EFFECT OF INTELLECTUAL CAPITAL ON PERFORMANCE OF FIRMS LISTED ON NIGERIA STOCK EXCHANGE.

EWEREOKE, VITALIS NNAEMEKA

2012407008F

DEPARTMENT OF ACCOUNTANCY

FACULTY OF MANAGEMENT SCIENCES

NNAMDI AZIKIWE UNIVERSITY, AWKA

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BEING A DISSERTATION PRESENTED TO THE SCHOOL OF POST GRADUATE STUDIES, NNAMDI AZIKIWE UNIVERSITY, AWKA. IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY (PhD) IN ACCOUNTANCY DEPARTMENT OF ACCOUNTANCY

FACULTY OF MANAGEMENT SCIENCES

NNAMDI AZIKIWE UNIVERSITY, AWKA, ANAMBRA STATE,

NIGERIA.

DECEMBER, 2017.

DECLARATION

I hereby declare that this dissertation has been written by me Ewereoke, Vitalis Nnaemeka with Registration Number 2012407008F and it is a report of my research work. To the best of my knowledge it has not been submitted in part or in full for the award of any diploma or degree either of this university or any other one. All quotations are indicated and sources of information specifically acknowledged by means of reference

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Ewereoke, Vitalis Nnaemeka **Date**
2012407008F

APPROVAL PAGE

This dissertation titled Effect of Intellectual Capital on the Performance of Firms Listed on Nigeria Stock Exchange Market meets the regulations governing the award of PhD degree of the school of post graduate studies of Nnamdi Azikiwe University, Awka for its contribution to knowledge and literary presentation.

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Prof Osisioma B.C **Supervisor**	**Date**
----------	**----------**
Prof Emma Okoye **Supervisor**	**Date**
----------	**----------**
Dr. Egbunike P.A. **Head of Department**	**Date**
----------	**----------**
Prof (Rev Canon) A.D. Nkamnebe **Dean Faculty of Management Sciences**	**Date**
----------	**----------**
Prof Eric A. Okoye **External Examiner**	**Date**
----------	**----------**
Prof Ike Odimegwu **Deem, School of Post Graduate Studies**	**Date**

DEDICATION

This work is dedicated to God Almighty for making one of my dreams come true and to the loving memories of my beloved father who lay this foundation years back.

ACKNOWLEDGMENT

I wish to express my heartfelt gratitude to the Almighty God who has seen me through these years of studies. To him alone be all the glory, honour and adoration.

I sometimes have to consciously remind myself that it is not a dream that this journey has come to an end. This could not have been possible without the support of a committed team. First and foremost, my inestimable gratitude goes to my principal supervisor Prof. B.C. Osisioma for his simple approach towards this study and to post graduate studies in the department of Accountancy. I owe my greatest thanks to Prof. Emma Okoye my second principal supervisor and more importantly, my mentor and my friend. Throughout this study years, Prof. Emma has always been extremely supportive, understanding and encouraging in both supervising my dissertation, in spite of his numerous engagements and shaping my life philosophy. His inspiring teaching style has always been immensely important in leading me to pursue this study. What is more, his great personality and hospitality have shortened the traditional – teacher – student's distance, making him my most respectable mentor, friend and model.

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I want to acknowledge my family members, my beloved wife Mrs. Cynthia Ewereoke for her prayers and support, my mother Mrs. Emila Ewereoke for her concern and my uncle Mr. Ambrose Ewereoke for his prayers and blessings and to my wonderful children (Paschal, Stepheny, Angel, Divine and Miracle for their understanding when I was not there for them because of my study.

May I register my sincere appreciation to doctoral colleague, Mr. James Ike, Amefule Leo and Barrister Ebubechukwu Ogochukwu for exchange of knowledge, phone calls and for keeping me alert and reminding me of the need to be up and doing, thanks a lot.

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Finally to staff of ChiFranc Business Centre who typed the work and Dr. Calistus who assisted me in one way or the other. I say God bless you and reward you abundantly Amen.

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ABSTRACT

This study assesses the effect of intellectual capital on performance of firms listed on Nigeria Stock Exchange. three specific objectives were formulated to determine the extent to which intellectual capital affects corporate performance. From the specific objectives, hypotheses were also formulated and to test the hypotheses a sample of forty (40) companies were selected from 213 companies listed on Nigeria Stock Exchange using multi-phases sampling method. The study applied Ex-post Facto Research Design and made use of secondary data sourced from annual reports and accounts of sampled firms and Nigeria Stock Exchange Fact Book. Pulic 1998 Value Added Intellectual Capital Co-efficient (VAIC) model which enable the determination of specific effects of the components of intellectual capital (Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) was adopted and transformed into ordinary least square approach and a multiple regression performed to test the hypotheses at 5% level of significance using E-view statistical software (version 8.0). The analysis of the test shows that Intellectual Capital affects significantly , Company Process measured by ADM/OPA and market to Book value ratio of companies listed on Nigeria Stock Exchange whereas there was no significant effect of Intellectual Capital on

Asset Turnover (ATO) . The study therefore recommends among other factors that corporate management should endeavour to provide adequate and conducive working environment, good welfare package reviewing the performance and engaging on regular training and development programmes which will automatically increase the efficiency and productivity of the workforce. Intellectual Capital should be effectively managed to enhance competitive capabilities of companies by determining the mixture of human capital and structural capital assets in order to increase corporate performance. Shareholders should place higher values on companies with greater intellectual capital since this is the main value driver that propels companies to achieve sustainable growth while Nigeria Stock Exchange should demand complementary report on intellectual capital to enable investors make far reaching investment decisions.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

During the last two decades, the business environment has progressively moved into a knowledge based, fast changing, technology intensive companies in which investments in human resources, information technology, research and development have become essential in order to strengthen the firms competitive position and ensure their future viability (Canibano, 2000) .

In the twenty-first century firms are competing in a complex and challenging environment and factors like uncertainties and dynamism associated with the development requires knowledge for success (Hih, Keals & Demaris, 1998). Thus, the foundation of organizational competiveness has shifted from an emphasis on physical and tangible resources to knowledge, and managing knowledge- based resources has become the key for sustaining competitive advantage and superior performance (Grant, 1996; Sharkie, 2003).

The new economic system which is popularly known as the knowledge economy or intellectual asset have been recognized as the prominent resource needed for organizational survival. Service organizations like software, finance, pharmaceutical, banking, hotel and universities depend to a considerable extent on their intellectual for revenue drive, while production or manufacturing companies use intellectual capital with its physical assets to sharpen their competitive edge (Firer & William, 2003).

Intellectual capital is the knowledge that can be converted into values and the aggregation of all knowledge and competences of employees that help an organization to achieve competitive advantages. Intellectual capital represents the stock of knowledge at a particular time which has been accumulated through knowledge flow activities (Bontis, 2004). The Widespread acceptance of intellectual capital as a source of competitive advantage led to the development of x

appropriate methods of its measurement, since traditional financial statement are not able to capture all of its aspects (Campisi & Costa, 2008).

Despite the shift towards human capital intensive economy, traditional accounting has continued to focus more on the physical assets in their financial statements to the exclusion of the more important assets, the intellectual capital (Amstrong, 2006).

As consequence of the above, management is denied of relevant and timely data which enables her to take vital decision regarding her human resources, especially the cost implication of certain decision. Bornemamn (1999) found that enterprises which have managed their intellectual capital better, had achieved stronger competitive advantage than the general enterprises and that companies which had strengthen their own intellectual capital management compared to the others had performed better. Brenman and Connel (2000) posit that intellectual capital management played an important role on the long term business performance of enterprises. To increase the financial performance organizations normally focus on their physical assets without adequate attention on their intellectual capital but .their intellectual capital inefficiency results in a decrease in their financial performance consequently, the desired levels of financial performance are never achieved.

Both tangible and intangible assets are perceived as potential strategic assets (Riahi & Belkaoui, 2003). This qualification of intellectual capital as a strategic asset rests on a potential link between intellectual capital on one hand and the firm performance on the other hand (Seethanraju, 2000). Furthermore many scholars now argue that in comparison with the tangible resources the intellectual capital or intangible resources are more likely to be the key resources for many enterprises which help them in acquiring the required competitive advantages or to ensure market dominance (Brennan & Connell, 2000; Mann, 2004). According to Patton (2007)

the productivity of a firm has more on its intellectual capital and system capabilities than on its physical assets.

1.2 Statement of Problem

Various research findings have illustrated that intangible asset like knowledge, information, and information technology are prime resources in the knowledge economy. Organization for Economic Cooperation and Development (OECD) (2006) posits that many companies invest in employee training, research and development, customer relations, computer and administrative system. These investments are growing and they are competing with physical and financial investments. Stewart (1997) and Zegha l (2000) describe this change in investment structure due to the rise of knowledge based economy.

Intellectual capital has also been recognized as one of the key determinants of growth today. This applies especially to advanced economics such as Switzerland, United States of America, China and Japan as companies with a large share of unskilled labour have moved to other countries of the world as a consequence of their comparative intellectual capital advantage (Polasek, 2011)..

In recent years, companies especially those in the knowledge intensive industry, have experienced a dynamic and competitive environment. Competition at a cross-border scale compels domestic companies to adjust their competitive position by achieving sustainable financial performance. In the knowledge – intensive industries, intellectual capital generally represents the critical resource in the value creation process. Traditional measures of company performance, which are based on conventional accounting principle, are unsuitable to the new economy (Firer & William 2003). Such measures are the main basis for decision making. The conventional performance measurement techniques may lead managers, investors and other

stockholders to make inappropriate decision when companies have large portion of their investment in intangible assets.

Mathotia (2000) assert that the issue of valuing and measuring intellectual capital is critical as it enables us to understand where value lies in the firm and for developing measurements for assessing success and growth of the firm. The fact that investors and financial markets attach value to the skills and expertise of Chief Executive Officers (CEO) and other top management can be understood by observing stock prices reaction to changes in management, an element of Intellectual capital not recognized in financial statements as assets. (Lev & Zaowin, 1999; Lev, 2001; Bontis, 2001). This fact therefore question, the reliability and adequacy of traditional accounting methods used by firms in the present information age since it has failed to capture the value of information and knowledge in employee.

There have been some conflicting results on the relevance and relationship between intellectual capital and organizational performance. While some studies on the relationship of intellectual capital and financial performance in some developed nations agree that intellectual capital relates positively and significantly with organizational financial performance and as such accord organizations competitive edge over others (Bornemamn, 1999; Brennan & Conell, 2000; Karnath, 2007 & Ekwe, 2012). Others posit that there are no relationship between intellectual capital and organization performance and physical assets still remain the key determinants of organizational financial performance (Wright & Mcmahan 1995; Gottfredson, 1997 & Jensen, 1998).

The above studies on intellectual capital are carried out in advanced economies. Given the significant contributions of economically emerging nations to the overall development of the global economy. It becomes imperative to carry out an empirical study on developing or

emerging economy like Nigeria where despite the shift towards intellectual capital intensive economy, Nigeria firms have continued to use traditional accounting which focuses more on the physical assets on the financial statements and where few spotted studies like Ekwe (2012) , Anuonye (2015) and Onyekwelu (2013) only dealt on financial performance of service oriented firms of (banking, insurance and pharmaceutical sectors respectively of) the Nigerian economy to ascertain the effect of intellectual capital on performance of firms. Hence, the present study is a modest attempt to examine the effect of intellectual capital on corporate performance of firms in a developing economy using Nigeria as a study base.

1.3 Objective of the Study

The broad objective of this study is to determine the effect of intellectual capital on performance of firms, listed on Nigeria Stock Exchange. The Specific Objectives are:

1) To determine the extent to which Intellectual Capital affects Asset Turnover (ATO) of companies listed on Nigeria Stock Exchange.

(4) To determine the extent to which Intellectual Capital affects Company Process Administrative Expenses /Operating Assets (ADM/OPA) of companies listed on Nigeria Stock Exchange.

(5) To determine the extent to which Intellectual Capital affects the market to book value ratio of companies listed on Nigeria Stock Exchange.

1.4 Research Questions

From the above statement of problem as well as the objective of this study the following research questions are derived.

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(1) To what extent does intellectual capital affects Asset Turnover (ATO) of companies listed on Nigeria Stock Exchange.

(2) To what extent does intellectual capital affects Company Process (ADM/OPA) of companies listed on Nigerian Stock Exchange.

(3) To what extent does intellectual capital affects Market to Book Value Ratio of companies listed on Nigeria Stock Exchange.

1.5 Research Hypotheses

The following research hypotheses will be tested in order to validate the data analysis.

Ho_3: Intellectual capital does not significantly affect Asset Turnover of companies listed on Nigeria Stock Exchange.

Ho_4: Intellectual capital does not significantly affect Company Process of companies listed on Nigeria Stock Exchange.

Ho_6: Intellectual capital does not significantly affect market to book value ratios of firms listed on Nigeria Stock Exchange.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter is divided into three broad areas; the conceptual review which highlights some key elements in the study, the theoretical frame work which deals with some theories on intellectual capital and empirical review which deals with past studies on intellectual capital.

2.1 Conceptual Review

2.1.1 Intellectual Capital Concept

The phrase intellectual capital was first proposed by Galbraith in 1969 and popularized by Stewart in fortune magazine where he tried to introduce it as the amount of employees' knowledge and ability which could strengthen the company's competitiveness. Initially, the difference between book value and market value of companies was considered as intellectual capital. Researchers from different background have tried to define specific concepts of intellectual capital in their own words. (Karmath, 2007).

The term intellectual capital includes inventions, ideas, general knowledge, design approaches, computer programmes and publication. Intellectual capital includes all non-tangible or non-physical assets and resources of an organization, as well as its practices, patents and the implicit knowledge of its members and their network of partners and contracts (Shincon, 2005). Stewart (1997) defines it as "Packaged useful knowledge". Sullivan (2000) saw it as knowledge that can be converted into profit. Roos and Roos (1997) state that intellectual capital is sum of

knowledge of its members and practical translation of this knowledge into brands, trademarks and processes. Edvinson and Malone (1997) define it as the possession of knowledge, applied experiences, organizational technology, customer's relations and professional skills that provide a company with a competitive edge in the market.

Nahapiet and Ghoshal (1998) define intellectual capital as sum of knowledge and knowing capabilities that can be utilized to give a competitive advantage. Bontis (1998) saw intellectual capital as a collective knowledge embedded in people, organizational routines and network of relationships. Congruent with the above definitions, Youndt and Snell (2004) in their analysis of intellectual capital characteristics, revealed a consensus among scholars that intellectual capital is a multi-dimensional concept that resides at individual level, network and organizations.

Whilst a common definition has not been agreed on, Bontis (1998) and Marr, Schuman and Neely (2003) note that scholars converge on three categories of intellectual capital. Human capital, structural capital and customer capital.

2.1.2: Elements of Intellectual Capital

The most popular models for classifying intellectual capital is the Saint- Onge model developed in the early 1990 (Onge, 1996). It divided intellectual capital into three parts; Human capital, structural capital and customer capital. A slight variant of this model developed by Bontis (1994) re-states customer capital as relational capital to include relationship with suppliers. (Bontis, 1996; Edvinsson & Malone, 1997; Stewart, 1997).

Bontis (1998) assert that intellectual capital resides at individual (human capital) network (customer capital) and organization level (structural capital) Youndt et al (2004) contended that development of theoretically based sub categories of intellectual capital is necessary in advancing ability to operationalize and understand the concept.

According to Bontis (1996) Intellectual capital, involves structural capital and Human capital and he introduced relation capital as an example of customer capital. Similarly, Edvinsson and Malone (1997) and Stewart (1997) categorization consist of human capital, structural capital and customer capital.

2.1.2.1 Human Capital:

Human Capital is recognized as the largest and the most important intangible asset in an organization. Ultimately, it provides the goods or services which customers require or the solution to their problems. It includes the collective knowledge, competency, experience, skills and talents of people within an organization, it also includes an organization's creative capacity and its ability to be innovative. Although investment in human capital is growing, there is still no standard measure of its effectiveness in companies' balance sheet (Amitava, 2014).

It is very difficult to define human capital precisely because it depends on the nature of the job and firm as well as the situational factors that relate to the job (Appuhami, 2007). The root of human capital can be found in the smith's economics theories, where he defined contribution of human capital as important to the organization performance and to the economic growth of the country as well.

Several studies like (Appuhami, 2007; Aston, 2005; Bontis, 1999; Bozbura, 2004) consider human capital as the stock of skills and knowledge embodied in the ability to perform labour so as to produce economic values. Hence, it can be described as the skills and knowledge gained by a worker through education and experience (Sullivan, 2000). Aston (2005) corroborating the above definition posits that human capital consists of personal attributes such as knowledge, skills and expertise. Bozbuna (2004) has suggested that human capital can be recognized as an accretion of general knowledge acquired by employees during their work tenure, leadership

skills, the ability to take risks while performing the job and making decision and the ability to solve problems.

Components of Human Capital are:-

Knowledge

Competence

Skills and experiences of employees, innovation capacity, creativity, know-how and previous experience. Others are

Team work capacity

Employee flexibility

Motivation, Satisfaction and learning capacity.

2.1.2.2 Structural Capital

This is the supportive infrastructure for human capital. It is the capital which remains in the factory or office when the employees leave at the end of the day. It includes organizational ability, processes, data and patents, unlike human capital; it is company's property and can be traded, reproduced and shared by, and within the organization (Ekwe, 2012).

From the organizational perspective, structural capital includes all non- human resource of knowledge. Structural capital comprises of enabling structure that allow the organization to exploit intellectual (Muhamad, 2006). Aston (2005) describes structural capital as comprising of various types of internal value drivers of a firm including process, routing, data base, customer files, work literature or manuals. Organizational capital following Sveiby (1997), Guthrie and Petty (2000) consists of internal capital, which includes intellectual property, management

philosophy, corporate culture, management processes, information and networking system and financial relations. As structural capital results from outputs, products or systems created by the firm over time they are not included within an individual (Aston,2005).Hence unlike human capital, structural capital remains within an organization even after employees leave the organization (Muhammad & Aisa, 2007).

Elements of structural capital are as follows:-

- Organizational processes
- Databases
- Trademarks
- Leaseholds
- Franchise
- Patents

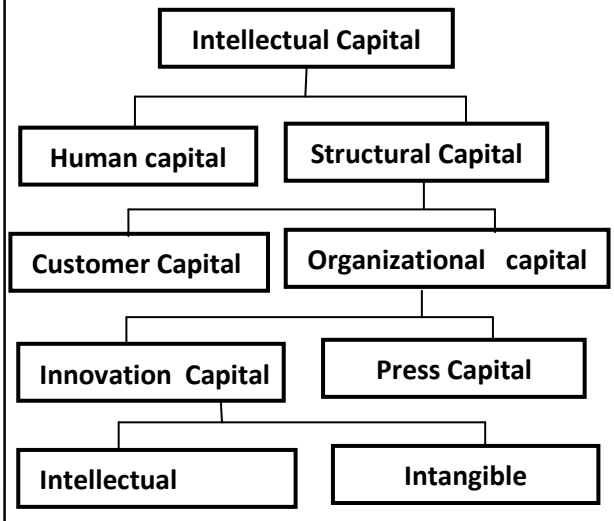
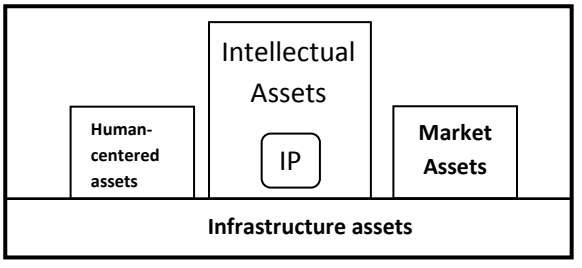
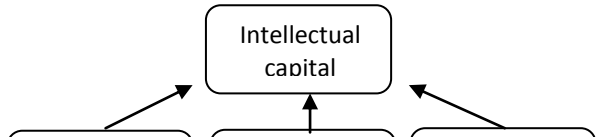
2.1.2.3. Relation Capital

Relation capital includes all resources that are limited to the external relationships of the firm with customers, suppliers or other stakeholders. Therefore, relational capital is the knowledge that is included in the relationship with any stakeholder that affects the firm's life. Goh (2005) assumes that relation capital is a combination of different kinds of relationship like market relationship, power relationship and cooperation. Chen et al (2006) assert that relational capital incorporate strong levels of understanding, trust, relationship and collaboration among strategic alliance partners, and therefore includes stocks of connections, interaction, linkages, closeness, goodwill and loyalty, between a firm and its upstream suppliers, downstream clients, strategic partners or external stakeholders.

