emerging stock markets do not differ significantly is rejected and the alternative hypothesis accepted.

This finding implies that mean sizes of price-book value ratios of firms in the developed stock markets and emerging stock markets are not similar and therefore net-book value investors cannot obtain similar returns by investing in both markets.

4.3.5 **Hypotheses Five**

H_o5: The performance of dividend yield ratios for listed firms in the developed stock markets and those in the emerging stock markets do not differ significantly.

H_A5: The performance of dividend yield ratios for listed firms in the developed stock markets and those in the emerging stock markets differ significantly.

Decision Rule:

(i) Reject null hypothesis and accept alternative hypothesis if calculated F- value is greater than critical F- value at 0.05 level of significance

(ii) Accept null hypothesis and reject alternative hypothesis if calculated F- value is less than critical F- value at 0.05 level of significance

Decision

The null hypothesis which says that the performance of dividend yields for listed firms in the developed stock markets and those in the emerging stock markets do not differ significantly is rejected thus, the alternative holds.

Table 4.22 below documents the ANOVA summary analysis based on trends in dividend yields in the two markets. The calculated F-statistics which stood at 4.38 is greater than the table value of 3.11.

Table 4.22: **ANOVA Analysis Using Comparative Performance Trends in Dividend Yields in the Developed Stock Markets and Emerging Stock Markets**

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Developed	17	36.84	2.167058824	0.387922059
Emerging	17	47.99	2.822941176	1.281272059

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.656544118	1	3.656544118	4.381208967	0.044350589	4.149097409
Within Groups	26.70710588	32	0.834597059			
Total	30.36365	33				

Source: *Author's Computation from Table 4.13; Using E-View Version 7*

The result here is that the size of dividends earned by investors in listed firms in the developed stock markets is statistically similar to those of the emerging stock markets

4.4 **Discussion of Major Findings**

In sections 4.1 and 4.2 relevant data obtained for the study were presented, analyzed and findings reported. In this section, guided by the objectives of the study, attempts are made to discuss in detail, the major findings and relate them to relevant literature that was previously reviewed.

4.4.1 Relationship between the Financial Variables and Share Prices in the Developed Stock Markets

The level to which published financial data relate with share prices determine their relevance and this is also one way used to test the efficiency of a stock market. This relevance has to do with the ability of the financial data to summarize and capture information that affects the market value of firms listed in that stock market. This according to Abiodun (2012) means that there is a statistical association between accounting information and share prices or returns; and the accounting based measure explains the market prices in a good way, under efficient market assumptions that pricing reflects available information.

Findings of this study show that all the independent (financial) variables are rightly signed with share price in the developed stock markets. This implies that all the financial variables; price-earnings ratio, price-book value ratio and dividend yields are relevant to share prices in the developed stock markets.

Findings further show that while price earnings ratios and price-book value ratios had positive and significant relationships; dividend yields had negative relationship with share price. These findings are in agreement with Abayadeera (2010) which provided evidence (in Australia, a developed stock market) for the relevance of traditional

accounting figures such as; earnings, book values, etc. Tse (2002) also showed that both dividend yields and past return have predictive power for price-earnings ratio and they can be used for tools informing a market timing and asset allocation strategy in a stock market.

4.4.2 **Relationship between the Financial Variables and Share Prices in the Emerging Stock Markets**

Emerging stock markets are characterized by a large variation between the highest and the lowest average share prices as well as the highest and lowest price-earnings ratios over the period of the analysis. This wide up and down swings is a feature that is peculiar with markets that are not fully developed.

The combined regression effect for the emerging stock markets shows a high degree of serial autocorrelation in the model indicating that only 7% of the total variation in share prices is explained by the independent (financial) variables. The remaining 93% is explained by other factors not captured in the model but covered by error term. This establishes the existence of a very weak and negative relationship between share prices and the independent variables (price-earnings ratio, price-book value ratio and dividend yield) in the emerging stock markets.