Gathrie and Pelty (2000) describe it as external capital, which includes brands, customers and customers satisfaction, company names, distribution channels, business collaborations and licensing agreement. A loyal and sufficiently large customers' base is vital to achieving economic success.

It is also seen as company's relationship with its customers and with its network of suppliers, strategic partners and shareholders. The value of these assets is determined by the company's reputation or image (Meritum, 2002). These elements of intellectual capital summarily can be seen as the possession of knowledge and experience, professional knowledge and skill, good relationship and technological capability which when applied will give organization competitive advantage.

T

Skandia (1994)	
IC is the aggregate sum of intangible values **able 2.1:** Definition of Intellectual Capita (IC) which comprises of: i. Human capita – knowledge, skills and capability ii. Structural capital – everything that remains when the employees go home: Database, software, manuals, trademarks, organizations' structures etc. Customer capital, is the relationship built up with	
Brooking (1996)	
IC components are: i. Market assets ii. Human-centered assets iii. Intellectual property iv. Infrastructure asset	
Brooking (1996)	
IC includes three sub-domains: v. Human capital	

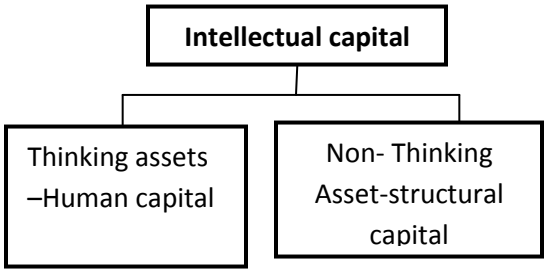
Continuation of Definition of Intellectual Capital (IC)

Roos et al (1997)

~~SOURCE: GUTHRIE AND PELTY (2000)~~

IC Include:

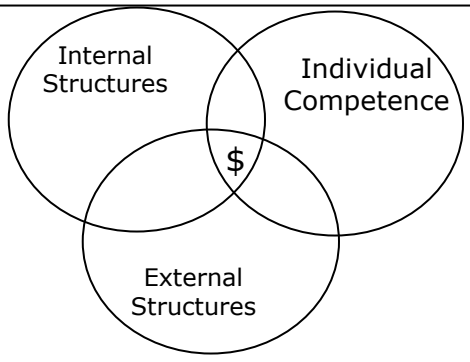
i. Thinking assets – Human capital
ii. Non-thing assets-structural capital



Sveiby (1997)

IC consists of three invincible assets:

(i) Employee competence
(ii) Internal structures
(iii) Eternal structure

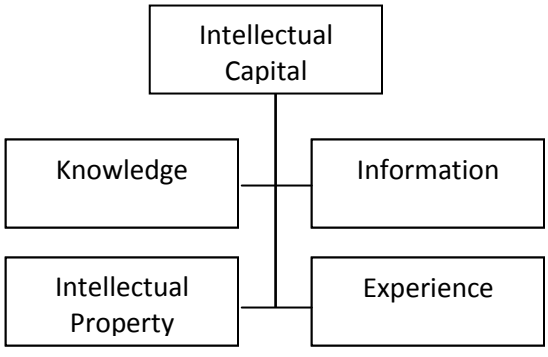


Stewart (1997)

IC as intellectual material which consists of

i. Knowledge
ii. Information
iii. Intellectual property
iv. Experience

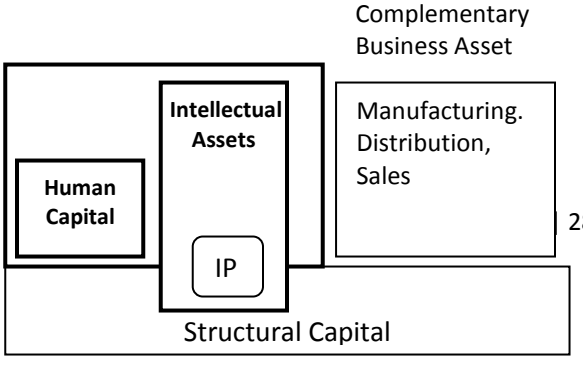
That can be put to create wealth



Sullivan (1998)

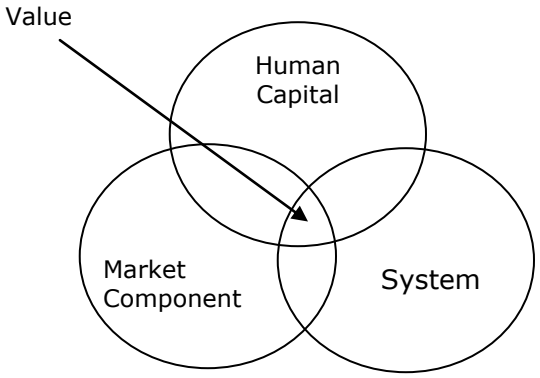
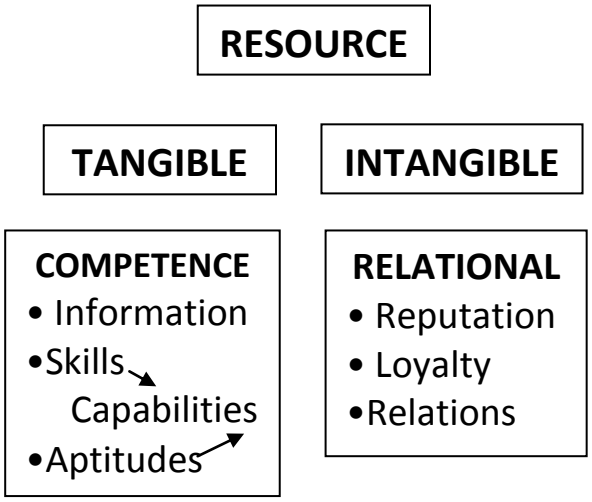
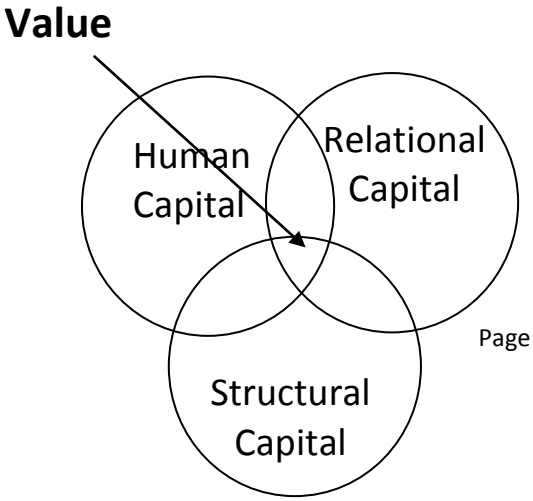
IC is knowledge that can be converted into profits. IC comprises three elements:

i. Human Capital
ii. Intellectual assets
iii. Structural capital

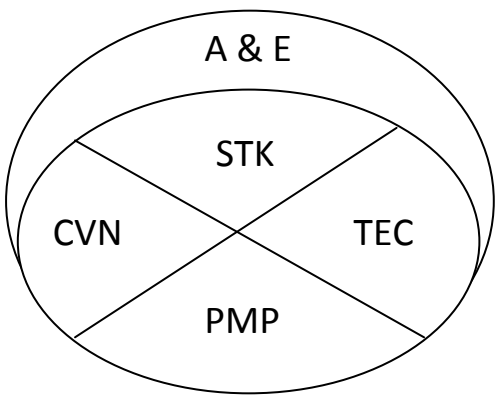
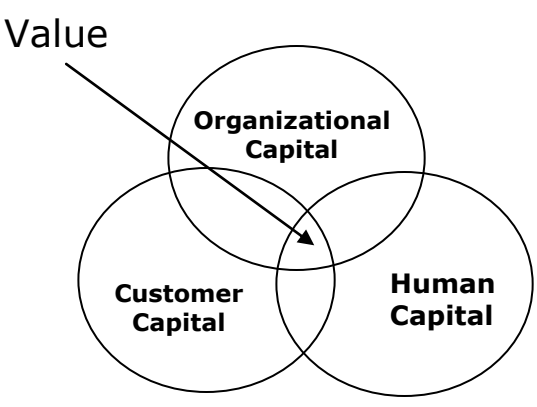
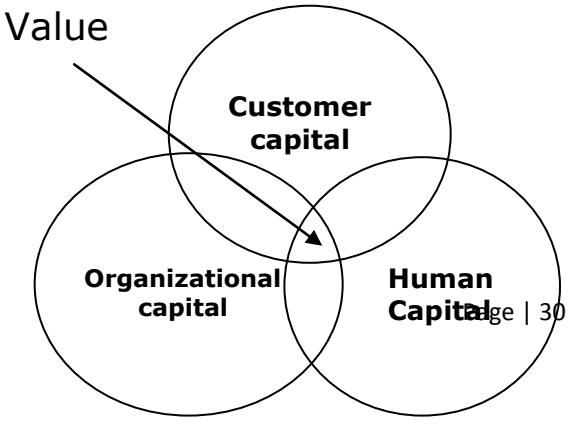


Continuation of Definition of Intellectual Capital (IC)

SOURCE: GUTHRIE AND PETTY (2000)

Edvinson & Malone (1997)	
IC Include of: i. Human capital – what people can do individually and collectively. ii. System component- knowledge of people, included patents, contacts & database. iii. Market component- relationship between organization & outsiders	
Haanes & Lowendal (1997)	
IC is intangible resources of: i. Competencies – Various abilities to perform and are reflected at individual & organization level. ii. Relationship – reflected in the reputation of the company- customer loyalty. Both of these exist in an individual & collective fashion.	
Saint –Onge (1997)	
Prefers knowledge capital to IC, Knowledge capital is the sum of: i. Human capital – capabilities of individual to provide solutions to customers ii. Relational capital – the depth, width, attachment & profitability of franchise iii. Structural capital – the capabilities of organization on to market requirements	

Continuation of Definition of Intellectual Capital (IC)

Andriessen & Tissen (2000) **SOURCE: GUTHRIE AND PELTY (2000)**	
Five categories of intangible assets: i. Skills and tacit knowledge (STK) ii. Collective value & norms (CVN) iii. Technology & explicit knowledge (TEC) iv. Primary management (PMP) v. Assets & Endowments (A&E)	
Guthrie & Petty (2000)	
IC consists of: i. Internal: Organization (Structural) capital ii. External: Customer (relational) capital iii. Employee competence: Human capital	
Mayor (2000)	
i. Customer (External) capital Customer's relationship, Loyalty, satisfaction & image. ii. Organizational (internal structure) capital – systems, patents, knowledge, culture. iii. Human capital – individual competence & experience, Judgment, leadership and motivation.	

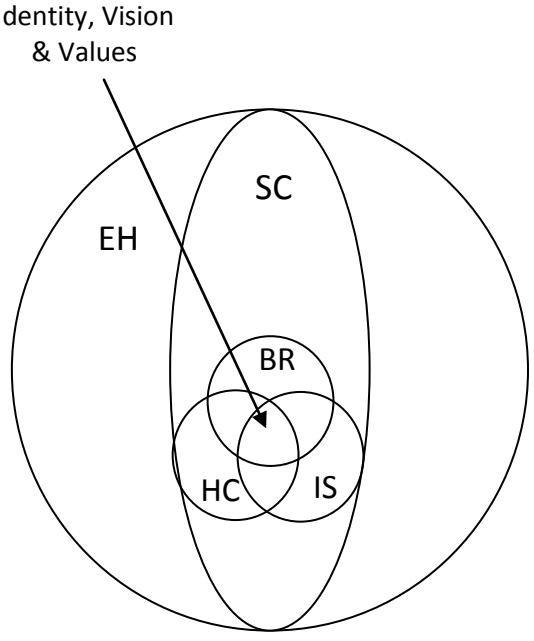
Continuation of Definition of Intellectual Capital (IC)

Allee (2000)

SOURCE: GUTHRIE AND PELTY (2000)

Expanded view of IC:

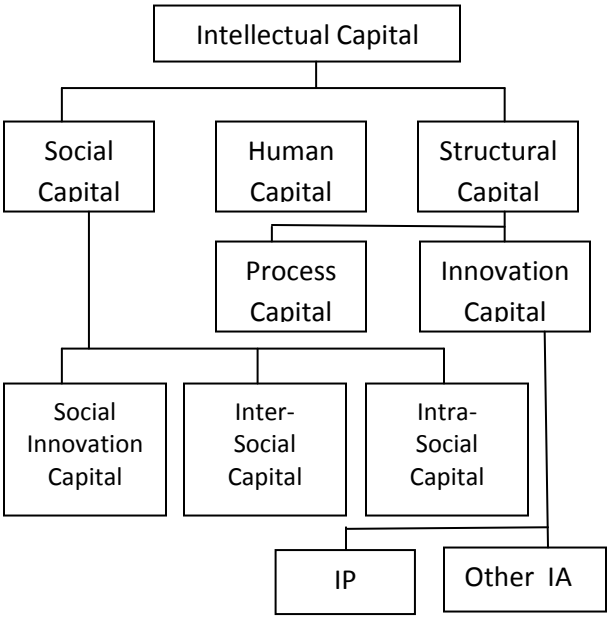
i. Business relationship- alliances & business relationship with customers, partners, suppliers, investors and government (BR)
ii. Internal structures – systems, work processes that leverage competitiveness including IT, communication & technologies (IS)
iii. Human competence (HC)
iv. Social citizenship (SC)
v. Environmental health (EH)
vi. Corporate identity (CI)



McElroy (2000)

Modifies Edvinson's IC model:

i. Human capital
ii. Structural capital
iii. Social innovation capital

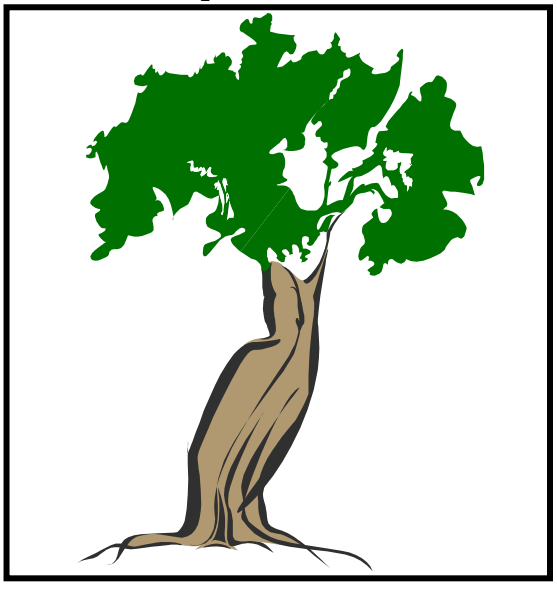


SOURCE: GUTHRIE AND PELTY (2000)

Edvinson and Malone (1998) use a metaphor as shown in figure 2.1 to explain the idea of intellectual capital. The tree as a metaphor of intellectual capital is partly a story of interlinked activities that happen all over the tree at any particular moment in time, and illustrates not only the relations between past and future, but also the intervention that is necessary in order to make fruition maximally efficient (Mouristen *et al,* 2001). As they further explain:

"If we compare the intellectual capital to a tree, the ripe fruit of the season's effort can be seen in the crown – i.e. in the annual report's income statement and balance sheet. The human core in the trunk is protected by the bark of customer relations and work routines. Research and planning, which the tree needs in order to survive future droughts and colds spells, is carried out in the root system. At a time marked by quick and capricious changes in business environment, it is at the roots where the most crucial activity may take place, for future fruition."

Figure 2.1: Metaphor of Intellectual Capital



Source: Edvinson and Malone (1998)

2.1.6 Intellectual Capital and Financial Performance

The impact of intellectual capital on financial performance has not been investigated thoroughly on an empirical level. On a theoretical level, distinguished authors argue that intellectual capital is the value driver of all companies (Stewart, 1997). That knowledge management is a core organizational issue (Nonaka & Takeuchi, 1995) and that organizational knowledge is the crux of every sustainable competitive advantage (Bontis, 1999). On the other hand empirical evidence are inconclusive and far from a solid scientific consensus. The study of Riahi-Belkaou (2003) finds a positive relationship between intellectual capital and financial performance, while Bontis et al (2000) conclude that regardless of industry, the development of structural capital has a positive impact on business performance, on the other hand Firer and Williams (2003) examined the relationship between Intellectual capital and traditional measures of firm performance (Return on Asset and return on equity) and fail to find out any relationship, while Chan et al (2005) using the same methodology conclude that intellectual capital has significant impact on profitability. The following variables that will be used to proxy financial performance in the present study are as follows

(i) **Asset Turnover (ATO):** it is the ratio of total turnover to total asset. It indicates the company's productivity as measured by the asset-turnover ratio.

$$ATO = \frac{\text{Total Turnover}}{\text{Total Asset}}$$

(ii) **Company Process:** This includes the totality of the internal operations the company undertakes to meet customers' expectations and the technology used in value creation. The following indicators as suggested by Edvinssion and Malone (1997) indicate the process focus of the organization. Company process is = Administrative expenses

The primary goal of a firm should be to maximize the value of prices of a firms stock. The success or failure of management decision can be evaluated to the light of the impact of firm's stock price (Remi, 2005). The firm stock price has direct purview to the management efficiency which is one of the signals of firm's performance.

2.1.7 Intellectual Capital and Market Value

According to the traditional accounting practices the book value of an organization is solely calculated from its financial statements. The simplistic method of such a calculation includes subtracting liabilities from the firms' total assets. As a result conservative accounting practices failed to account on the most important intangible assets of every organization (Sveiby, 2000). The gradual introduction of the international accounting standards (IAS) in nearly every developed and developing country (Except for the USA which is expected to implement the IAS in the next five years) forced companies to calculate assets at their real market value, while giving full definitions and credit to all intangible (International Financial Reporting Standard (IFRS), 2008).

Despite that the inability of most companies to comply with IAS and the significant cost of such an implementation, still deteriorate the recognition of the intangible assets of every organization (Judge & Pinsker, 2010). The result of such a short seeing is a growing divergence between the market and book value of organizations. In other words, the market estimates the value of companies with high intangible assets to be significantly higher than the calculated book value (Chen et al 2005, Firer and Williams, 2003; Riahi- Balkooui, 2003).

Broking (1962) finds that 62% of the company value was represented by its physical capital by 1992 the percentage had declined to 38% and continues to fall. Other researchers show that in

1995 over 75% of the value of companies from health care and personal services industries is attributable to its intangible or intellectual capital (Amiteva, 2014) .These increasing gaps between market value and book value have drawn research attention among researchers to find contribution of intellectual capital to the organizational financial performance.

In this study the difference between market value and book value of the company is used to measure shareholders value creation in capital market and market to book ratio is used as a measure of shareholders value creation of sample companies. It is ratio of market value of common stock and book value of total shareholders' equity.

$$\text{M/B Ratio} = \frac{\textbf{Market Value of common stocks}}{\textbf{Book value of shareholder equity}}$$

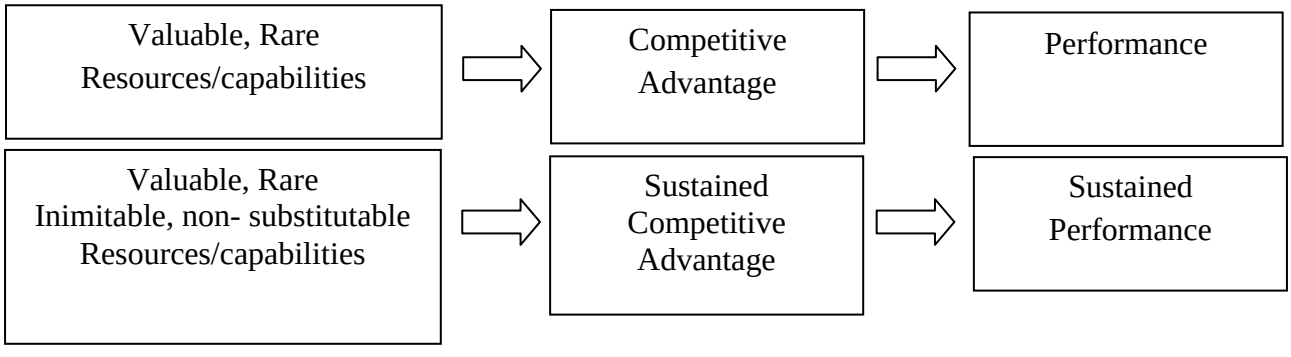
2.2 Theoretical Frame work

2.2.1 Resource Based View of the Firm (RBV)

This was introduced by Wemerfelt (1984) and refined by Banney (1991) central to the proposition of RBV is that a firm represents a collection of unique resources and capabilities that provide basis of sustained competitive advantage so long as they are valuable, rare, difficult to imitate and non-substitutable (VRIN) (Barney, 1991). The theory presumes that firms are a bundle of heterogeneous, capabilities that are imperfectly immobile across firms. According to this view, firm performance can be attributed to unique resource rather than industry structure, a proposition supported by strategy literature (Gathrie, Datha & Wright, 2004). Hall (1992) and Grant (1996) classified resources into tangible assets, intangible assets and human resources with human being characterized as the most productive asset. Corporate reputation, corporate culture and employees Know-how were characterized as more influential than tangible assets as they are likely to meet Baneys (1991) four conditions outline. Competitive advantage can be attributed to unique resources particularly intangible ones when they are combined or integrated (Banney,

1999). Knowledge asset are not consumed when they are applied to solving organizational problems, on the contrary a knowledge assets value generally maintained and enlarged by its application, while conventional assets must be depreciated or replaced.(Spender,2002) . RBV explains the internal conditions under which competitive advantage for firms is achieved and how the advantage can be sustained over time based on their bundles of resources and capabilities. Central preposition of the RBV is that firms that possess and control resources that have the attribute of valuable and rare would obtain competitive advantage and improved performance. In order for the firms to achieve sustained performance and competitive advantage over time resources must also be inimitable and non-substitutable. This attributes are the fundamental drivers of performance and competitive advantage (Barney, 1991).

Figure 2.6: Barney's Frame work of the Resources Based View as Presented in Newbet, 2007.



Sources: Newbet, 2007

Barney (1991) classified resources into physical capital, human capital and organizational capital. Firms that obtained competitive or sustained competitive advantage implement strategies not concurrently pursued in their existing or potential competitive firms.

Intangible assets are perceived as more lasting or driving competitive advantage (Peteref, 1993).As they are extremely difficult for competitors to copy (Galbreath, 2005). Capabilities are the organizational ability to assemble, integrate and deploy the resources. Resources do not contribute to firm competitive advantage unless they are utilized such as to enhance knowledge or to produce innovation (Grant, 1996). While resources are owned or control by firms, capabilities are used to integrate, develop and transform resources into valuable solutions for customers. The Resource Based View is appropriate in guiding this research as it focuses on firms specific resources that may when combined innovatively offer firms sustainable competitive advantage.

In support of this Beeker and Grant (1996) and Wright et al (2001) note that a synergetic effect rather than a set of independent practices leads to competitive advantage. This argument discredits the assumption that reliance on a single element like human capital which has been overly emphasized in literature as a source of competitive advantage. RBV is governed by general belief that resources interaction should be more valuable than the sum of its parts. (Riabi-Belkaouli (2003) Cabinita and Bontis (2008) have provided empirical support for the RBV Theory. It is on this theory which is more relevant to this study that this present work is anchored on.

2.3 Empirical Review

At present, knowledge, information and information technology, whether embodied in human resources or organizational structure, have become primary production factors. Manufacturing or producing companies use these vital assets to gain superior competitive advantage. But in service companies belonging to sector like Information Technology (IT) banking and finance, pharmaceuticals etc, intellectual resources are the main basis of enhancing sales revenue and profitability also. They use intellectual resource as a capital to their production system.

According to Bornemanne et al (1999) enterprises, which are able to manage their intellectual capital will achieve stronger competitive advantage than other competing enterprises. Brennem and Connell (2000) claim that intellectual capital management plays an important role in achieving long-run business performance of an enterprises

The empirical works related to this study are reviewed based on the objectives of the study.

productivity and market value of a firm by employing the Value Added Intellectual Coefficient (VAIC) technique reviewing the intellectual capital components, he suggests measure that are of importance for improving a firms efficiency and resources in the united kingdom.

In an empirical study of intellectual capital performance and its impact on the financial performance of Pakistani insurance companies

Rehman, Ilyas and Rehman (2011) found that human capital efficiency HCE) plays a significant role in intellectual capital performance of both life and non-life insurance sectors of Pakistan. They conclude that an insurance company with a high HCE and SCE naturally will have a better financial performance.

Using the VAIC model, Jovornike, Tekavlie and Mac (2012) study more than 2000 Slovenian companies between 1995 and 2008 and found a high degree of correspondence between the improvement in the rank of a company's intellectual capital investment efficiency and the improvement in rank of its financial performance in per group

Clarke, Seng and Whiting (2010) using Pulic's VAIC examine the effect of intellectual capital on firm's performance in Australian listed companies between 2004 and 2008. The results suggest that there is a direct relationship between intellectual capital and the performance of Australian publicly listed firms, particularly with capital employed efficiency and to lesser extent, human capital efficiency.

Using the balanced score card (BSC) strategy Bose and Keith (2007) examine the development of a frame work for the measurement of an organization's performance. Measuring performance in relation to a major Australian company, they studied on the nearly appointed CEO of the fosters' Brewing Group reversed a decline in performance by adopting, among other initiative, the balance scorecard approach to management and turned the organization's fortunes around.

2.3.2 Empirical Review Based on Objective 3 Using Asset Turnover (ATO) as a Proxy for Financial Performance.

Chan (2009) have carried out a study in companies enlisted in the Hongkong Stock Exchanged and it reveals that there is no significant association between intellectual capital and corporate performance using ATO and ROE. The result shows that physical capital is the most significant factor affecting profitability, productivity and market valuation of the firms.

Chu, Chan and wong (2011) examine the association of intellectual capital with financial performance of companies operating in Hongkong Stock Exchange during 2005-2008. VAIC methodology was applied to measure intellectual capital and Asset Turnover. The result found no strong association between VAIC and ATO.

2.3.3 Empirical Review Based on Objectives 4 and 5 Using Employee Productivity and Company Process Proxies for Non-Financial Performance.

Ahangar (2011) study the relation between IC and financial performance. An empirical investigation in Iranian companies between 1980 -2009. The results showed that the relationship between the performance of a company IC and profitability, employee productivity and growth in sales are informative. In addition suggests that the performance of a Company intellectual capital can explain profitability and productivity.

Chen et al (2003) conduct an empirical investigation on the relationship between intellectual capital, market value and financial performance. They used a large sample of Taiwanese listed Companies and utilized Pulic (2000) VAIC. Their study underlined the importance of intellectual capital on the enhancement of firm profitability and revenue growth. The empirical results proved that

- Investors value higher, companies with better IC efficiency and
- Companies with better IC efficiency obtain a higher degree of profitability and revenue growth in the current and following years

  OECD (2006), found that IC has played a significant role, as much as tangible capital, in improving labour productively in the USA from 1995 to 2003
- Chen Cheng and Hwang (2005) analyze the relationship between VAIC and market to Book value and also with corporate performance (ROA, growth in revenues and employee productivity) for all firms listed on the Taiwan stock exchange (TSE) during 1997-2002. The final sample includes 4254 firms' years. They argue that Pulic definition of structural capital neglects innovative capital. They have included research and development (R&D) expenditure as a part of structural capital in the regression model and this has the explanatory power of model. They report that investors pay different values to three components of VAIC. Finally, their study reports a positive impact of intellectual capital on sample firms' market value and financial performance.

Diez, Majda, Begona and Alice (2010) have tried to examine the influence of intellectual capital (represented by human capital and structural capital on the creation of business value of Spanish firms having 25 employees or more. The explanatory analysis confirms the positive relationship between the use of human and structural capital and value creation measured by sales growth.

The study however, finds no significant relationship among human capital structural capital and dependent variables like return on assets and productivity.

2.3.4 Empirical Review Based on Objective 6 Using Market Value as Proxy for Firms Financial Performance

Tseng and Goo (2005) prove that the role of intellectual capital in enhancing corporate value of High-tech companies is more than for the non-high-tech companies. Innovation and relationship capital impact directly and positively to corporate value measured by market-to-book value. Ghose and Wu (2007) use both secondary and survey data to examine the effect on intellectual capital on firm value measured by market to Book ratio and Tobin's Q. Result show that intellectual capital explains the financial performance of the sample companies.

Cheuck, Wong and Kok (2006) examine the relationship using data from 52 public finance companies from the Bursa Malaysia. Their study examines the market value which is denoted by share prices. The results show that the correlation between VAIC and share price is negative. Maheram, Muhammad and Ishmael (2009) examine the efficiency level of the trend of IC among 18 financial companies for the year 2002-2006 they have found that firms' market value have been created more by capital employed (Physical and financial) rather than intellectual capital. However, there is no evidence of IC efficiency by years. In terms of relationship between VAIC and their companies, IC has positive and significant relationship with Human capital and Structural capital but not with the capital employed.

Bramhandker, Erickson and Applebee (2007) have study the relationship of intellectual capital with the organization's financial performance, using a sample of 139 firms in the drug industry of USA. Samples companies have been sorted according to intellectual capital value calculated

by differentiating book value from market capitalization. From the study results it is revealed that firms with the highest level of intangible assets perform better than those with lower levels. The high lever firms are seen to have earned significantly better returns and significantly less variability in stock price.

Wang (2008) investigates the relationship between intellectual capital and market value of United States S & P 500 publicly traded companies. The researcher has used secondary data of 893 United States electronic companies for the study. Multiple Linear regression techniques has been used to analyzed the data. The results reveal that the intellectual capital had strong impact on the competitive advantage and market capitalization of the firm.

Asadi (2012) investigates the relationship between intellectual capital and value creation criteria of 59 companies listed on Tehran Stock Exchange for a period of five years. The results indicate that there are significant relationship between intellectual capital and economic value added, cash value added and market value added.

Ghorbari, Shahagy, Mosari and Avari (2010) study the effect of intellectual capital on financial performance in Iranian Pharmaceutical industry between 2004 and 2008. The result showed no reason for the attribution of changes in market values of firms to performance of intellectual capital and it seemed that pharmaceutical market of Iran still show more sensitivity to material capital than intellectual capital.

Firer and Williams (2003) utilized the VAIC approach to measure the relationship between intellectual capital and traditional measures of corporate performance. They used a sample of 75 South African public traded companies but the empirical results failed to support any relationship between the three value added efficiency components and the three dependent

variables (profitability, productivity and market value). The findings reveal that South African companies depend mostly on their tangible resources, pay the least important to their structural capital. While on the other hand the market seems to react negatively to firms that concentrated solely on the enhancement of human assets.

Samiloghu (2006) try to determine whether a significant relationship between VAIC and market to book value ratios really exist. The author used data from the financial statements of banks listed on the Istanbul stock market over the years 1998 to 2011. The results demonstrate that there was no significant relationship between the depended variable (MV/BV) and the independent variables VAIC and its three components.

Shiu (2006) investigates 80 Taiwan technology firms, found significant positive correlations between VAIC, profitability and market valuation and a negative correlation with productivity

Chen et al (2005) have tried to examine the relationship between the value creation efficiency and firm's market valuation and financial performance. They have found that the intellectual capital has a positive influence on the market value and the financial performance.

Nagi (2005) investigates empirically the value creation efficiency of intellectual capital, market valuation and financial performance of 22 Bangladeshi banks listed on Dhaka Stock Exchange. The results support the positive role of IC in creating corporate value.

Appuhami (2007) investigates the impact of value creation efficiency of IC on investors' capital gain on shares of listed companies in Thailand Stock Exchange. The empirical research finds that firms' intellectual capital has a significant positive relationship with its investor's capital gain on shares.

2.3.5 Empirical Review Based On Other Criteria

Brymer, Molloy and Gilbert (2014) highlight input, output and process contingencies as a pipeline hiring mechanism adopted by firms in the engagement of human capital to the modern economy. Pipelines, according to the authors, refer to repeated inter organizational hiring system and practice which firms use to differentially acquire and accumulate intellectual capital risks particularly in the knowledge based firms.

In another study which evaluated the role of intellectual capital to the university efficiency system, efficiency system at Azad Islamic University in Iran; using synthetic model of genetic algorithm and decision trees. Modaresi, Razaei and Javid (2012) observe that the development of intellectual capital affects university efficiency significantly.

To understand how the measurement of intellectual capital can favour intellectual capital mobilization, Chiucchi (2003) examines the role of those who design and implement intellectual capital practices. Using the Kolb's experimental learning theory model, she opines that actors must complete and experimental learning cycle so as to enable them appreciate fully the contribution of intellectual in their organizations.

2.3.6 Empirical Review Based on Studies in Nigeria.

Despite the prominence given to the efforts of the workforce in the annual financial statements of companies in Nigeria, the measurement of intellectual capital in Nigeria is very shallow. It is true that human capital is acknowledge by the treatments of companies especially if the chairman's statement in the annual reports, yet such knowledge are not measured or articulated in the company's financial reports. This means that the value of firms in Nigeria is under reported.

In Nigeria, studies on the measurement of intellectual capital are currently not detailed.

Onafalujo Eke and Akinlabi (2011) observe though that accounting in insurance companies using the new IFRS recommendation is relevant to the Nigerian Financial environment but argue that the application of IFRS through the use of observable and unobservable market inputs as well as the experience variance of operators may be difficult in the short run but achievable in the long run. They identified that the inability of the workforce to uphold good ethical practices in insurance firms in Nigeria do negatively affect the practice of insurance.

Epetimelim and Ekundago (2011) observe that intellectual capital as a vital corporate asset, will net away unless companies do something to stop the brain drain and to retain critical knowledge. They opined that the survival of the insurance companies in Nigerian is dependent upon the resolve of the workforce to eliminate unethical practices which are resorted to avoiding liability under insurance policies.

Oneyekwelu and Ubesie (2013) study on pharmaceutical companies in Nigeria, analyzed the effect of intellectual capital on corporate valuation from (2004-2013) using market to book value ratio (MV/BV) and earnings per share (EPS) adopting Pulic (2000) VAIC, the results show that human capital efficiency has a positive and significant effect on market/book value. Structural capital has a negative and insignificant effect on EPS. While Ekwe (2012) found out a statistically strong relationship between the components of intellectual capital and market to book value M/BV ratio of banks listed on Nigeria Stock Exchange.

Yahaya (2006) using the quantitative measure published by the Institute of Intellectual Capital Research and approved by the Saratoga Institute measured the impact of investment in human training and development on employees effectiveness in Nigerian Banks between 2001 and 2005. Her study confirms that an assessment of the human resource effectiveness of 3

commercial banks (Zenith, First bank and Union bank) showed that Zenith bank with the best human resources management and accounting practice perfumed better than first bank and Union Bank.

2.4 Summary of Empirical Review

TABLE 2.6: Summary Empirical Review Based on Objective 1 And 2 (ROA AND ROE)

S/N	AUTHOR	YEAR	TITLE	MODEL	SAMPLES	RESULTS
1.	Firer and Williams	2003	Relationship between intellectual capital and traditional measures of firms performance			No relationship found
2.	Chen et al	2005				Intellectual capital has a significant impact on profitability
3.	Zhang et al	2006	Intellectual capital and enterprises financial performance		Automobile firms on Chiness security market	Corporate performance is more sensitive to intellectual capital rather than physical capital

Continuation of Empirical Review Based On Objective 1 And 2 (ROA And ROE)

4.	Rehman S	2012	Intellectual capital and corporate financial performance		1000 biggest Brazilian companies	Existence of a positive relation between intellectual capital and ROA and ROE
5.	Makri et al	2008	Intellectual capital performance of 25 Pakistani companies		25 companies listed on Pakistani stock market.	Result shows that oil and gas, chemical and cement sectors companies top in intellectual efficiency followed by banking, while the least is public sector
6.	Makia and Loadhi	2009	Examines the relationship between intellectual capital and return on investment (ROI)	Pulic (1998) model VAIC		Result indicates that intellectual capital efficiency can be used as a bench mark to direct financial resources

Continuation of Empirical Review Based On Objective 1 And 2 (ROA And ROE)

7.	Chan	2009	Intellectual capital and corporate financial performance		Companies listed on Hong Kong stock exchange market.	No significant association between intellectual capital and corporate financial performance using ROA & ROE
8.	Maheran and Muhammed	2009	The efficiency of intellectual capital and its impact on companies performances		18 Malaysian finance companies	Intellectual capital has greater influence in banking sector as compared to insurance and security brokerage companies using ROA as a dependent variable
9.	Bose and Keith	2007	Development of a frame work for the measurement of an organizations' performance	Balanced score card	Major Australian companies	Positive relation of intellectual capital with performance

Continuation of Empirical Review Based On Objective 1 And 2 (ROA And ROE)

10.	Razafindrambinina and Anggremi	2008	Intellectual capital and firms performance		Indonesian firms	Intellectual capital associated with various measures of financial performance except with revenue growth
11.	Bollen et al	2005	Intellectual capital and firms performance		German Companies	All components of intellectual capital have a significant influence over intellectual property
12.	Jyotirmayee	2010			Indian IT sector	Result shows that the three components of intellectual capital is associated with companies performance

Continuation of Empirical Review Based on Objective 1 and 2 (ROA And ROE)

13.	Zeghal and Maaloul	2010	Impact of intellectual capital on firms' economic, financial and stock market performance		300 United Kingdom firm	Intellectual capital has positive effect on economic and financial performance of companies
14.	Clark, Seng and Whiting	2010	Effect of intellectual capital on firms performance	Pulic VAIC	Australian listed companies between 2004-2008	There is a direct relationship between intellectual capital and the performance of Australian Publicly listed companies.
15.	Maditinos et al	2011			Companies listed on Anthems stock exchange market	Financial performance of companies is only significantly associated with human capital efficiency

Continuation of Empirical Review Based on Objective 1 and 2 (ROA and ROE)

16.	Ong Yeoh and Teh	2011	Intellectual capital efficiency on companies listed on the Malaysian stock exchange market	Using Pulic VAIC model	43 food and beverage companies listed on the Malaysian stock exchange market (2008-2010)	Beverage companies have greater value added intellectual capital efficiency the food companies over the three years
17.	Chu et al	2011	Intellectual capital and firms listed on Honking stock exchange market	VAIC Model		No strong association between VAIC and financial inductors (ROA ROE)
18.	Rehman, llyas and Lehman	2011	Intellectual capital performance and its impact on the financial performance of Pakistani insurance companies		Insurance sectors of Pakistani stock exchange market.	Human capital efficiency plays a significant role in intellectual capital performance of both life and non-life insurance companies
19.	Ahmad and Mushrat	2011	Intellectual capital and business performance		Firms listed on Iraqi stock exchange	Intellectual capital is becoming the pre-eminent resource of creating economics wealth

Continuation of Empirical Review Based on Objective 1 And 2 (ROA and ROE)

20.	Raliman	2012	Intellectual capital on firms profitability	Public (VAIC) Model	Firms listed on united kingdom London stock exchange	No relationship
21.	Javormke, Tekavae and Mac	2012	Intellectual capital and financial performance in a peer group	Public (VAIC) Model	1200 Slovanian companies between 1995-2008	High degree of correspondence between the improvement of the rank of a company's intellectual capital investment efficiency and the improvement in rank of its financial performance in peer group
22.	Asgari	2013	Intellectual capital components on financial performance of Iranian firms		Iranian firms listed on Iraqi stock exchange market between (2006 and 2010	Significant effect of intellectual capital components on the operating cash flow and average return

Table 2.7: Summary of Empirical Review Based on Objective 3 Asset Turnover (ATO)

23.	Firer and Williams	2001	Performance of Companies Intellectual Capital and Organizational Performance	Pulic (VAIC) Model	Companies listed on South Africa stock exchange market	VAIC positive with ROA and negative with ATO
24.	Shui	2006	Intellectual capital and firms financial performance	Pulic 1998 VAIC Model	150 Listed companies in Taiwanese stock exchange market between	There is a significant relationship between VAIC and companies performance and VAIC is higher in service and property sectors relative to the trading sector.