These findings support some related previous studies of emerging stock markets. Srinivasan (2012) examined the fundamental determinants of share prices in India and found that dividend has a negative and significant impact on share prices of the various sectors studied. Martin (2008) found that the Nigerian stock market is largely unpredictable based on the fundamental values beyond known financial performance

which in themselves alone do not alter the market significantly. Also studying the determinants of stock prices in India, Sen and Ray (2003) found that earnings have very weak impact on share prices. Irfan and Nishat (2002) studied price changes in Pakistan and their regression model found that the prime key variables (dividend yields, payout ratios, firm size; etc) had no significant effect on share price deviation. Shamki and Rahman (2012) examined value relevance of earnings and book value of equity relative to price and return models for Jordanian industrial companies. Their results showed that earnings and book values are irrelevant in their combinations although individually relevant.

Hellstrom (2005) comparatively analyzed the value relevance of accounting information using Czech and Sweden as case study and found difference in value relevance. This is similar to the findings of this study which manifested some observed country effect both within and between the developed stock markets and emerging stock markets with respect to relevance of the financial variables.

4.4.3 **Comparing Performance of Price-Earnings Ratio of Listed Firms in Developed Stock Markets and Emerging Stock Markets**

In an efficient market, the relationship between the prices of a company's share should reflect its actual, expected earnings or value creation. For this, Gottwald (2012) observed that many investors are prepared to pay a premium for high growth expectation in the form of high P/E ratios. The size of the price-earnings ratio is a reflection of investors' confidence about a firm's future performance and therefore influences investment decisions. According to Anderson and Brook (2006) typically, sectors having companies

with matured, stable and moderate potentials have low price-earnings ratios compared to sectors having relatively young and fast growing companies. This reasoning can also be related to the price-earnings ratios of firms listed in a stock market.

Findings of the study show that performance of listed firms' price-earnings ratios for the developed stock markets and emerging stock markets do not differ significantly. Observation of the developed stock markets and emerging stock markets stock numbers shows that the average size of price-earnings ratio for the developed stock markets of 27.49times is higher than the 17.50times for the emerging stock markets. However, when considered on trend basis (year by year); this difference is not statistically significant. The implication is that most of the listed firms in the developed stock markets have more growth potentials and hence investors pay higher prices relative to their earnings. The high price-earnings ratios for firms in the developed stock markets is probably because the markets are more matured and stable and for their confidence investors willing pay higher prices relative the period's earnings per share.

However, due to the similarity in earnings relative to share prices in both markets, the actual choice for earnings investors in world stock markets depend on factors other than size of price-earnings ratios.

4.4.4 **Comparing Performance of Price-Book Value Ratios of Listed Firms in Developed Stock Markets and Emerging Stock Markets.**

The price-book value ratio according to the Gottwald (2012) compares a company's market capitalization with its shareholders equity. The ratio primarily relates the market price of a share to its net-book value if the firm were to be liquidated immediately.

Higher net-book values yield lower price-book value ratios and vice versa. Accordingly, investors prefer lower price-book value ratios to higher price-book value ratios.

Findings of the study show the existence of a significant difference between the performance of price-book value ratios for the developed stock markets and emerging stock markets. Specifically; the analysis shows that the developed stock markets have on the average lower price-book value ratios than the emerging stock markets. The implication of this is that net-book value investors are better rewarded in the developed stock markets than in the emerging stock markets relative to the average price for each outstanding share.

4.4.5 Comparing Performance of Dividend Yields of Listed Firms in the Developed Stock Markets and Emerging Stock Markets

All dividend policy theories argue the relevance of dividends to equity valuation. The pro-dividend theorists see cash dividends as being more relevant than expected future earnings or growth. Chiang, Frankfurter, Kosedag and Wood (2006) observe that the more traditional group of investors attribute far more importance to dividends than the growth-oriented group with the latter merely seeing dividends as something needed to pacify the shareholder.

Dividend yields measure the relationship between dividend per share and market price per share. Given no change in price; higher cash dividends result in higher dividend yields and lower cash dividends similarly result in lower dividend yields. And accordingly equity investors prefer higher dividend yields to lower dividend yields.