Table 2.8: Summary Empirical Review Based On Objective 4 & 5 Company Process And Employee Productivity

S/N	AUTHOR	YEAR	TITLE	MODEL	SAMPLES	RESULTS
25.	Ahanger	2011	The relationship between intellectual capital and financial performance		Iranian companies between 1990 - 2009	The result showed that the relationship between the performance of a company intellectual capital and profitability, employee productively and growth in sales are informative
26.	Chen et al	2003	The relationship between intellectual capital, market value and financial performance	Pulic 2000a,b, Model VAIC	Large Taiwanese listed companies.	The study underlined the importance of intellectual capital enhances firm profitability and revenue growth

Continuation of Empirical Review Based On Objective 4 & 5 Company Process And Employee Productivity

27.	OECD	2006	Intellectual capital and firm performance		USA firms 1995-2003	Intellectual capital play a significant role as much as tangible capital in improving labour productivity in the USA from 1995-2003
28.	Chen, Cheng, Hwang	2005	Relationship between VAIC and market to book value and also with corporate performance using ROA, growth in revenue and employee productivity		4254 firms years of all firms listed on the Taiwan stock exchanges market from 1992-2002	They argue that pulic definition of structural capital neglects innovative capital. They included research and development expenditure as a part of structural capital in the regression. The study reports a positive impact of intellectual capital on sample firms market value and firms performance
29.	Diez et al	2010	Influence of intellectual capital on the creation of business value		Spanish firms having more than 25 employees	Positive relationship between the use of human and structural capital and value creation measured by sales growth. The study also finds no significant relationship among human capital, structural capital and dependent variables like return on assets or productivity.

Table 2.9: Summary of Empirical Review Based On Objective 6 Market Value

30.	Ghorban	2010	Effect of intellectual capital on financial performance in Iranian Pharmaceutical industry		Iranian companies on Iran stock exchange 2004-2008	Result show no reason for the attribution of charges in market value of firms to performance of intellectual capital
31.	Firer and William	2003	Intellectual capital and traditional measure of corporate performance	Pulic 1998 model VAIC	No relationship between the three value added efficiency components and the three dependent	75 South African public traded companies

					variability (profitability productivity and market value)	
			Continuation Summary of Empirical Review Based On Objective 6 Market Value			
32.	Samiloglu	2006	Study on the relationship between VAIC and market to book value ratio really exists	Pulic (2000) model (VAIC)	Banks listed on Istanbul stock market over the years 1998 to 2011	The result shows that there was no significant relationship between the dependent variable MV/BV and the independent variables VAIC and its three companies
33.	Shu	2006	Investigation of the relationship between intellectual capital components with profitability and market value	Pulic Model (VAIC)	80 Taiwan technological firms	Found a significant positive correlation between VAIC, profitability and market valuation and a negative correlation with productivity.
34.	Chen et al	2004	The value creation efficiency	Public (2000)		Intellectual capital has a

			and firms market valuation and financial performance	model VAIC		positive influence on the market value
35.	Nagibbillah	2005	Investigation of intellectual capital and market valuation and financial performance		22 Bangladisian banks listed on Dhaka stock exchange	Positive role of intellectual capital in creating corporate value

Table 2.10 : Summary of Empirical Review Based On Other Criteria

36.	Appuham	2007	Impact of value creation efficiency of intellectual capital on investor capital gain on shares of companies listed on Thailand stock exchange		Companies listed on Thailand stock exchange	Intellectual capital has a significant positive relationship with its investors capital gain on shares
37.	Tseng and Goo	2005	Intellectual capital and corporate performance	Tobin's Q Model		Significance positive relationship between intellectual capital and high – tech. companies is more than non- high tech companies

38.	Ghose and Win	2007	Effect of intellectual capital on firms value	Tobin's Q model		Results shows that intellectual capital explains the financial performance of sample firms
39.	Cheuk et al	2006	The explanatory power of VAIC and the company's market value	Pulic 2000 model VAIC	52 public fiancé companies from the Bursa Malaysian stock exchange	Shows the negative correlation between VAIC and share price.

Continuation Summary of Empirical Review Based On Other Criteria

40.	Maheram et al	2009	The efficiency level of the trend of intellectual capital among companies	Pulic (2000) Model VAIC	18 financial companies (2002-2006)	Market value have been influenced more by capital employee than by intellectual capital
41.	Barmhandker, Erickson and Applebee	2007	Relationship of intellectual capital with the organization's financial performance		139 firms in the drug industry of USA	Result shows that firms with the highest level of intangible assets perform better than those with lower level and the higher level firms have earned

						significantly better return and has variability in stock price
42.	Wang	2008	Relationship between intellectual capital and market value of USA publicly traded companies		USA 893 electronic companies publicly traded companies	Intellectual capital have strong impact on the competitive advantage and market capitalization of the firms
			Continuation Summary of Empirical Review Based On Other Criteria			
43.	Ashadi	2012	Intellectual capital and value creation criteria		59 companies listed on Tehram stock exchange for a period of 5 years	The results indicates that there are significant relationship between intellectual capital and economic value added, cash added and market value
44.	Razau Modunesi and Javid	2012	The role of intellectual capital in the university system	Synthetic model and decision three	Azad Islamic university Iran	The development of intellectual capital affects university efficiency significantly.
45.	Chiuchi	2003	The role of those who design and l implement intellectual capital practices	Kolb's experience learning theory model		Actors must complete an experimental learning cycle to fully appreciate IC on organization

46.	Damartini and Paolom	2013	Transition in measurement in relation to intellectual capital		Electronic and Defence industry	Positive relationship and value creation in the organization.

Table 2. 11: Summary of Empirical Review, Based On Studies In Nigerian

47.	Epehimehim and Ekundayo	2011	Intellectual capital and insurance companies in Nigerian		Insurance companies listed on NSE	Intellectual capital as a vital corporate asset will melt away unless companies do something to stop the brain drain.

48.	Onyekwelu et al	2006	Intellectual capital and corporate valuation of pharmaceutical companies in Nigerian	Pulic (2000) model VAIC	Pharmaceutical companies listed on Nigeria stock exchange market	Human capital has a positive and significant effect on market to book value. Structural capital has a negative relationship with EPS
		Continuation of Empirical Review, Based on Studies in Nigeria				
49.	Ekwe	2012	Intellectual capital and banks performance in Nigeria	Pulic (2000) model (VAIC)	Banks listed on Nigeria stock exchange market	Statistical strong relationship between the component of intellectual capital and market to book value ratio
50.	Yahaya	2006	The impact of investment in		Banks listed on	Assessment of the

			human training and development on employees effectiveness in Nigerian banks (2001-2005)		Nigeria stock exchange market (2001-2005)	human resources effectiveness of three commercial banks (Zenith, First and Union bank)
			Continuation of Empirical Review, Based on Studies in Nigeria			
51.	Onafalugo, Eke and Akinlabi	2011	Accounting in insurance companies in Nigerian using the new IFRs		Insurance companies listed on Nigeria stock exchange market	Application IFRS through the use of observable and un observable market inputs and as well as the experience variance of the operators may be difficult in the short run but achievable in the long run.

2.5. Summary of Reviewed Literature

A critical assessment of the materials reviewed in this study reveals that over four decades ago, intellectual capital research, became the focus of accounting research. The phrase intellectual capital was first proposed by Galbraith (1969) and popularized by Stewart (1997) in fortune magazine. The increasing gaps between market value and book value have drawn attention among researchers to find contribution of intellectual capital to the organization financial performance. The justification or otherwise for the place of knowledge otherwise called intellectual capital in driving market value, and indeed other corporate value indices has constituted a challenging academic problem in the past few decades. Some scholars have described intellectual capital as being a key driver of corporate value enhancement (Sullivan, 2000; Firer & William. 2003; Amitava, 2014).

In contrast to the above submission some empirical studies could not establish any statistical relationship between intellectual capital and firms value (Zou & Huen, 2011).

Great research work has been carried out in advanced economics, studies like Bontis et al (2000) ZLang et al(2006), Riahi- Belkaui (2003) and others as sported in the reviewed literature.

In Nigeria the few works sported which did not take a holistic approach in determining the effect of intellectual capital on firms listed on Nigeria Stock Exchange are: Ekwe (2012) who studied on few selected banks, Anuonye (2015) who investigated on the insurance sector and Onyekwelu (2013) who carried a study on the pharmaceutical sector of the Nigeria economy.

2.6 Research Gap:

From the summary of the reviewed literatures and to the best of my knowledge it is clear that researchers in Nigeria have not attempted to carry out an empirical study of intellectual capital

on all the firms listed on Nigeria Stock Exchange . The few sported decomposed the Stock Exchange Market into sectors. Ekwe (2012) based his research on the banking sector, Anuonye (2015) considered the insurance sector while Onyekwelu (2013) investigates the pharmaceutical sector of the Nigerian economy. Hence this present study is a modest attempt to close the gap by studying all the sectors and firms listed on Nigeria Stock Exchange.

CHAPTER THREE

METHODOLOGY

Having extensively reviewed literature related to this study, it is important at this point to turn to techniques and procedure through which relevant results will be obtained. This chapter will expose the design of the study, population of study, samples and sampling techniques, sources of data, method of data analysis and model specification.

3.1 Research Design

The study adopted ex-post facto research design in order to establish the extent to which intellectual capital affects firm's performances. In such research design, the research is undertaken after the events have taken place and the (Historic) data are already in existence it is a systematic empirical study in which the researcher does not in any where control or manipulate independent variable because the situation for study already exists or has already taken place (Asika, 1990). An ex-post facto research determines the cause – effect relationship among variables (Onwumere, 2005). This study is interested in determining the effect of intellectual capital on firms' performance.

3.2 Population of Study

The study population consists of all the 213 listed companies on the Nigeria Stock Exchange. (The Nigerian Stock Exchange Fact Book, 2001)

3.3 Sample and Sampling Techniques

The study focused on 213 companies listed on the Nigeria stock exchange during the period 2001 to 2015. Sample size was reduced to 40 companies out of 213 because of, Merger and acquisition, distress and delisting of some companies on the Nigerian Stock Exchange Market. Panel data will be used to overcome the problems associated with missing data (Negash, 2005). The panel data of 40 companies over a period of 15 years will result to 600 observations.

The study employed multi-phase sample method. In multi- phase sampling method some of the same different sampling units are employed at the different phases of sampling. Multi-phase sampling is a sampling method in which certain items of information are drawn from the whole unit of a sample and certain other items of information are taken from the subsample (Philip and felted, 1990)

We also excluded companies which have access for the first time during the selected period. In details 45 companies excluding 5 due to their two short listing periods were selected.

3.4 Sources of Data

This study will apply secondary data which will include data for financial performance proxy by Return on Asset, Return on Equity, Asset Turnover, Company Process, Employee Productivity will be collected from published annual reports of the respective firms while market related data will be collected from annual reports and Nigeria Stock Exchange Fact Book.

3.5 Description of Research Variables

In a resource base view, business benefits are measured considering both tangible and intangible assets. (Canibano, Garcia & Sanchez, 2000). Corporate performance measurement tools which include financial measures such as ROA, ROE, ATO, Market to Book Value Ratio, Employee Productivity and company process, are applied in this study. The firms listed on Nigeria Stock Exchange are judge by multiple factors such as shareholders, investors and general public. The different interests of the various stake holders require that performance should be assess in several areas simultaneously. For the purpose of conducting the analysis six dependent variables which are proxies for financial performance are taken into account. At the absence of adequate empirical evidence that supports the superiority of any specific proxy measure over the others it is therefore, decided that for the purpose of this study they commonly used proxy measure will be applied. Consequently the proxy measures for each dependent variable are defined as follows

(iii) **Asset Turnover (ATO):** it is the ratio of total turnover to total asset. It indicates the company's productivity as measured by the asset-turnover ratio.

$$ATO = \frac{\text{Total Turnover}}{\text{Total Asset}}$$

(4) **Company Process:** This includes the totality of the internal operations of the company undertaking to meet customers' expectations and the technology used in value creation. The following indicators as suggested by Edvinssion and Malone (1997) indicate the process focus of the organization. Company process is = $\frac{\text{Administrative expenses}}{\text{Operating Asset}}$

(6) **Market Value to Book Value Ratio (M/B):** this ratio shows the relationship between the market value per share of each firms and its book value per share

$$M/B = \frac{\text{Market Value Per Share}}{\text{BV Per Share}}$$

Independent Variables

This study will adopt Value Added Intellectual Co-efficient (VAIC) which measures corporate intellectual ability. (Pulic, 2000). VAIC is made up of three independent coefficients. Capital Employed Efficiency, Human Capital Efficiency and Structural Capital Efficiency. Human Capital Efficiency and Structural Capital Efficiency represent the Intellectual Capital (Independent variable) while capital employed efficiency another independent variable represents the physical and financial assets of the firms. VAIC will make comparison of the extent to which both independent variables affect the performance of firms.

Control Variables

in order to identity the specific effect of the intellectual capital on firms performance the following control variables have been included to (Segregate the influence of intellectual capital) control for the effect of financial leverage physical capital intensity, and size of firms.

1) Financial leverage, (Lev) financial leverage and debt structure as measured by total debt divided by book value of total assets is used to control for the impact of debt-serving on corporate performance and wealth creation.
2) Physical capital (PC) physical capital intensity as measured by the ratio of a company's fixed assets to its total assets (Firer and StainBank, 2003). Is used to control for the impact of fixed assets on corporate performance. The assumption is that company's fixed assets have significant impact on company's financial performance.
3) Size of firms as measured by the Natural Log of total asset is used to control for the impact of size on wealth creation through economics of scale, monopoly and bargaining power (Riabi- Belkaoui, 2003)

3.6 Method of Data Analysis

To analyze the respective effects of intellectual capital and firms performance multiple regressions analyses will be performed based on the model specified below.

In assessing the effect of intellectual capital on firm’s performance, the variables included in the regression model will be examined with P-values related to them.

P - Value represents the minimal level to which the null hypothesis of no statistical significance of the variable evaluated into the model would be rejected. Panel data will be used in the study for test of the six hypotheses. This is the combination of the time series with cross sectional to enhance the quantity and quality of data in ways that would be impossible using only one of these two dimensions. (Gajurati, 2003).

The repeated observations of enough cross-section and panel analysis permit, the study of dynamics of change with short time series. We test the significance of the variables at 5% level of significance. According to this approach a variable is assumed to be significant (Consequently rejecting the null hypothesis) if its P-value is less than 5% significant level.

Researchers often investigate value of different samples by comparing R^2 which expresses the explanatory power of a regression model. R^2 in statistical terms expresses the fraction of the variation in the independent variables by the regression (Gottoche & Schauer, 2011). However, in multiple regression an adjusted measure of (R^2 Adjusted) is needed .The reason is that R^2 values grow up any way whether a new variable is added into the model even if the new variable does not improve the model (Gottoche & Schauer, 2011)

Standardized regression co-efficient are also presented to judge the predictive strength of independent and control variables (Veaux, Velleman & Bock 2003).

Variation Inflation Factors (VIF) values are reported to check the problems of multicolinearity. Collinearity is considered as serious if the variation inflation factor is greater than 5 (Chan 2009). Regression results of intellectual capital and corporate performance of all 40 sample companies are discussed using both VAIC and decomposed elements of VAIC (HCE, SCE, and CEE).

3.7 Model Specification

A lot of models have been developed by intellectual capital researchers as reviewed in chapter two of this study. The present work is based on Pulic (1998) model, the Value Added Intellectual Co-efficient (VAIC) model transformed into an ordinary least square (OLS) regression approach. VAIC was developed basically as an analytical tool designed to effectively monitor and evaluate the efficiency of value added by a company's total resources among each resources components (Pulic 1998). The method is relatively simple and proposes a quantitative approach that uses

accounting information and produces efficiency indicators which are comparable among companies within the industries. This makes the approach popular. The procedure for calculating VAIC starts from determining the company's ability to create value added (VA). According to this method Value Added is the difference between sales output and input.

Step 1: VA = Output - Input

Where output refers to the sale revenue which the companies earn by selling all the products and service in the market in a particular time period. Input on the other hand comprises all the expenses incurred in earning the above revenue except employee costs.

Pulic (1998) states that the higher the VAIC, the better the efficiency of value added (VA) by a firms total resources.

Algebraically VA = I + DP + D+T + M+R+WS

Where	VA	=	Value Added
	I	=	Interest expenses
	Dp	=	Depreciation expense
	D	=	Dividend
	T	=	Corporate Tax
	M	=	Minority Shareholders interest
	R	=	Profit retained for the year
	Ws	=	Wages and salaries

Alternatively, VA can be calculated by deducting operating expense (Material costs, maintenance costs, other external costs) from operating revenue (Pulic 1998)

STEP 1: VAIC is the sum of two indicators: Capital employed efficiency (CEE) and intellectual capital efficiency (ICE)

VAIC = CEE + ICE

Intellectual capital efficiency is made up of human capital efficiency (HCE) and structural capital efficiency (SCE)

VAIC = CEE + HCE + SCE

VAIC = Value added intellectual Co efficiency

CEE = Capital employed efficiency of the companies

HCE = Human capital efficiency of the companies

SCE = Structural capital efficiency of the companies

STEP 2: Calculation of the components of value Added Intellectual Co efficient.

CEE = VA /CE

CEE = Capital Employed Efficiency co-efficiency of the companies

VA = Value added on the companies

CE = Book value of the net assets of the companies

STEP 3: Calculation of Human Capital. Pulic (1998) argues that total salaries and wage cost are part of human capital. Human capital efficiency therefore is calculated as the ratio of total value added divided by total salaries and wages

HCE = VA/HC

HCE = Human Capital efficiency of the companies.

VA = Value Added

HC= Human Capital (Total Salaries and wages)

In order to calculate structural capital efficiency (SCE) it is first necessary to determine the value of a firm's structural capital.

STEP 4: Calculation of Structural Capital

Structural capital is a firm Value Added (VA) less its human capital (EKwe 2012; Pulic, 1998)

SC = VA - HC

Where SC = Structural Capital

VA = Value Added

HC = (Human Capital) which is total salaries and wages of the companies.

Pulic (1998) argues that there is a proportionate inverse relationship between Human Capital and Structural Capital in the value creation process attributable to the entire intellectual capital base, the less Human capital participates in value creation ,the more structural capital is involved. Hence, the formula for calculating structural capital efficiency (SCE) differs from that of CEE and HCE. Pulic (1998) states that SCE is the ratio of a firm's SC divided by the total value added

SCE = SC/VA

Where SCE = Structural capital

Efficiency Co-efficiency of the companies

SC = Structural capital of the companies

VA = Value added of the companies.

This model is so unique from the other models discussed in the reviewed literature in that it has gained popularity among intellectual capital researchers to measure intellectual ability of the companies. (Chan, 2009; Schneider, 1999; Goh, 2005) among others support the adoption of this model based on the following reasons.

1) It produces objective and quantitative measurement without the requirement of subjective grading or use of questionnaires.
2) It aids further computation and statistical analysis by using a large sample size that may run into thousands of data items collected over a period of time.
3) It makes use of published financial data so that it may enhance the reliability of the measurement.
4) It uses very simple and straight forward procedures in its computations.

This model (VAIC) will be stated in mathematical form

$\boldsymbol{COP}$= *F [HCE, SCE, CEE, LEV, PC, SIZE]*

This forms the basis of arriving at the model of the study using panel data of multiple regression.

COP = Corporate performance which will be proxied by the following: ROA, ROE, ATO, CP, EP and M/B Ratio.

$$\boldsymbol{ATO_{it}} = B_O + B_1\, HCE_{it} + B_2\, SCE_{it} + B_3\, CEE_{it} + B_4\, LEV_{it} + B_5 PC_{it} + B_6\, SIZE_{it}$$

$$\boldsymbol{CP_{it}} = B_O + B_1\, HCE_{it} + B_2\, SCE_{it} + B_3\, CEE_{it} + B_4\, LEV_{it} + B_5 PC_{it} + B_6\, SIZE_{it}$$

$$\boldsymbol{M/B_{it}} = B_O + B_1\, HCE_{it} + B_2\, SCE_{it} + B_3\, CEE_{it} + B_4\, LEV_{it} + B_5 PC_{it} + B_6\, SIZE_{it}$$

From the above deterministic model. The following multiple regression model are derived to test hypothesis 1- 3

$$ATO_{it} = B_O + B_1\, HCE_{it} + B_2\, SCE_{it} + B_3\, CEE_{it} + B_4\, LEV_{it} + B_5\, PC_{it} + B_6\, SIZE_{it} + e_{it}$$

$$CP_{it} = B_O + B_1\, HCE_{it} + B_2\, SCE_{it} + B_3\, CEE_{it} + B_4\, LEV_{it} + B_5\, PC_{it} + B_6\, SIZE_{it} + eit$$

$$M/B_{it} = BO + B_1\, HCE_{it} + B_2\, SCE_{it} + B_3\, CEE_{it} + B_4\, LEV_{it} + B_5\, PC_{it} + B_6\, SIZE_{it} + e_{it}$$

ATO = Asset Turnover as measured by $\frac{\text{Turnover}}{\text{Total Assets}}$

CP = measured by $\frac{\text{Administrative Expenses}}{\text{Operating Assets}}$ indicates internal business process efficiency

M/B = Market value to book value ratio

HCE = Human capital efficiency indicate human capital performance as measured by the ratio of the value added to intellectual capital.

SCE = Structural capital efficiency indicates structural capital performance as measured by the Ratio of Structural Capital to value Added.

CEE = Capital employed efficiency indicates performance as measured by the ratio of value added to capital employed.

PC = Physical capital intensity as measured by fixed assets divided by total assets.

LEV = Debt to equity ratio this indicates the risk profile of the company as measured by the debt equity ratio.

Size: Size of the firm as measured by natural log of total assets.

BO = Constant term

B_1 to B_6 = Coefficients to be estimated

E = Error term

It= Individual firm at time t

Decision Rule: A variable is assumed to be significant consequently rejecting the null hypothesis if its P-value is less than 5% significant level

Table 3.1: Summary of Independent and dependent Variables

VARIABLES	DESCRIPTION	CODE
Value added intellectual co-efficient (VAIC)	Independent	VAIC
Capital employed efficiency	Independent	CEE
Human capital efficiency	Independent	HCE
Structural capital efficiency	Independent	SCE

Asset Turnover	Dependent	ATO
Company Process	Dependent	ADM/OPS
Market to Book value ratio	Dependent	M/B
Financial Leverage	Control variable	LEV
Physical Capital	Control variable	PC
Size of Firm (total asset)	Control variable	LOG OF TA

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1: Data Presentation

The data used is as in appendix 1 from were table 4.1 was derived.

TABLE 4.1: Cumulative Figures of the Variables of the Sampled Companies in the Various Years of Study.

YEAR	ROA	ROE	ATO	ADMOPA	EMP	MB	LEV	PC	TA	HCE	SCE	CEE	VAIC
2001	301.5	257.3	84.5	15.55	50846.97	37.29	165.1	272.9	52341941	64.63	16.11	42.801	137.4
2002	101.65	340.164	96.2	103.13	91991	40.95	209.166	3.31	75810222.31	211.093	48.62	143.06	347.2
2003	154.28	583.44	104.2	33.12	126332.1	96.99	248.06	577.63	97294854.77	123.08	15.599	108.32	246.92
2004	372.2	407.2	141.05	22.51	162490	56.392	147.8	733.25	141060061	102.74	30.89	133.76	267.397
2005	278.4	512.4	320.9	115.38	96911261.3	632.6	159.06	7024.8	72949147	158.86	37.138	85.02	281.01
2006	223.57	982.97	444.72	520	2168077	1023	223.75	99977.045	152742117	132.4	28.05	85.34	245.7
2007	1970.4	654.55	243.65	44.62	198020.7	136.26	209.88	700.2	65279265.9	329.5	27.08	640.36	996.9
2008	156.8	295.3	92.13	56.95	3801743.18	84.96	333.8	5469.8	97967422.88	330.7	12.6	52.86	396.2
2009	168.5	439.9	92.4	37.82	230637911	88.53	365.4	2077.6	198166582	106.3	21.3	52.4	180
2010	70.7	265.8	83.9	256.6	184583	49.3	180.5	8868.7	280809233	48.7	24.3	47.1	120.1
2011	207	366.2	542.61	105.7	267076.6	66.4	476.3	888.5	352390697.7	141.9	20	70.3	232
2012	169.5	1618.2	.65.1	98.7	312891	172	451.3	1022	516338592	119	63.63	79.2	262
2013	166.5	617.3	107.2	240	326728	36.8	589.3	926.6	6613590843	156.3	40.5	117.6	314.3
2014	177.3	693.19	71.7	221.4	335122.7	137.61	653.9	923.6	990104087	180.6	43.2	338.9	562.2
2015	192	466	71.88	254.2	219529	88.14	588.7	883	1222550381	155.4	64.96	84.13	304.5

Sources: Sampled companies annual reports (2001-2015)

4.2: Data Analysis

4.2.1 Descriptive Statistics

Descriptive statistics of dependent, independent and control variables of 40 sample companies are shown on table 4:2. The mean value of VAIC 3.26 indicates that sample companies are considerably effective in generating values from their intellectual base. The table further reveals that the three components of VAIC. That is

Table 4.2 Descriptive statistics of sampled companies

	Minimum	**Maximum**	**Mean N =40**	**SD (δ)**
VAIC	4.201000	9.969000	3.262557	2.141838
HCE	4.87000	3.307000	4.574135	8.133633
SCE	1.260000	6.496000	3.293180	1.654167
CEE	4280100	7.920000	1.862634	2.286310
ROA	7.070000	19.70400	0.140200	4.644494
ROE	2.573000	16.18200	0.666609	3.496472
ATO	0.650000	5.420100	1.65127	1.539158
ADMOPA	15.55000	5.200000	0.417120	1.361767
EMP	5.084697	2.310008	0.2386307	6.2728525
MB	3.680000	10.23000	0.831481	2.748146
LEV	1.478000	6.539000	3.334677	1.763257
PC	9.997704	9.997704	8.689929	2.539781
TA	6.610009	6.610009	7.290008	1.670009

Sources: Researcher's computation via E-view

HCE, SCE and CEE have respective mean values of 4.47, 3.29 and 1.86 respectively. From this it is apparent that the human capital is most effective in the matter of value creation than structural capital and capital employed during the study period.

The financial performance of sample companies is not too bad because the average profitability using ROA and ROE are 14% and 66% respectively while their ATO and M/B are 1.66% and 83% during this study period. Company process and employee productivity have 41% and 24%. From the above analysis it is obvious that economic performance of sample companies is sound.

4.3 Test of Hypotheses

The hypotheses formulated in chapter one are hereby tested.

Decision Rule: A variable is assumed to be significant consequently rejecting the null hypothesis if it's P=value is less than 5% significant level.

TA	4.560	7.490	0.606	1,087	0.5594
R-Square	0.6189				
Adjusted R^2	0.333				
F-Statics	2.165				
Prob (F-statics)	0.154				

Source: Researcher's Computation via E-view

Constant	1.635	1.484	1.101	1.087	0.3027
HCE	-0.223	0.585	0.379	1.432	0.714
SCE	-2.32	3.461	-0.671	2.653	0.5208
CEE	-0.053	0.237	-0.2257	2.097	0.8270
LEV	0.107	0.337	0.319	1.0231	0.757
PC	0.002	0.001	1.654	1.432	0.138
TA	-9.810	3.260	-0.301	1.876	0.770
R-Square	0.344				
Adjusted R^2	0.146				
F-Statics	0.702				
Prob (F-statics)	0.657				

Source: Researcher's Computation via E-view

The statistical result of model three are shown in the table 4.5A the results of the regression coefficients for explanatory variables (VAIC) and Asset turnover (ATO) ratio as dependent variable are presented here. Table 4.5A presents the results with VAIC and table 4.5B shows the result considering components of VAIC. From the statistical result it is seen that adjusted R2 is 0.04 in table 4.5A and 0.146 in table 4.5B. These numbers indicates that the model is able to explain 4% and 14% of the variance in both cases.

In addition VAIC has a positive (0.08) association but insignificantly affect ATO having a P-value of 0.69. Decomposing VAIC to single out intellectual capital since VAIC includes capital employed table 4.5B reveals that HCE has a positive association with ATO while SCE and CEE have negative effect on ATO. The two components of intellectual capital HCE and SCE negatively and insignificantly affect ATO.

Decision: Since the P-values of HCE and SCE are 0.7 and 0.52 which are greater than 5% significant level. Hypothesis three which states that intellectual capital does not significantly affects asset turnover (ATO) is hereby accepted.

Test of Hypothesis Four

HO_4: Intellectual capital does not significantly affect company process (ADM/OPA) of companies listed on Nigeria Stock Exchange.

Table 4.6A: Multiple Regression Result of VAIC and Company Process (ADM/OPA)

Variables	Beta Coefficients	Standard Error	T-Statistics	VIF	P-Value
Constant	17.40	5.19	0.335	1.043	0.745
VAIC	0.257	0.089	0.287	1.098	0.037
LEV	0.244	0.132	1.8422	1.654	0.095
PC	0.004	0.001	6.036	1.432	0.000
TA	1.530	1.38	1.107	1.320	0.2938
R-Square	0.806				
Adjusted R^2	0.729				
F-Statics	10.41				
Prob (F-statics)	0.001				

Source: Researcher's Computation via E-view

Table 4.6B: Multiple Regression Result of Components of VAIC and Company Process (ADM/OPA)

Variables	Beta Coefficients	Standard Error	T-Statistics	VIF	P-Value
Constant	-13.46	59.39	0.226	1.032	0.826
HCE	2.66	0.234	0.281	1.076	0.041
SCE	2.372	1.385	1.713	1.432	0.012
CEE	0.099	0.094	1.046	1.234	0.326
LEV	0.171	0.135	1.272	2.342	0.238
PC	0.004	0.001	6.3572	2.874	0.002
TA	1.250	1.30	0.958	1.324	0.366
R-Square	0.866				
Adjusted R^2	0.765				
F-Statics	8.618				
Prob (F-statics)	0.003				

Source: Researcher's Computation via E-view

The tables 4.6A indicate that VAIC explains 72.9% of the variance in administrative process proxy by ADM/OPA. While in table 4.6B a similar result is witness where 76.5% of the variance of ADM/OPA is explains or as a result of components of VAIC.

VAIC in table 4.6B has a positive association with ADM/OPA having 0.257 Beta co-efficient and significantly affects company process with a P-value of 0.037 which is less than 5% significant level.

Using table 4.6B to test our hypothesis four which states that intellectual capital does not significantly affects company process. It can be seen in the table that the components of intellectual capital HCE and SCE are positively associated with company process. This is because a unit naira change in HCE and SCE result to 2.66 and 2.37 change respectively in ADM/OPA. Both HCE and SCE significantly affect company process having a p-value of 0.041 and 0.012 respectively. The study result does not support the hypothesis four which states that intellectual capital does not significantly affect company process.

Decision:

Since P – values of HCE and SCE which make up intellectual capital in this study are 0.041 and 0.012 respectively are less than 0.05 significant level the null hypothesis which states that intellectual capital does not significantly affects company pr

F-statistics	0.141				
Prob(F-statistics)	0.985				

Source: Researcher's Computation Via E-View

The result of VAIC and log of employee productivity in table 4.7A shows that VAIC is negatively and insignificantly affects employee productivity.

Considering the components of Intellectual Capital HCE and SCE in table 4.7B. The result also corroborates the result in table 4.7A in that they all have negative effects and insig

Test of Hypothesis Six

HO_6: Intellectual capital does not significantly affect market to Book Value ratio (M/B) of companies listed on Nigeria Stock Exchange Market.

Table 4.8A: Multiple Regression Results of VAIC and Market to Book-Value (M/B)

Variable	**Beta coefficient**	**Standard Error**	**T-Statistics**	**VIF**	**P-value**
Constant	10.80	1.164	0.927	1.234	0.375
VAIC	0.0833	0.200	0.414	1.045	0.038
Lev	-0.080	0.296	-0.269	1.031	0.792
PC	0.009	0.002	5.40	1.026	0.000
TA	-8.360	3.090	-0.27	2.345	0.792
R- square	0.761				
Adjust R^2	0.665				
F-statistics	7.97				
Prob(F-statistics)	0.003				

Source: Researcher's Computation Via E-View

Table 4.8B: Multiple regression result of components of VAIC and market to Book value (M/B)

Variable	**Beta Coefficient**	**Standard Error**	**T-Statistics**	**VIF**	**P-value**
Constant	42.38	15.12	0.280	1.041	0.786
HCE	0.235	0.597	0.394	1.043	0.043
SCE	0.316	3.527	0.897	2.641	0.039
CEE	-0.011	0.241	-0.045	2.312	0.964
LEV	-0.219	0.344	-0.636	1.211	0.842

PC	0.009	0.001	5.088	1.321	0.000
TA	-8.260	3.320	-0.249	1.261	0.8096
R-square	0.786				
Adjust R^2	0.626				
F- statistics	4.915				
Prob(F-statistics)	0.021				

Source: Researcher's Computation Via E-View

The relationship between VAIC and market to Book-value Ratio (M/B) of the companies listed on Nigeria stock exchange reveals that VAIC explains 8% of the variance in the dependant variable (M/B). Having a P-value of 0.038 which is less than 5% significant level.

VAIC has its components HCE, SCE and CEE. In order to single out the effect of intellectual capital on M/B, HCE and SCE are considered in table 4.8B

HCE and SCE explains 23.5% and 31.6% respectively of the changes in market to Book value Ratios (M/B) and significantly affects M/B since their P-value are 0.043 and 0.039 respectively. This figures are less than 5% significant level and therefore disagrees with hypothesis six which states that intellectual capital does not significantly affect market to BOOK value M/B ratio

Decision:

Since the component of intellectual capital HCE and SCE has a P-value of 0.043 and 0.039 respectively which are less than 5% significant level. The hypothesis six which states that intellectual capital does not significantly affects market to BOOK-value ratio of companies listed on Nigeria Stock Exchange is hereby rejected and the alternate hypothesis accepted.

4.4 Discussion of Findings

Multiple regression technique has been applied to examine the effect of intellectual capital on performance of firms listed on Nigeria Stock Exchange during the period 2001-2015

Pulic (1998) Value Added Intellectual Coefficient (VAIC) model was applied in measuring the intellectual ability of sampled companies. Six hypotheses which dealt with intellectual capital effects on corporate performance proxy by ROA, ROE, ATO, ADM/OPA, Employees Productivity and Market to BOOK value ratio were formulated and tested.

The result of hypothesis one reveals that VAIC is positively correlated and significantly affect ROA Decomposing VAIC in order to single out the effect of intellectual capital on ROA the result on table 4.3B indicates that the three components of VAIC, HCE, SCE, and CEE all have positive and significant effect on ROA and led to the rejection of hypothesis one and the subsequent acceptance of the alternate hypothesis. This is an indication that intellectual capital and physical capital efficiencies play major roles in enhancing economic performance of firms and their efficient use reduces the production cost significantly. This findings is consistent with the findings of Chen etal (2005), Tan, Plowman and Hancork (2007) and Asgarri (2013) who all found a significant positive association between intellectual capital and ROA and inconsistent with the works of Firer and Williams (2003) who failed to find any relationship.

The result of hypothesis two which states that intellectual capital does not affect Return on equity of firms listed on Nigeria Stock Exchange is similar to the result of hypothesis one. It was also established that there is a statistical association between intellectual capital and ROE of firms listed on Nigeria Stock Exchange. The result on table 4.4A indicates that VAIC has an explanatory power of 22.7% and significantly affects ROE with P-value 0.043. This result is strongly corroborated by the elements of VAIC on table 4.4B HCE and SCE are all significant with 0.012 and 0.031 P-values indicating a significant effect on ROE. Capital Employed or

Physical Asset has a significant association with ROE. This means that investors also consider the impact of capital employed and intellectual capital in share price decision making. The result of this study reinforces conclusion from other study like Chan (2000), Ong et al (2011) and Zeghal and Maaloul (2010), which have supported that components of VAIC like CEE and SCE are found to be key factors in predicting business financial performance.

Hypothesis three which states that intellectual capital does not significantly affect Asset Turnover (ATO) of firms listed on Nigeria Stock Exchange was tested using model three and multi-regression result on table 4.5A and the decomposed VAIC on table 4.5B indicate that there is a positive association between VAIC and Assets Turnover (ATO) of these listed companies. The components of intellectual capital HCE and SCE have negative effect (-20% and -23% respectively) and does not significantly affects ATO. Having a P-value of 0.7 and 0.52 which is far higher than 5% level of significance. This consequently led to the acceptance of the null hypothesis. The result further reaffirms the position of Chan (2009a, 2009b) and Chu et al (2011) who asserted that intellectual capital does not significantly affect ATO but rather physical capital is the most significant factor affecting profitability, production, and market valuation of firms.

The finding of hypothesis four which states that intellectual capital does not significantly affect company's process (ADM/OPA) of firms listed on Nigeria Stock Exchange saw VAIC having explanatory power of 76.5% of the variance in ADM/OPA. This is reaffirmed in table 4.6B where VAIC is decomposed, indicates that HCE and SCE is having positive and significant effect on companies process having p-values of 0.041 and 0.012 respectively which are less than 5% significant values. This consequently led to the rejection of the null hypothesis which states that intellectual capital does not significantly affects companies process (ADM/OPA) of firms listed on Nigeria Stock Exchange Market. The findings complement the argument advanced by

Edvinson and Malone (1997) who posit that companies process measures by ADM/OPA will always enhance corporate performance.

In hypothesis five, Intellectual Capital was tested against log of employee productivity. No statistical association was established in using both VAIC and components of VAIC. HCE and SCE which are components of intellectual capital do not significantly affect log of Employee productivity (TR/EM). This led to the acceptance of the null hypothesis which states that intellectual capital does not significantly affect log of employee productivity. This findings is consistent with that of Diez etal (2010) who finds no significant relationship among human capital and structural capital with employee productivity and contradicts the study of Organization for Economic Corporation and Development (2006) who enthuses that intellectual capital has played a significant role as much as tangible capital in improving labour productivity in use from 1995 to 2003.

Finally, hypothesis six which states that intellectual capital does not significantly affects market to Book value of companies was tested and analyzed.