Comparing the developed stock markets and emerging stock markets, this study finds significant difference in the performance of dividend yields for both markets. In absolute numbers the emerging stock markets have higher mean sizes of dividend yields; implying higher dividend per share for the developed markets.

The implication of this is that dividend per share due to equity investors relative to market price per share did not differ substantially between the developed stock markets and the emerging stock markets. For the more traditional dividend investors to whom dividends matter so much, the emerging stock market firms were better.

4.4.6 **Relating Findings to Liberalization and Integration of World Markets Effect**

The policy implications of this study are viewed in relation to the relevance and performance of the financial variables (their joint and separate relationships with share prices and differences in their mean sizes) that can be explained by the liberalization of emerging stock markets and globalization of world stock markets which were most prominent during the period of 1995-2011; covered by the study.

An important element of these liberalization and globalization of world stock markets that advanced mostly during this period according to Classens and Tzioumis (2006) has been the increase in stock exchange activities that took place abroad, most notably for emerging markets but also for the developed markets. Given this increase in foreign market activities, the search for markets offering investors the best earnings, net-book values and dividends at the lowest risk levels also increased.

This study in addition to other stated objectives also sought to find out if this increase in foreign stock market activities and investments that were triggered by liberalization of

emerging stock markets (mostly between, 1995-2011) have been significant, particularly to the emerging countries. This is because a major objective of deregulation of stock markets is to improve the relevance and reduction in disparity in sizes of the financial variables between the developed stock markets and emerging stock markets.

Findings of the study show a significant relationship between the financial variables (price-earnings ratio, price-book value ratio and dividend yields) and share prices in the developed stock markets.

The study also finds no significant relationship between the financial variables and share price in the emerging stock markets. A major implication of this finding is that share pricing efficiency is still low for the emerging stock markets. This may be because investors still associate emerging markets with higher risks than the developed stock markets and do not consider their high dividend yields as adequate compensation for the level of associated risks. As observed in Nazir, Nawaz. Anwar and Amed (2010) risk-averse investors seeking higher returns in the volatile emerging markets have not been well compensated for incurring higher risks associated with these markets.

Other specific findings show higher average price-earnings ratios and price-book value ratios and lower dividend yields for the developed stock markets than the emerging stock markets. And in the same vein lower average price-earnings ratios and price-book value ratios and higher dividend yields for the emerging stock markets than for the developed stock markets.

The study also finds no significant difference in the performance of price-earnings ratios between the developed stock markets and emerging stock markets. Though the difference

is not significant, the developed stock markets have higher average price-earnings ratio (by implication lower average earnings per share) than the emerging stock markets.

With respect to net-book values the study finds that the performance of price-book value ratios differ significantly between the developed stock markets and emerging stock markets, with average price-book value ratios being lower (by implication higher net-book value per share relative to market price per share) in the developed stock markets than the emerging stock markets.

The price-earnings ratios and price-book value ratios relations used to describe various types of companies by Halsey (2000) can also be applied to the description of the developed stock markets and emerging stock markets:

i. Developed stock markets: High price-earnings ratio and lower price-book value ratio - improving stock markets.
ii. Emerging stock markets: High price-book value ratio and low price-earnings ratio-declining stock markets.

These results show that the liberalization of emerging stock markets and integration of world stock markets that were most prominent during the period of 1995-2011; were not equally relevant to the developed stock markets and emerging stock markets. The fundamental variables were relevant to share prices in the developed stock markets but irrelevant in the emerging stock markets.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

In this final chapter of the study, the research findings are summarized, conclusion drawn and possible and implementable policy recommendations made..

5.1 Summary of Findings

From the data obtained and analyzed; the following findings were gathered:

1. The financial variables were relevant to share prices in the developed stock markets.
2. Price-earnings ratios had positive relationship with share prices in the developed stock markets.
3. Price-book value ratios had positive relationship with share prices in the developed stock markets.
4. Dividend yields had negative relationship with share prices in the developed stock markets.
5. The overall effect of the financial variables was not significant, hence irrelevant to share price determination in the emerging stock markets.
6. Price-earnings ratios had weak and negative relationship with share prices in emerging stock markets.
7. Price-book value ratios had weak and negative relationship with share prices in the emerging stock markets.