The result of the analysis indicates that there was a week positive correction between VAIC and M/B ratio using the decomposed element of VAIC, HCE and SCE has explanatory powers of 23.5% and 31.6% respectively and significantly affect this market to Book –value ratio having a P-value of 0.043 and 0.039 respectively. This led to the rejection of the sixth hypothesis which states that intellectual capital does not significantly affect market to BOOK value of firms listed on Nigeria Stock Exchange Market. Hence the acceptance of the alternate hypothesis. The regression result also show that out of the major resources bases, intellectual capital and physical capital only the former significantly and positively associated with the measure of shareholders

value creation. That is market to Book Value ratio. It can obviously be seen that intellectual capital of firms listed on Nigeria Stock Exchange is vital for taking investment decision.

The findings of this test of hypothesis six re-affirms the position of Tseng and Goo (2005), Wang (2008) and Naji (2005) who contend that intellectual capital affects significantly market to Book value ratio of firms and contradicts the views of Simologhu (2006) and Ghorbari, Shahagy, Mosavi and Anvari (2010) who established no statistical association between intellectual capital and market to Book value ratio.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Summary of Findings

The focus of this chapter is to discuss the findings, conclusion arrived in the study and make recommendations based on research objectives and the empirical findings on chapter four

The corporate performance of the sampled companies were examined in three dimensions namely, financial performance measured by three proxy indicators. Return on Assets (ROA) return on equity (ROE) and Asset Turnover (ATO) and Employee Productivity was measured using Asset Turnover over number of employees and company process measured by administrative Expenses over operating Assess, while market valuation was measured using Market to Book value ratio (M/B). From the descriptive statistics the economic performance of companies listed on Nigeria Stock Exchange Market is sound and Variance Inflation Factors (VIFs) are used to test multicolinearity in this study. None of the VIF scores is more than the accepted threshold of 5 which suggest that multicolinearity is not a serious problem in this study.

The findings of the study are summarized as follo

(1) This study finds out that there is no significant effect of intellectual capital on Asset Turnover (ATO) of companies on Nigeria Stock Exchange.

(2) Intellectual capital positively and significantly affects companies processes of firms listed on Nigeria Stock Exchange as discovered in the analysis of hypothesis four.

(3) Finally, the study finds out that intellectual capital positively and significantly affect Market to book Value ratio of Nigerian listed companies between 2001 – 2015.

5.2 Policy Implication of Findings

Several implications can be drawn from the findings for industry captains as well as policy makers in government of Nigeria and development nations as well.

(1) The government of Nigeria should realize that for Nigeria to attain the desired vision of being one of the strongest twenty economics of the world, the must be a radical transformation and development of intellectual capital base. Strong Nations of the world such as United States of America (USA) Japan and China attained such feats because of their level of investment and development of their intellectual capital base.

(2) Education: Human capital is critical for the success of firms in all industry. These findings do not only call for a review of the training and educational upliftment in companies where they fell short but also calls for a review of the educational policies and standards to encourage public. Private partnership in training of high quality human capital. Beyond having adequate high quality human capital, human capital becomes ineffective if it operates in poorly resourced environment (Bontis, 2002).

(3) Another policy implication of these findings is that stock market in Nigeria needs complementary reports on intellectual capital since information on intellectual capital are not yet included in annual financial reports of companies in Nigeria and in most countries in the world.

5.3 Conclusion

The use of information and information technology in business management has led to the rise of knowledge economics. In this new economy, knowledge intensive companies have gained competitive advantages over others. Intellectual capital is considered as the main value driver and plays an important role in enhancing corporate performance.

The study finds out that besides the use of traditional indices, intellectual capital can also be used to evaluate firms performance. The rise of intellectual capital is inevitable, given the technological focuses that are sweeping across the globe. Intellectual capital will soon dominate the methods of appraising companies performance and valuation, because it captures the dynamics of organizational sustainability and recognizes that in modern companies everything is dependent on talents, dedication of staff (human capital) and quality of tools (structural capital) as evidenced in the results of the analysis which indicated that both HCE and SCE showed a significant and positive effect on corporate performance.

5.4 Recommendations

Considering the findings of this research work it becomes obvious despite the fact that companies and share holders focus on the physical assets in their financial statements, to the exclusion of the more important assets the intellectual assets on corporate performance analysis. Based on the study findings the following recommendations are made.

(1) The positive and significant effect of intellectual capital on Return on Assets (ROA) and Return on Equity (ROE) indicates that companies listed on Nigeria Stock Exchange can enhance their profitability by effectively managing their intellectual capital. Hence companies should emphasize on effective management of their intellectual assets for a firms competitive capability is in good stead when its intellectual capital is enhanced to drive its growth and profitability. This can be achieved by determining the mixture of human capital and structural capital asset in order to increase managerial ability to leverage the companies intellectual assets.

(2) It was established in this study that there was no positive and significant effect of intellectual capital on assets turn over and employee productivity. This indicates that

most of the firms like in the manufacturing and construction sector use more of physical assets than intellectual capital in their operations. This study then recommends that such companies or firms should endeavour to increase the expertise of their work force through training and development programmes locally and if possible overseas as manufacturing firms need intellectual capital to strengthen competitive positions.

(3) Intellectual capital has a significant effect on company process. Company process includes the totality of the internal operations of the company undertaken to meet customer's expectations and the technology use in value creation. This demonstrate the fact that intellectual capital is an invaluable asset that can be utilized as veritable tool for improving corporate performance and sharpen its competitive edge. The study therefore recommends that corporate management should endeavour to provide adequate and conducive working environment, good welfare package, reviewing their personnel performance and engaging on regular training and development programmes. This will automatically increase efficiency.

(4) The increasing gap between a company's markets to book values indicated that investors perceive intellectual capital as a source of value for companies. Shareholders should place higher values on companies with greater intellectual capital for this is the hidden value driver that propel companies to superlative performance and achieve sustainable growth.

(5) Finally all listed companies on Nigeria Stock Exchange Market must comply with the preparation of Simplified Investors Summary Accounts (SISA) with emphasis on intellectual capital report or attached a supplementary report on intellectual capital just as the Swedish financial service organization Skandia AFS has been doing since 1994. (Luthy, 1998).

5.5 Contribution to Knowledge

An important dimension of every research work is how such work contributes to the body of knowledge.

(1) Intellectual capital research in Nigeria is at its threshold. To the best of my knowledge. Very few studies have been undertaken to examine the influence of intellectual capital on financial performance but remain confirmed to a particular industry or sector and for a short period of time.

This study contributes to knowledge by studying all the sectors and firms on the Nigeria Stock Exchange using a more representative sample of firms from a variety of sectors.

(2) This study has also introduced a new variable: company process proxy by **Administrative Expenses**
Operating Assets

Added to existing literature used for measurement of corporate financial performance to the best of my knowledge none of the studies in Nigeria have used this variable

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APPENDICES

APPENDIX 1

(2001) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM /OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.077	0.276	0.04	0.3	NA	NA	NA	1	2808654	0.337	1.900	0.063	2.395
	2.	Chellerams	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Conglomerate	3.	John Holt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4.	Scoa Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5.	JACN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Consumer	7.	7 Up Bottling	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Goods	8.	Cao Bury Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9.	Guinness Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10.s	Nestle Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11.S	Nigeria Brew.	0.225	0.18	2.4	NA	NA	1.5	0.145	0.308	49504000	1.206	0.1708	0.243	1.61
	12.s	Unilever	NA	NA	1.79	NA	NA	2.05	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Financial	13.s	Diamond Bank	0.023	2.122	0.091	0.2	4011	0075	0.84	0.12	8	2.39	0.576	NA	3.656
	14.s	Eco Bank Plc	0.561	7.62	2.7	0.41	7293	2.52	0.83	10.52	1276	3.56	0.89	NA	7.87

CONTINUATION OF (2001) SAMPLED COMPANIES AND THEIR VARIABLES

	15. s	UBA Plc	8.84	26.22	9.64	0.93	4275	0.291	0.84	6.68	966	4.78	0.56	NA	6.16
	16. s	Union Bank	0.023	0.37	16.4	0.51	660	5.931	4.33	0.94	1647	2.39	2.992	NA	5.97
	17. s	Zenith Bank	0.040	0.36	17.5	0.31	690	NA	0.89	3.57	1499	7.23	2.736	NA	10.828
	18.	First Bank	0.022	0.28	13.67	1.35	6673	2.547	0.92	0.92	1367	2.64	0.647	NA	5.785
TOTAL															
Insurance	19. d	Consolidated													
		Hallmark	NA	NA	NA	NA	3.71	NA	NA	NA	NA	NA	NA	NA	NA
	20.	Alico Ins.	NA	NA	NA	NA	0.70	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Pharmaceutical	21. a	May/Barker	NA	NA	NA	NA	NA	3.71	NA	NA	NA	NA	NA	NA	NA
	22.	Nelmeth	NA	NA	0.13	NA	NA	0.70	NA	NA	NA	NA	NA	NA	NA
TOTAL															
ICT	23. a	Cham Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	24.	Tipple G	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
								787							
TOTAL															

CONTINUATION OF (2001) SAMPLED COMPANIES AND THEIR VARIABLES

Industrial	25.s	Ashaka Cement	56.9	92.8	NA	NA	1728	1.85	6	30.87	49	22.4	0.905	8.8	32.108
Goods	26.s	Berger Paints	8.02	8.02	NA	NA	1319	0.962	21.9	28.2	4100	1.20	0.21	1.568	2.978
	27.s	Beta Glass	NA	NA	NA	NA	NA	0.38	NA	NA	NA	NA	NA	NA	NA
	28.s	Cutix plc	NA	NA	0.6	NA	NA	0.625	NA	NA	NA	NA	NA	NA	NA
	29.s	D.N. Meyer	32.8	43	NA	NA	3344	0.66	NA	48.74	3180	2.25	0.666	5.6	8.516
	30.s	First Alluminum	11.52	11.52	2.8	6.2	6398	0.73	2007	1	1562	4	6.76	7.69	18.45
	31.	Premier Paints	74.8	24.8	0.27	0.81	3186	1.25	NA	NA	5390	2.1	0.57	1.3	3.97
TOTAL															
Oil and Gas	32.s	Eterna Plc	0.06	20.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	33.s	Japaul Oil	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	34.s	Mobil Nigeria	104	0.17	0.14	NA	2530	3.00	75.52	NA	14.3	1.2	1.1	6.2	8.5
	35.s	Oando Plc	2.07	17.74	3.76	0.33	8815	NA	11.2	98.79	6.69	3.1	0.69	5.3	9.09
	36.s	Total Plc	NA	1.28	1.3	NA	NA	0.64	21.04	41.36	8222	4	0.9	4.2	9.1
	37.	Cli Leasing	NA	NA	1.3	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General	38.s	Daar Com	NA	NA	NA	NA	0.64	NA	NA	NA	NA	NA	NA	NA	NA
Service	39.s	R.T. Brisco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	1.59	NA	NA	NA	0.55	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL			301.5	257.3	84.5	15.55	50846.97	37.29	165.1	272.9	52341941	64.63	16.11	42.801	137.4

Sources: 2001 Annual Reports of Sampled Companies

(2002) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/ OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.049	0.61	0.43	2.1	3423	0.246	NA	1	3159554	0.514	0.938	0.126	1.578
	2.	Chellerams	0.034	051	3.95	0.41	8970	1.56	0.016	0549	905529	NA	1.00	0.077	0.077
TOTAL															
Conglomerate	3.	John Holt	0.068	0.917	0.42	0.1	24	0.375	NA	1	2632	NA	NA	NA	NA
	4.	Scoa Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5.	UACN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Consumer	7.	7 Up Bottling	0.58	1.02	0.41	0.61	2606	4.21	0.12	0.75	2858686	NA	NA	NA	NA
Goods	8.	Cao Bury Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9.	Guinness Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.475	0.7122	NA	4.187
	10.s	Nestle Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11.s	Nigeria Brew.	0.202	0348	1.93	NA	NA	1.6	0.0201	0.5301	68829000	1.314	0.239	0.1882	1.741
	12.h	Unilever	NA	05	NA	NA	NA	0.64	NA	NA	NA	1.24	0.34	0.19	1.77
TOTAL		.													
Financial	13.s	Diamond Bank	0.021	0.129	0.08	0.1	4011	6.6	0.82	0.16	8	3.23	0.733	0.066	4.029
	14.s	Eco Bank Plc	0.431	6.85	14.8	0.91	7812	2.5	0.84	8.88	1487	3.62	0.88	3.56	8.06
	15.s	UBA Plc	7.96	21.68	9.56	0.21	4288	0.152.2.	0.85	6.65	956	5.66	0.64	0.51	6.81

CONTINUATION OF (2002) SAMPLED COMPANIES AND THEIR VARIABLES

	16.s	Union Bank	0.017	0.16	11.57	0.62	669	069	0.82	3.76	1157	2.61	0.617	2.203	5.430
	17.s	Zenith Bank	0.035	0.35	14.99	0.75	697	1.7	0.90	3.63	13.09	5.61	0.806	2.573	8.539
	18.	First Bank	0.015	0.23	15.67	0.61	6803	2.67	0.93	2.94	1566	2.55	0.008	2.045	5.20
TOTAL															
Insurance	19.s	Consolidated													
	20.	Hallmark	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Alico Ins.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Pharmaceutical	21.a	May/Barker	10.8	87	5.23	0.91	5200	7.1	0.14	42	7120	8.2	0.6	10.53	19.33
	22.	Nelmeth	15.81	40	0.66	0.51	3217	NA	3.24	17.09	1416	3.92	2.183	7.1	13.203
TOTAL															
ICT	23.a	Chams Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	24.	Tipple G	NA	NA	NA	NA	NA	2.9	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Industrial	25.s	AshaIIa Cement	35.2	9.28	2.4	0.41	1745	0.687	4.93	26	5900	22.13	0.939	9.059	32.12
Goods	26.s	Berger Paints	11.04	17.0	3.1	0.41	1657	NA	4.36	32.8	4100	1.16	6.142	1.74	4.042
	27.s	Beta Glass	20.6	44.4	3.1	0.3	8166	1.03	12.40	85.4	4900	5.8	0.669	5.73	12.199
	28.s	Cutix Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	29.s	D.N. Meyer	37.7	15.2	3.29	4.1	4229	0.5	NA	78.38	3470	2.3	0.779	49	7.97
	30.s	First Alluminum	1786	17.86	2.67	0.62	7614	06	8.8	NA	1534	4	0.75’	10.45	15.2
	31.	Premier Paints	2.36	26.10	0.31	0.71	3454	1.22	NA	1	4780	2	0.50	16.72	19.22

CONTINUATION OF (2002) SAMPLED COMPANIES AND THEIR VARIABLES

TOTAL															
Oil and Gas	32.s	Eternal Plc	5.03	3496	NA	NA	1818	NA	33.9	88.5	8111	NA	NA	NA	NA
	33.s	Japaul Oil	NA	NA	NA	NA	NA	2.938	NA	NA	NA	NA	NA	NA	NA
	34.s	Mobil Nigeria	72.36	14.86	0.20	0.42	4061	0.20	70.39	NA	152	4	2.1	10.5	16.6
	35.s	Oando Plc	16.76	0.20	NA	87.9	1089	NA	41.4	91.46	1.222	3	3.2	8.3	14.5
	36.s	Total Plc	12.5	NA	1.25	0.42	10438	NA	24.29	3.31	8150	2	4.2	2.4	8.6
	37.	Oli Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General Service	38.s	Daar Com	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	39.s	R.T. Brisco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL			101.65	340.164	96.2	103.13	91991	40.95	209.166	3.31	75810222.31	211.093	48.62	143.06	347.2

Sources: 2002 Annual Reports of Sampled Companies

(2003) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	AD/OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.115	0.50	0.65	1.2	5320	1.6	NA	0.987	3267855	0.536	0.866	0.065	1.48
	2.	Chellerams	0.049	0.506	0.49	0.21	1.1632	1.09	0.72	0.79	932378	NA	1.000	1.0176	1.0176
TOTAL															
Conglomerate	3.	John Holt	NA	NA	1.3	0.07	26	0.453	NA	1.00	2868	NA	NA	NA	1.00
	4.	Scoa Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5.	UACN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Consumer	7.	7 Up Bottling	0.45	0.69	0.32	1.31	3131	0.42	0.11	91.9	4372682	0.013	NA	0.31	0.323
Goods	8.	Cao Bury Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9.	Guinness Nig Plc	0.369	0.1689	1.14	3.1	28533	3.6	NA	0.598	26.771	2.401	0.585	0.359	3.344
	10.s	Nestle Nig. Plc	0.120	0.00957	NA	NA	NA	NA	0.064	NA	3558000	1.226	0.1843	NA	1.410
	11.s	Nigeria Brew.	0.1533	0.2805	0.89	1.8	20933	62.5	0.153	0.58800	85097000	1.182	1.1532	0.1389	1.474
	12.h	Unilever	NA	NA	0.54	3.1	NA	NA	NA	NA	NA	1.21	0.32	0.14	1.67
TOTAL															
Financial	13.s	Diamond Bank	0.019	0.101	0.06	0.61	3862	0.57	0.87	0.14	1	3.78	0.746	0.083	4.609
	14.s	Eco Bank Plc	0.045	6.41	17.8	0.32	7832	1.9	0.87	8.86	1292	2.98	0.67	3.32	6.97

CONTINUATION OF (2003) SAMPLED COMPANIES AND THEIR VARIABLES

	15.s	UBA Plc	8.55	20.66	9.62	6.54	4381	0.282	0.87	5,83	962	6.38	0.66	0.52	7.56
	16.s	Union Bank	0.020	0.20	10.53	0.91	666	1.845	0.90	3.40	1053	2.88	0.653	2.365	5.56
	17.s	Zenith Bank	0.039	0.35	13.09	0.92	705	0.23	0.89	4.97	1556	3.92	0745	2.133	6.798
	18.	First Bank	0.032	0.41	14.06	2.5	6845	2.08	0.92	2.69	1405	3.39	0.705	3.231	7.326
TOTAL															
Insurance	19.f	Consolidated													
		Hallmark	0.075	0.068	0.81	0.42	1.963	0.807	0.53	NA	NA	5.3	1.00	2.3	8.6
	20.	Alico Ins.	NA	NA	3.6	0.51	NA	0.704	NA	NA	NA	NA	NA	0.73	5.028
TOTAL															
Pharmaceutical	21.a	May/Barker	17	14.8	5.2	0.91	7265	0.96	1.8	41.7	7610	8.79	1.4	1.89	12.08
	22.	Nelmeth	18	37.5	0.66	0.55	3450	297	3.13	1.43	1435	4.7	0.14	9.58	14.42
TOTAL															
ICT	23.a	Cham Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	24.	Tipple GCE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Industrial Goods	25.s	Ashaka Cement	48.23	7.14	6.3	0.82	2038	NA	4.8	1.875	6500	22.23	0.938	7.57	30.738
	26.s	Berger Paints	12.03	23.1	2.1	0.61	1925	0.962	7.58	30.84	5100	1.5	0.355	0.88	2.7378
	27.s	Beta Glass	12.77	12.77	2.1	0.41	8766	0.38	12.06	88.3	6100	3.94	0.701	5.73	10.371
	28.s	Cutix Plic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	29.s	D.N. Meyer	30.48	16.25	4.2	3.1	5555	0.66	NA	78.63	3510	1.9	0.571	5.9	8.371
	30.s	First Aluminum	12.26	37.5	2.54	0.94	1271	0.73	NA	60.89	NA	4	0.75	10.45	15.2
	31.	Premier Paints	1.7	15.83	0.51	0.62	5673	1.25	NA	1	4462	1.25	0.2	22.42	23.87
TOTAL															

CONTINUATION OF (2003) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	13.1	31.6	NA	NA	1000	0.638	146	1.00	3610	1.5	0.3	10.5	12.3
	33.s	Japaul Oil	17.72	9.253	0.83	0.41	3479	NA	NA	-1	5238	2.6	0.4	6.8	9.8
	34.s	Mobil Nigeria	1.2	28.3	0.21	0.63	3479	3.00	54.82	54.82	1740	3.4	0.51	9.3	13.21
	35.s	Oando Plc	4.54	34.7	5.08	0.6	1465	7.36	10.98	10.98	12471	1.5	1.2	8.4	11.1
	36.s	Total Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	37.	Cli Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General Service	38.s	Daar Com	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	39.s	R.T. Brusco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL			154.28	583.44	104.2	33.12	1263 32.1	96.99	248.06	577.63	9729485 4.77	123.08	15.599	108.32	246.92

Sources: 2003 Annual Reports of Sampled Companies

(2004) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/ OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0..77	0.425	0.68	0.92	5256	0.246	0.077	0.177	3412306	4.617	0.783	3.5	8.9
	2.	Chellerams	0.063	0.84	0.46	0.31	11632	1.56	0.035	0.805	1335186		1.000	0.5	1.5
TOTAL															
Conglomerate	3.	John Holt	0.0111	0.358	0.26	1.2	36	0.35	NA	0.553	6280	NA	1.000	0.008	1.008
	4.	Scoa Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5.	UACN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Consumer	7.	7 Up Bottling	0.23	0.26	2.54	1.21	3319	4.21	0.030	0.85	5861806	0.153	0.46	0.195	0.798
Goods	8.	Cad Bury Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9.	Guinness Nig Plc	0.322	0.198	1.24	1.21	35615	1.95	0.021	0.685	36121000	4069	0.754	0.449	95.27
	10.s	Nestle Nig. Plc	0.055	0.0076	NA	NA	NA	4.92	0.064	NA	35580000	1.1775	0.1507	NA	1.328
	11.s	Nigeria Brew.	0.714	0.18	0.89	1.87	24531	1.68	0.0207	0.6596	82543000	1.126	0.1122	0.136	1.374
	12.h	Unilever	0.363	1.962	3.50	0.31	9533	NA	0.256	0.757	8163000	0.34	0.51	0.21	1.06
TOTAL															
Financial	13.s	Diamond Bank	0.018	0.016	0.06	0.061	3905	6.67	0.76	0.13	6	365	0.778	0.064	4.492
	14.s	Eco Bank Plc	0.036	6.36	17.8	0.62	7682	1.73	0.88	14.57	1780	2.92	0.68	2.45	6.05
	15.s	UBA Plc	8.58	19.65	10.43	3.1	4366	0.260	0.86	5.16	1043	4.85	0.65	0.54	6.04

CONTINUATION OF (2004) SAMPLED COMPANIES AND THEIR VARIABLES

	16.s	Union Bank	0.021	6.22	10.65	0.21	72	2.537	0.90	3.37	1065	2.49	0.598	2.355	j5.443
	17.s	Zenith Bank	0.027	0.33	15.8	0.92	704	0.251	0.61	4.90	1235	3.65	0.728	1.670	6.046
	18.	First Bank	0036	6.29	14.4	1.3	605	0.38	0.88	3.06	1444	2.74	0.635	3.325	6.700
TOTAL															
Insurance	19.	Consolidated Hallmark	0.51	0,.068	0.81	0.42	1576	0.48	0.33	0.56	2.550	1.11	1.05	6.98	3.14
	20.	Alico Ins.	NA	NA	4.2	0.41	NA	NA	NA	NA	NA	4.59	1.29	6.46	12.34
TOTAL															
Pharmaceutical	21.a	May/Barker	137	1.4	4.1	0.81	7755	0.17	22	32.8	9180	9.6	1.2	1.68	12.48
	22.	Nelmeth	15.23	50	0.59	0.41	3600	1.08	31.16	14.4	1707	4,96	0.161	11.92	17.04
TOTAL															
ICT	23.a	Chams Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	24.	Tipple GCE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Industrial	25.s	Ashaka Cementt P	76.315	10.95	4.2	0.61	2516	0.84	7.27	32.68	7600	22.01	0.955	6.37	29.33
Goods	26.s	Berger Paints	10.8	16.6	3.1	0.31	2368	1.73	10.88	32.85	6100	2.23	0.552	1.64	4.422
	27.s	Beta Glass	3.5	98.67	8.1	0.63	9988	9.3	11.82	89.38	6300	0.536	0.67	4.14	5.346
	28.s	Cutix Plic	NA	NA	NA	NA	NA	0.67	NA	NA	NA	NA	NA	NA	NA
	29.s	D.N. Meyer	33.68	13.2	4.5	2.1	6494	1.318	NA	71.54	3830	3.85	0.518	7.08	11.44
	30.s	First Alluminum	3.16	28.7	2.55	1.31	3230	0.391	1.72	73	2500	4.5	7..86	9.2	21.56
	31.	Premier Paints	65.2	0.35	0.5	0.51	2910	0.381	NA	72	540	4.4	4.69	23.6	25.69
TOTAL															

CONTINUATION OF (2004) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	41.76	11.4	NA	NA	3600	NA	7.62	99.6	3280	4.6	0.9	8.7	14.2
	33.s	Japaul Oil	6.7	6.51	0.38	0.21	2740	0.25	NA	3.984	1593	2.5	0.8	9.4	12,7
	34.s	Mobil Nigeria	32.01	20.8	7.50	0.71	4750	7.43	4.25	83.9	NA	3.4	0.7l	10.2	44.9
	35.s	Oando Plc	1.11	0.05	6.75	0.31	1716	6.13	10.2	89.88	1270	1.6	0.4	6.2	8.2
	36.s	Total Plc	69.65	2.6	15.1	0.52	1991	0.25	34.98	1.00	6460	1.2	0.3	4.8	6,3
	37.	Cli Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL															
General Service	38.s	Daar Com	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	39.s	R.T. Brsico	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL			372.2	407.2	141.05	22.51	162490	56.392	147.8	733.25	1410600 61	102.74	30.89	133.76	267.397

Sources: 2004 Annual Reports of Sampled Companies

(2005) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	AD/OPS	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.091	0.068	0.63	0.43	6194	0.126	0.089	0.899	3718240	4.66	0.785	0.245	5.689
	2.	Chellerams	0.075	0.123	5.5	0.4	18939	0.812	0.045	0.077	1479471	1.876	0.886	0.359	2.321
TOTAL															
Conglomerate	3.	John Holt	NA	NA	0.17	0.71	20	0.113	0.0348	0.5470	5341	NA	1.50	0.074	1.074
	4.	Scoa Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5.	UACN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Consumer	7.	7 Up Bottling	0.18	0.74	0.23	0.26	3819	0.12	0.095	0.021	7282981	0.128	0.35	0.131	0.609
Goods	8.	Cad Bury Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9.	Guinness Nig Plc	0.2087	0.106	1.53	0.51	35228	2.40	0.1234	0.970	30064000	2.57	6.611	0.342	3.523
	10.s	Nestle Nig. Plc	NA	1.48	NA	NA	NA	10.58	NA	NA	NA	1.00	NA	NA	1.00
	11.s	Nigeria Brew.	0.21	1.2	2.1	0.09	26745	37.9	0.018	0.694	75505000	1.289	0.224	0.17	1.683
	12.h	Unilever	0.26	0.4	3.95	0.62	1113	0.93	0.344	0.899	8498000	6.63	0.41	9.4	10.44
TOTAL															
Financial	13.s	Diamond Bank	0.204	0.122	0.1	0.51	4090	0.620	0.83	0.13	1	3.09	0.676	0.085	3.857
	14.s	Eco Bank Plc	0.025	6.24	13.75	0.51	6933	0.707	0.60	6.63	1375	2.97	0.67	2.23	5.87
	15.s	UBA Plc	7.54	26.74	10.3	0.71	4285	0.313	0.93	4.15	1030	2.64	0.76	0.56	4.96

CONTINUATION OF (2005) SAMPLED COMPANIES AND THEIR VARIABLES

	16.s	Union Bank	0.024	0.24	11,25	14.31	683	5.235	0.90	3.64	1125	3.08	0.675	2.698	\6.453
	17.s	Zenith Bank	0.022	0.19	12.31	0.62	712	0.297	0.89	3.96	1049	3.86	0.741	1.161	5.762
	18.	First Bank	0.032	6.28	13.11	2,4	6868	2.080	0.88	3.21	1311	2.92	0.657	2.902	6.479
TOTAL															
Insurance	19.a	Consolidated Hallmark	0.46	6.99	0.62	0.31	2770	0.282	0.95	0.072	6300	0.03	0.06	0.9	0.99
	20.	Alico Ins.	26.99	8.4	3.1	0.38	9700	6.421	29.39	28.57	1078	3.12	0.194	0.95	4.262
TOTAL															
Pharmaceutical	21.a	May/Barker	11.82	14.2	3.6	0.71	8146	0.42	4.5	244	1320	6.65	0.5	0.98	8.13
	22.	Nelmeth	22.34	3.4	0.87	0.83	4435	0.128	33.26	19.29	1410	3.1	0.175	8.77	12.04
TOTAL															
ICT	23.a	Cham Plc	16.06	24.1	0.39	0.71	1995	NA	NA	60.9	1500	5.1	0.81	5.93	11.84
	24.	Tipple G	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Industrial	25.s	Ashaka Cement P	73.8	88.7	3.1	0.71	3162	1.4	8.3	46.32	8800	20.1	0.9508	5.6	26.6
Goods	26.s	Berger Paints	12.9	23	8.4	0.72	NA	1.76	6.01	33.38	7100	1.86	0.464	0.788	3.11
	27.s	Beta Glass	2.3	34.45	0.9	0.81	9650	1.03	13.37	89.37	6400	10	0.687	3.33	14.017
	28.s	Cutix Plc	0.0354	8.3	3.7	0.61	2870	NA	NA	52.25	1550	19.5	0.048	6.8	26.348
	29.s	D.N. Meyer	-52	7.43	8	3.1	4974	1.936	NA	14.67	1710	2.87	0.911	16.9	20.681
	30.s	First Alluminum	7.5	31.25	3.11	1.21	1250	0.809	7.3	41.42	2600	3.92	0.75	9.23	13.91
	31.	Premier Paints	2.32	7.82	0.41	0.12	253	0.145	NA	6.41	603	1.4		5.2	7.288
TOTAL															

CONTINUATION OF (2005) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	50.66	91.6	0.11	0.81	2800	11.36	5.97	73.96	4520	1.4	0.1	NA	1.5
	33.s	Japaul Oil	16.2	79.2	0.99	0.42	6307	0.37	NA	96.17	7590	3.9	0.62	4.2	8.72
	34.s	Mobil Nigeria	55.52	8.34	0.91	10.6	51.01	12	3.79	96.93	6100	16.2	0.63	3.4	20.23
	35.s	Oando Plc	16.68	0.91	7.65	0.14	4219	10.38	13.67	5265	2600	1.4	0.54	3.4	7.34
	36.s	Total Plc	6.2	28.81	14.37	0.41	2656	30.64	25.83	1000	7.74	5.6	0.53	3.6	9.73
	37.	Oli Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General Service	38.s	Daar Com	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	39.s	R.T. Brisco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	NA	1.68	3.41	0.41	46.24	8.6	NA	49.9	6011	3.4	6.3	1.2	10.9
TOTAL			278.4	512.4	320.9	115.38	9691 1261. 25	632.6	159.06	7024.8	7294914 7	158.8 6	37.138	85.02	281.01

Sources: 2005 Annual Reports of Sampled Companies

(2006) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	AD/OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2.	Chellerams	0.043	0.50	4.4	0.8	2064792	0.109	0.065	0.92	2096991	NA	4.00	0.0295	4.029
TOTAL															
Conglomerate	3.	John Holt	NA	NA	0.19	0.56	26	0.78	0.0347	0.582	6067	NA	1.00	0.0164	1.0164
	4.	Scoa Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5.	UACN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	A
TOTAL															
Construction	6.	Julius Berger	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL													‘		
Consumer	7.	7 Up Bottling	0.19	0.83	4.27	0.27	4713	1.71	0.01	0.094/	8571258	0.156	0.220	1.36	1.736
Goods	8.	Cad Bury Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9.	Guinness Nig Plc	0.2615	6.31	1.4	3,1	4027	4.4	0.041	0.669	4497200	6.21	0.8389	0.641	7.689
	10.s	Nestle Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.00	NA	NA	1.00
	11.s	Nigeria Brew.	0.341	1.44	1.44	0.93	2877	16.8	1.83	0.99	49700	6.24	0.7419	1.25	8.23
	12.h	Unilever	NA	NA	0.76	0.71	8533	7.46		0.55	7773	1.32	0.65	7.31	9.28
TOTAL															
Financial	13.s	Diamond Bank	0.015	0.011	0.06	0.41	4027	0.341	0.86	0.13	18	2.38	0.79	0.052	3.011
	14.s	Eco Bank Plc	0.027	12.14	13.07	0.42	6921	0.41	0.78	8.06	13.07	2.91	0.66	2.03	5.60
	15.s	UBA Plc	2.66	18.46	10.87	7.36	4294	0.178	0.94	7.62	1011	2.65	0.62	0.53	3.80

CONTINUATION OF (2006) SAMPLED COMPANIES AND THEIR VARIABLES

	16.s	Union Bank	0.019	0.11	9.63	0.27	6.86	2.613	0.83	3.98	980	2.58	0.612	1.679	4.871
	17.s	Zenith Bank	0.019	0.12	10.35	0.36	717	0.366	0.84	5.27	953	4.05	0.753	1.187	5.990
	18.	First Bank	0.030	0.23	11.34	1,41	6939	3.179	0.89	2.58	1134	2.93	0.658	3.109	6.697
TOTAL															
Insurance	19.s	Consolidated													
	20.	Hallmark	0.76	0.27	0.37	0.63	1273	NA	0.13	1.44	1440	2.1	1.3	0.02	3.42
		Alico Ins.	1.9	0.9	0.91	-11.0	8.666	0.68	1	8.98	1872	1.83	0.137	0.392	2.359
TOTAL															
Pharmaceutical	21.a	May/Barker	NA	76	4.27	0.62	NA	0.43	NA	3.1	2.990	8.8	0.5	1.07	10.37
	22.	Nelmeth	6.7	37.9	0.65	0.72	4295	0.136	10.45	2.61	1836	2.85	2.85	5.99	11.69
TOTAL															
ICT	23.a	Cham Plc	43	33	1.42	0.58	3490	3.346	NA	7.5	700	5.1	0.810	3.93	11.84
	24.	Tipple GCE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA
TOTAL															
Industrial	25.s	AshaKa Cementt	26.88	26.8	4.6	0.62	3357	4.6	5.0	14.41	1847	20.5	0.958	4.8	26.25
Goods	26.s	Berger Paints	NA	24	3.6	0.91	2777	0.1819	NA	62.78	3861	2.86	0.615	0.474	3.949
	27.s	Beta Glass	7.02	21.7	2.1	0.41	1283	092	11.6	88.26	7020	10	0.875	2.51	13.38
	28.s	Cultix Plc	0.043	60.6	0.20	0.71	3570	0.79	NA	41.20	1820	2.44	0.409	10.22	13.067
	29.s	D.N. Meyer	5.54	37.19	0.21	NA	2008	0.431	NA	NA	NA	2.4	0.677	1.15	4.227
	30.s	First Alluminum	1.2	1.3	3.32	0.71	1319	0.33	7.076	95.2	2500	3.93	0.735	9.23	13.89
	31.	Premier Paints	NA	NA	0.22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															

CONTINUATION OF (2006) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	7.44	12.8	0.69	0.61	7000	0.45	70.40	72.09	430	3.9	0.7	9.2	13.8
	33.s	Japaul Oil	16.78	41.16	0.41	0.2	9936	0.45	21.70	88.8	1411	2.6	0.52	6.2	9,32
	34.s	Mobil Nigeria	14.53	14.3	7.15	0.02	8184	12.9	NA	44.4	17411	12.1	0.31	3.41	15.82
	35.s	Oando Plc	13.53	1.325	7.65	0.83	4826	8.03	8.06	51.39	2800	15.6	0.42	3.62	19.64
	36.s	Total Plc	36.36	1.873	10.08	1.00	2651	6.84	30.11	99.17	1000	2.6	0.61	4.2	2.41
	37.	Cli Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General Service	38.s	Daar Com	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	39.s	R.T. Brisco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	35.9	2.8	0.31	5.977	NA	NA	51.06	9400	1.6	0.32	4.1	NA	6.02
TOTAL			223.57	982.97	444.72	520.	2168077	1023.	223.75	99977.045	152742117	132.4	28.05	85.34	245.7

Sources: 2006 Annual Reports of Sampled Companies

(2007) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/ OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.009	0.017	0.57	0.82	5642	1.3	0.499	1	3904957	0.952	0.496	0.129	1.57
	2.	Chellerams	0.106	0.048	4.46	0.6	27942	0.48	0.12	0.85	251267	NA	2.276	0.043	2.319
TOTAL															
Conglomerate	3.	John Holt	0.0054	0.194	2.77	2.38	36	033	NA	0.5856	7031	NA	NA	NA	NA
	4.	Scoa Nig Plc	NA	NA	1.27	NA	NA	0.034	NA	NA	NA	NA	NA	NA	NA
	5.	UACN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Consumer	7.	7 Up Bottling	NA	NA	NA	NA	NA	386	NA	NA	NA	NA	0.30	NA	0.30
Goods	8.	Cad Bury Nig. Plc	NA	NA	0.82	0.31	23538	0.48	8.873	0.6604	24282.62	69.4	1.00	0.0112	70.4112
	9.	Guinness Nig Plc	0.317	0.193	1.41	0.61	57750	8.4	0.595	0.669	44972000	7.216	0.8614	0.776	8.853
	10.s	Nestle Nig. Plc	NA	NA	1.79	0.83 3.1	NA	14.58	NA	NA	NA	1.00	NA	NA	1.50
	11.s	Nigeria Brew.	0.554	0.0737	2.64	0.8	3724	NA	5.40	0.997	50300000	6.04	0.6754	1.20	7.915
	12.h	Unilever	0.295	1.5	3.93		1133	1.28	0.298	0.2	8641000	3.61	1.2	8.63	13.44
TOTAL															
Financial	13.s	Diamond Bank	0.022	0.129	0.74	0.51	4110	0.866	0.83	0.12	9	3.75	0.733	0.084	4.567
	14.s	Eco Bank Plc	0.024	21.39	13.07	0.42	7.126	0.280	0.89	6.13	1050	2.93	0.66	1.78	5.37
	15.s	UBA Plc	2.26	15.09	9.61	7.36	4.392	0.269	0.85	7.86	920	5.02	0.80	0.60	5.16

CONTINUATION OF (2007) SAMPLED COMPANIES AND THEIR VARIABLES

	16.s	Union Bank	0.020	0.13	11.61	0.92	699	3.00	0.84	4.04	1147	2.64	0.623	1,912	5.175
	17.s	Zenith Bank	0.020	0.16	9.89	0.72	725	0.48	0.80	4.26	982	4.32	0.767	0.446	5.533
	18.	First Bank	0.024	0.21	10.56	1.48	7030	4.539	0.90	10.39	1039	3.00	0.673	3.388	7.121
TOTAL															
Insurance	19.	Consolidated Hallmark	0.05	0.79	0.27	0,59	3760	3.98	0.18	NA	NA	0.06	2.77	2.77	5.55
	20.	Alico Ins.	5.8	32.7	2.18	0.6	2133	0.52	4.03	15.28	3708	2.1	0.461	0.503	3.064
TOTAL															
Pharmaceutical	21.a	May/Barker	NA	NA	2.3	0.51	1339	1.62	NA	3.4	NA	2.44	0.5	48	7.74
	22.	Nelmeth	9.9	52.59	0.86	0.61	536.7	0.52	5.5	86.2	1728	2.617	0.31	5.78	8.707
TOTAL															
ICT	23.a	Cham Plc	47.98	1.21	2.02	0.46	2200	142	NA	8.62	2180	2.4	0.717	3.086	6.203
	24.	Tipple G	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Industrial	25.s	Ashaka Cement	11.3	50.26	4.5	0.8	3294	0.63	6.92	17.14	22.2	26.1	0.96	2.91	29.97
Goods	26.s	Berger Paints	16.18	16.9	4.21	0.9	3490	NA	51.28	25.08	7440	2.86	0.651	1.162	4.673
	27.s	Beta Glass	11.86	46.5	3.16	0.4	7030	1445	NA	99.3	8900	17.58	0.81	1.86	20.25
	28.s	Cutix Plc	41.9	73.86	0.32	2.8	6535	0.411	2.86	70./15	446.1	4.37	0.228	4.33	8.928
	29.s	D.N. Meyer	7.18	48.24	NA	NA	2925	0.27	NA	NA	NA	2.4	0.677	0.52	3.597
	30.s	First Alluminum	22.77	3.4	0.26	4	1530	NA	23.18	89.8	2560	NA	0.792	3.55	8.672
	31.	Premier Paints	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
TOTAL															