8. Dividend yields had positive but weak relationship with share prices in the emerging stock markets.
9. The performance of price-earnings ratios between the developed stock markets and emerging stock markets was not statistically different.
10. The performance of price-book value ratios between the developed stock markets and emerging stock markets was significantly different.
11. The mean size of price price-book value ratio was higher for the emerging stock markets, indicating higher net-book value per share than for the developed stock markets.
12. The performance of dividend yields for both the developed stock markets and emerging stock market was significantly different.
13. The mean size of dividend yields was higher for the emerging stock markets, also indicating higher average dividend per share than for the developed stock markets.

5.2 **Conclusion**

Relevance of financial or any other information item to share pricing is measured by the ability of that particular variable to explain changes in the market price of a firm's shares. In this regard the financial item (or other items) has a reliable association with a metric which in turn captures the information that is used by market participants in determining share prices or returns.

In capital market research different items have been tested to determine their relevance to share valuation in different sectors and markets, and varying results obtained. While some of these studies have employed historical accounting data others have used country

economic variables. None of these previous studies known to the researcher has measured and compared the relevance of accounting/stock market based variables to share pricing and the sizes of these variables in both developed stock markets and emerging stock markets. No study known to the researcher has also measured the relevance or performance of financial data due to the combined effect of liberalization of emerging markets and their integration into world stock markets

The fundamental problems resolved by the study included:

i. Determining the relevance of the financial variables to share pricing in the developed stock markets and emerging stock markets.

ii. Determining if these variables are equally relevant to both the developed stock markets and emerging stock markets.

iii. Determining and comparing the performance of each of these financial variables for listed firms in the developed stock markets and emerging stock markets.

To meet its objectives the study worked with a theoretical framework that combines two distinct theoretical components: the Ohlson (1995) model and the measurement view of value relevance.

Results of the analysis show that the financial variables were jointly relevant to share pricing in the developed stock markets. This is in agreement with the findings of Abayadeera (2010) which provided evidence that in Australia, a developed stock market, the traditional accounting figures were value relevant.

Analysis of the developed stock markets also showed that price-earnings ratio and price-book value ratio were positively and significantly related to share prices while dividend yields had a negative relationship with share prices. This is in support of the observations of Tse (2002) that both dividend yields and past returns have predictive power for price-earnings ratios and hence they can be used as tools informing a market timing and asset allocation strategy in a stock market.

Findings also indicate that collectively; the financial variables have very weak and no significant relationship with share prices in the emerging stock markets and hence not relevant to share prices. This is evidenced by a high degree of serial autocorrelation in the regression model indicating that only 7% of the total variation of share prices in the emerging markets is explained by the financial variables.

Specific results showed that price-earnings ratios and price-book value ratios both have weak and negative relationship while divided yields also have weak but positive relationship with share prices in the emerging stock markets. These findings agree with Srinivasan (2012) which studied the fundamental determinants of share prices in India, an emerging market and found that dividends have a negative impact on the various sectors studied. Martin (2008) found that the Nigerian stock market is highly unpredictable based on the fundamental values beyond known financial performance which in themselves alone do not alter the market significantly.

Concerning performance of the financial variables of listed firms in both markets, findings show no significant difference in the mean size of their price-earnings ratios.

The mean sizes of price-book value ratios and dividend yields were found to be statistically different between the developed stock markets and emerging stock markets.

Comparatively, the average size of price-earnings ratio was statistically similar for both the developed stock markets and emerging stock markets. The mean size of price-book value ratio was higher (bad for investors) in the emerging stock markets and lower (good for investors) in the developed stock markets. The mean size of dividend yields was higher (better for investors) in the emerging stock markets and lower (bad for investors) in the developed stock markets.

In summary, the fundamental variables: price-earnings ratio, price-book value ratio and divided yields were collectively relevant to share pricing in the developed stock markets but not relevant in the emerging stock markets.

The performance trend of price-earnings ratios for listed firms in both categories of stock markets was similar. While the mean size of price-book value ratios was to the relative advantage of investors in the developed stock markets, the mean size of dividend yields was better for investors in the emerging stock markets.

The study therefore concludes that; the liberalization of emerging stock markets and integration of world stock markets that were most prominent during the period of 1995-2011 did not result in equal relevance and performance of the financial variables (price-earnings ratio, price-book value ratio and dividend yield) for both the developed stock markets and emerging stock markets.

5.3 **Recommendations**

The major objective of this study is to evaluate the relevance and performance of the financial variables of listed firms in world stock markets, for the period 1995 – 2011.

Based on the findings and conclusion drawn, the following policy recommendations that are expected to improve the relevance of the financial variables (particularly in the emerging markets) and reduce the perceived disparity in their performance (between both categories of markets) and in effect maximize yields for equity investors in developed stock markets and emerging stock markets if well implemented are made:

1. International investors, stock brokers, dealers and investment analysts should not rely on the financial variables alone in their pricing decisions in the emerging stock markets. For those desiring to invest in emerging markets, the negative relations between price-earnings ratios and price-book value ratios and the positive relation of dividend yields with share prices should be noted.
2. For earnings investors, their decision between the developed and emerging stock markets should be taken along with other industry or country specific factors. This is due to the similarity in price-earnings ratios between both categories of markets.
3. For net-book value investors, the developed stock markets are better and therefore recommended as they offer lower mean price-book value ratios than the emerging stock markets and in effect higher average net-book value per share.
4. For dividend investors; the emerging stock markets are recommended as they have higher mean dividend yields than the developed stock markets and in effect, higher average dividends per share.

5. Macroeconomic policy makers in the respective emerging countries should take appropriate steps to further liberalize and integrate their stock markets so as to improve their efficiency in share pricing, reduce perceived risks and make the financial variables more relevant.
6. Finance managers particularly those in emerging countries should realign their income appropriation policies towards equity investors so as to improve the relevance of the financial variables to share pricing decisions of listed firms.
7. Policy makers in emerging countries should further improve corporate reporting and governance among listed companies so that the confidence of investors in market fundamentals will increase.

5.4 Contributions to Knowledge

An ideal question that may be raised is; how has this research work on relevance and performance of the financial variables of listed firms in world stock markets provided guidance to stock market participants and contributed to academic theory building?

The question is addressed as follows:

(i) Previous related studies have only tested the relevance of financial information in specific industries, stock markets or have merely compared a number of markets at similar levels of development. By comparing listed firms in the developed and emerging stock markets categories, this study has widened the scope of relevance and performance of financial information studies.

(ii) Previous comparative relevance studies using the Ohlson (1995) model have employed historical accounting and currency based variables in their analysis.

This study modified the Ohlson (1995) model by employing the financial variables: price-earnings ratio, price-book value ratio and dividend yields which are universal and more appropriate for comparative stock market relevance analysis.

5.5 Suggestions for Further Research

The findings of this study has provided empirical evidence for the relevance and performance of financial variables to pricing of shares in world stock markets by comparatively evaluating listed firms in developed stock markets and emerging stock markets for the period, 1995-2011.

However, to have additional empirical evidence on comparative relevance and performance of financial variables of listed firms under different assumptions, more still needs to be done in future research efforts.

Firstly, this study used the FTSE Global Equity Classification for 72 countries. Then reclassified the stock markets of the developed and advance emerging countries as “Developed stock markets” and secondary emerging and frontier countries as “emerging markets”. A further study is therefore suggested to cover the developed stock markets, emerging stock markets and frontier stock markets in scope.

Secondly, this study compared value relevance of financial variables between the developed stock markets and emerging stock markets. An interesting area requiring further research is to test also for comparative relevance for listed firms within the developed stock markets and the emerging stock markets respectively.

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