CONTINUATION OF (2007) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	33.s	Japaul Oil	13.48	81.81	0.65	0.63	1662	1.05	44.84	74.89	3557	1.06	0.9	5.31	7.27
	34.s	Mobil Nigeria	9.5	94.28	2.93	0.34	5565	0.75	NA	46.8	1856	1.36	0.81	5.21	7.38
	35.s	Oando Plc	10.96	1.8	13.51	0.8	4293	1.03	29.7	65	6200	2.69	0.71	2.6	6.00
	36.s	Total Plc	47.76	24.4	7.45	8.5	2872	0.84	20.5	9.73	1000	5.42	0.62	3.1	9.14
	37.	Cli Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General Service	38.s	Daar Com	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	39.s	R.T. Brusco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	23.5	85.9	2.79	1.82	5979	0.92	NA	51.06	4.6	3.74	4.1	4.4	11.7
TOTAL			1970.4	654.55	243.65	44.62	198020.7	136.26	209.88	700.2	65279265.9	329.5	27.08	640.36	996.9

Sources: 2007 Annual Reports of Sampled Companies

(2008) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/ OPA	EMP	M/B	LE,V	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.193	0.62	0.81	0.67	9911	6.31	0.362	0.193	4223150	18.90	0.471	0.235	19.607
	2.	Chellerams	0.083	0.013	4.97	4.29	3631573	1.96	0.093	0,95	2928442	NA	0.4926	0.0756	0.568
TOTAL															
Conglomerate	3.	John Holt	0.0408	2.00	2.18	3.1	46	-2.2	NA	0.550	5261	NA	NA	NA	NA
	4.	Scoa Nig Plc	NA	NA	0.36	NA	NA	0.61	NA	NA	NA	NA	NA	NA	NA
	5.	UACN	NA	NA	2.08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	1.81	37.79	2.08	NA	64.88	32.7	20.93	NA	NA	NA	NA	NA	NA
TOTAL															
Consumer	7.	7 Up Bottling	NA	NA	3.14	NA	NA	1.5	NA	NA	NA	NA	NA	NA	NA
Goods	8.	Cad Bury Nig. Plc	NA	NA	1.01	1.21	28657	1.3	96.98	0.6103	239014	185.2	0.944	0.13	18.74
	9.	Guinness Nig Plc	0.36	0.23	1.4	0.6	6416	4.9	0.1122	0.7734	4749300	5.719	0.8251	0.495	7.039
	10.s	Nestle Nig. Plc	0.4	0.23	2.61	1.83	23047	1.08	0.2305	0.4733	29150000	1.22	0.05	1.493	2.763
	11.s	Nigeria Brew.	0.58	0.09	2.50	0.30	4848	2.15	0.123	0.993	64000000	6.43	0.8149	1.00	8.29
	12.h	Unilever	0.425	2.19	3.28	0.99	1245	1.06	0.3146	0.928	9750000	0.45	0.65	7.35	845
TOTAL															
Financial	13.s	Diamond Bank	0.019	0.101	1.18	0.50	4244	0.247	0.81	0.12	7	3.93	0.746	0.065	4.741
	14.s	Eco Bank Plc	0.0005	6.71	1.39	12.62	7284	0.230	0.93	12.49	1275	2.43	0.59	1.84	4.86
	15.s	UBA Plc	2.14	17.31	10.11	0.94	4523	0.105	0.88	9.50	10.20	5.29	0.81	0.78	6.97

CONTINUATION OF (2008) SAMPLED COMPANIES AND THEIR VARIABLES

	16.s	Union Bank	0.027	0.22	10.32	3.73	717	0.923	0.88	2.88	10.25	2.83	0.649	2.867	6.366
	17.s	Zenith Bank	0.028	0.14	10.03	0.7	736	0.219	0.87	4.26	9.82	5.13	0.805	1.833	7.768
	18.	First Bank	0.06	0.09	11.3	1..29	7187	2.764	0.72	2.50	11.21	3.03	0.670	3.290	6.990
TOTAL															
Insurance	19.	Consolidated Hallmark	0.05	0.79	0.90	0.29	1273	1.042	0.15	6.65	6.30	0.822	-3.201	0.61	4.633
	20.	Alico Ins.	24	21.3	2.8	0.4	2466	0.681	37,23	61.54	3072	1.85	0.261	0.15	2.261
TOTAL															
Pharmaceutical	21.a	May/Barker	NA	NA	3.6	0.41	18885	1.05	NA	NA	NA	5.01	1.3	2.32	8.63
	22.	Nelmeth	7.9	5.661	0.98	0.31	6950	0.35	20.9	8.7	2007	2.34	0.311	4.46	7.111
TOTAL															
ICT	23.a	Cham Plc	7.62	3.2	0.35	2.82	9565	-0.411	NA	3.16	9870	2.78	0.613	7.05	10.443
	24.	Tipple G	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Industrial	25.s	Ashaka it Cement	13.7	30.6	2.09	0.91	4275	0.365	8.49	22.69	25027	27.14	0.953	2.47	30.56
Goods	26.s	Berger Paints	10.53	17.6	3.28	0.7	4053	0.534	62.52	41.7	7440	NA	0.148	0.336	1.65
	27.s	Beta Glass	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	28.s	Cutix Plc	41.9	73.86	0.29	4.2	446.1	8.77	2860	70.15	446.1	3.47	0.284	3.147	6.901
	29.s	D.N. Meyer	10.05	67.53	0.25	7.5	1248	0.33	NA	NA	NA	NA	NA	NA	NA
	30.s	First Alluminum	-7.2	-44.8	1.2	0.31	1527	0.877	3.16	33.5	6500	NA	2.63	2.63	7.617
	31.	Premier Paints	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
TOTAL															

CONTINUATION OF (2008) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	33.s	Japaul Oil	4.81	32.29	0.22	0.78	2796	6.75	NA	68.91	20995	0.61	0.7	2.61	3.92
	34.s	Mobil Nigeria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	35.s	Oando Plc	9.67	2.3	4.71	2.5	7838	1.47	38.46	80.9	1111	21.1	0.03	2.82	24.54
	36.s	Total Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	37.	Cli Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	AN
TOTAL															
General Service	38.s	Daar Com	4.08	4.4	0.11	NA	23.2	6.82	NA	99.64	9.8	NA	NA	NA	NA
	39.s	R.T. Brisco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	23.51	12.8	0.6	3.05	9899	0.47	NA	4938	1311	21.1	0.63	2.8	24.53
TOTAL			156.8	295.3	92.13	56.95	38017 43.18	84.96	333.8	5469.8	9796742 2.88	330.7	12.6	52.86	396.2

Sources: 2008 Annual Reports of Sampled Companies

.(2009) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/ OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.163	0.478	2.73	0.52	10011	2.46	0.32	0.32	1466723	0.755	0.323	0.2718	1.349
	2.	Chellerams	NA	NA	5.72	2.1	36315	0.29	0.001	0.46	2928442	NA	1.00	0.0787	1.0787
TOTAL															
Conglomerate	3.	John Holt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4.	Scoa Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5.	UACN	NA	NA	2.21	2.1	1114	1.035	NA	0.88	5849396	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	2.24	45.68	2.72	0.13	8029	0.75	19.66	NA	NAN	NA	NA	NA	NA
TOTAL															
Consumer	7.	7 Up Bottling	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Goods	8.	Cad Bury Nig. Plc	NA	NA	1.01	2.1	30207	0.8	0.4983	0.5695	2524693	15.63	0.014	0.49	16.134
	9.	Guinness Nig Plc	0.2412	0.2687	1.08	0.49	8269	6.03	0.485	0.4371	82110000	NA	NA	NA	NA
	10.s	Nestle Nig. Plc	0.3114	0.3103	1.54	0.92	23047	1.44	23.08	0.4733	29159000	1.25	0.2	0.4519	1.901
	11.s	Nigeria Brew.	0.5986	0.194	3.4	0.6	5473	1.84	0.0295	0.997	64450000	4.718	0.7930	0.985	6.496
	12.h	Unilever	0.40	2.99	4.69	1.35	1493	0.73	0.34	0.68	9593000	0.53	0.81	1.65	2.99
TOTAL															
Financial	13.s	Diamond Bank	0.011	0.61	0.36	0.52	4.407	0.306	0.82	0.13	1.0	4.50	0.778	0.0699	5.347
	14.s	Eco Bank Plc	0.013	6.89	6.58	0.54	7293	0.110	0.92	14.74	1680	3.02	0.67	1.91	5.60

CONTINUATION OF (2009) SAMPLED COMPANIES AND THEIR VARIABLES

	15.s	UBA Plc	0.74	5.49	12.14	3.22	4.285	0.096	0.87	10.30	1260	3.33	0.70	0.64	4.67
	16.s	Union Bank	-0.064	11.34	5.37	3.00	7.34	0.762	0.95	4.81	1167	0.15	-5.616	0.086	-5.380
	17.s	Zenith Bank	0.012	12.06	0.83	3.30	7.44	0.217	0.79	5.59	1292	4.99	0.800	1.934	7.724
	18.	First Bank	0.011	0.10	11.41	0.32	73.54	57.0	0.71	2.30	1111	3.10	0.678	3.590	7.368
TOTAL															
Insurance	19.	Consolidated													
		Hallmark	0.11	0.18	0.03	0.36	7558	0.435	0.14	0.21	4959	0.008	5.2	1.2	0.408
	20.	Alico Ins.	3.2	2.51	3.09	2.3	2933	1.33	51.9	13.48.	8094	2.12	0.317	0.2606	2.697
TOTAL															
Pharmaceutical	21.a	May/Barker	NA	NA	6.1	0.32	1088	NA	NA	NA	NA	3.3	1.2	2.043	6.543
	22.	Nelmeth	33.11	-9.9	1.54	0.42	6607	0.47	12.56	15.4	1226	3.68	0.1566	13.59	17.42
TOTAL															
ICT	23.a	Cham Plc	7.32	-2.6	0.72	0.31	1595	0.39	NA	29.48	8.50	2.47	4.047	6.677	9.64
	24.	Tipple G	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Industrial Goods	25.s	Ashaka Cementt P	5.16	11.8	0.47	0.42	3439	0.47	11.04	20.36	25618	21.2	0.951	1.68	23.83
	26.s	Berger Paints	-13.79	25.0	1.37	0.5	4727	0.42	52.16	37.05	1246	1.5	0.335	0.362	2.192
	27.s	Beta Glass	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	28.s	Cutix Plc	33.5	80.7	0.32	3.5	6615	0.48	55.4	96.07	3996	6.9	0.137	2.92	9.957
	29.s	D.N. Meyer	14.8	94.54	1.17	3.5	1748	0.71	NA	NA	NA	NA	NA	NA	NA
	30.s	First Alluminium	0.376	2.36	1.21	0.53	1353	0.52	3.61	38.3	6607	4.6	0.766	2.63	7.996
	31.	Premier Paints	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA
TOTAL															

CONTINUATION OF (2009) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	33.s	Japaul Oil	4.8	32.73	0.4	0.32	1210	0.78	NA	84.01	21287	6.3	0.9	2.1	9.3
	34.s	Mobil Nigeria	19.7	27	6.22	0.51	3000	0.85	20.23	54.4	2063	2.7	0.61	2.3	5.61
	35.s	Oando Plc	8.77	2.9	2.32	0.23	7778	7.36	85.5	1584	21.2	3.4	0.34	1.65	5.42
	36.s	Total Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	37.	Oil Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General Service	38.s	Daar Com	11.5	68.5	5.00	0.71	60.28	NA	23.93	9.94	2340	2.1	2.1	1.32	5.52
	39.s	R.T. Brisco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	35.3	15.6	0.15	0..58	9899	0.45	NA	52.3	1311	4.1	3.1	1.52	8.72
TOTAL			168.5	439.9	92.4	37.82	23063 7911.	88.53	365.4	2077.6	1981665 82	106.3	21.3	52.4	180

Sources: 2009 Annual Reports of Sampled Companies

(2010) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/ OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.067	0.05	1.50	0.45	13465	0.65	0.094	0.25	3578196	2.527	0.604	0.379	3.51
	2.	Chellerams	0.14	0.2	6.61	1.20	48545	0.24	0.14	0.55	3081192	NA	1.000	0.0098	1.009
TOTAL															
Conglomerate	3.	John Holt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4.	Scoa Nig Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5.	UACN	NA	NA	0.45	0.15	9529	0.35	0.063	0.08	209/8080	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	0.0183	0.367	0.88	0.15	9388	6.64	0.206	0.995	5984/3793	0.229	NA	0.1821	0.411
TOTAL															
Consumer	7.	7 Up Bottling	NA	NA	NA	NA	NA	1.98	NA	NA	NA	NA	NA	NA	NA
Goods	8.	Cad Bury Nig. Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9.	Guinness Nig Plc	90.4526	0.282	2.31	0.22	9652	0.86	0.0962	0.8327	45922000	5.81	0.8279	1.03	7.66
	10.s	Nestle Nig. Plc	0.5819	0.192	1.48	0.21	14575	1.31	NA	0.7085	56799000	1.9308	1.943	0.3704	4.244
	11.s	Nigeria Brew.	0.608	0.1189	3.69	0.13	6195	2.65	0.2096	0.997	7395000	4.81	0.7930	1.068	6.671
	12.h	Unilever	0.43	0.33	1.08	0.99	1483	1.68	0.122	0.837	16729000	1.51	1.21	1.53	4.25
TOTAL															
Financial	13.s	Diamond Bank	0.014	0.064	0.56	0.52	4425	0.282	0.83	0.15	12	4.58	0.760	0.067	5.407
	14.s	Eco Bank Plc	0.016	0.72	1514	0.2310	7.282	0.034	0.92	14.76	15.62	2.94	0.65	1.92	551
	15.s	UBA Plc	0.15	0.15	11.01	.62	4.175	0.080	0.87	5.31	1184	2.90	0.66	1.12	4.68

CONTINUATION OF (2010) SAMPLED COMPANIES AND THEIR VARIABLES

	16.s	Union Bank	-0.250	-1.89	2.8	12.55	7.34	0.443	0.94	5.15	1204	-5.22	-1.192	-3.412	-9.824
	17.s	Zenith Bank	0.019	0.10	9.82	0.97	73.7	0.263	0.80	4.70	948	3.73	0.737	1.435	4.900
	18.	First Bank	0.012	0108	9.98	0.06	7436	4.957	0.85	2.34	900	2.64	0.622	2.496	5.758
TOTAL															
Insurance	19.	Consolidated Hallmark	0.46	0.084	0.33	0.82	6387	0.67	1.168	NA	5.4	2.38	2.56	6.75	11.69h
	20.	Alico Ins.	NA	NA	2.1	0.53	NA	NA	NA	NA	NA	2.19	0.307	0.277	2774
TOTAL															
Pharmaceutical	21.a	May/Barker	NA	NA	3.61	0.81	1889	1.7	NA	NA	NA	4.92	2.63	2.07	7.62
	22.	Nelmeth	-11.35	8.2	0.69	1.15	7186	0.59	14.95	33.20	1003	3.19	0.2519	13.33	16.77
TOTAL															
ICT	23.a	Cham Plc	-1.70	50.6	0.77	7.6	3595	0.612	1.788	22.78	2960	4.18	0.944	1.056	6.18
	24.	Tipple G	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Industrial	25.s	Ashaka Cement Plc	11.96	31.38	4.74	5	3637	1.35	16.21	67.31	2944	22.5	0.954	1.59	25.384
Goods	26.s	Berger Paints	14.69	36.2	0.52	23.7	5880	0.4	53.71	35.03	1470	1.336	0.2518	0.272	1.859
	27.s	Beta Glass	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	28.s	Cutix Plic	38.12	80.3	1.84	4.98	6945	0.67	NA	67.8	5960	10.6	0.114	0.04	12.75
	29.s	D.N. Meyer	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30.s	First Alluminum	1.17	7.38	1.01	9.5	159	7.42	36.1	88.8	6624	3.99	0.762	2.78	75.532
	31.	Premier Paints	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															

CONTINUATION OF (2010) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	33.s	Japaul Oil	5.386	42.76	0.57	53.05	3.411	0.35	5.084	56.22	2500	2.1	6.1	3.1	11.3
	34.s	Mobil Nigeria	0.25	3.8	0.94	-6.00	6973	6.81	76.02	37.60	18748	3.4	2.1	2.1	7.6
	35.s	Oando Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	36.s	Total Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	37.	Oli Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General Service	38.s	Daar Com	7.98	-0.004	4.4	7.3	0.047	4.67	1.24	97.78	23.80	3.1	0.76	2.81	6.67
	39.s	R.T. Brusco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL			70.7	265.8	83.9	256.6	184583	49.3	180.5	8868.7	280809233	48.7	24’3	47.1	120.1

Sources: 2010 Annual Reports of Sampled Companies

(2011) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/ OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.36	0.38	1.81	0.28	21.340	1.06	0.72	0.30	4.691153	13.419	0.925	1.309	13.05
	2.	Chellerams	0.067	0.61	6.30	0.10	47585	0.43	0.573	0.60	3292080	NA	1.00	0.419	1.419
TOTAL															
Conglomerate	3.	John Holt	NA	NA	3.19	2.1	13	0.696	0.0616	0.496	5805	NA	1.000	0.154	1.151
	4.	Scoa Nig Plc	0.10	1.673	1.9	0.9	2596	0.54	0.16	0.837	614720556	0.0554	NA	0.20	0.288
	5.	UACN	0.074	0.356	0.96	0.89	1133	0.572	0.1156	0.3837	1472083	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	0.164	49.54	2.00	0.67	9159	1.54	0.0.35	1.00	59843793	0.20	NA	0.164	0.364
TOTAL															
Consumer	7.	7 Up Bottling	NA	NA	NA	NA	NA	3.2	0.317	0.656	43631658	0.0124	0.586	NA	0.5984
Goods	8.	Cad Bury Nig. Plc	0.1501	0.0322	1.99	1.01	40272	NA	0.0948	0.3988	3365352	9.825	1.00	0.15	10.97
	9.	Guinness Nig Plc	0.491	0.3599	2.16	0.43	9997	0.804	0.125	0.8547	5393	7360	08641	0.99	9.214
	10.s	Nestle Nig. Plc	0.254	0.4595	1.28	0.69	43644	1.3	0.382	0.7143	77728	1.9308	1.943	1.943	5.816
	11.s	Nigeria Brew.	0.35	0.150	5.03	0.12	6910	11.66	0.306	0.9884	97743000	13.4	0.8836	1.400	15.68
	12.h	Unilever	0.249	0.0042	1.9	0.11	1824	1.18	1.1156	0.50	16723000	1.45	0.657	7.7	9.801
TOTAL															
Financial	13.s	Diamond Bank	0.016	0.065	0.96	0.48	4507	0.067	0.85	0.16	13	4.66	0.761	0.068	5.489
	14.s	Eco Bank Plc	0.016	6.22	1.76	8.12	7176	0.012	0.93	16.52	1680	2.83	0.62	1.94	5.39
	15.s	UBA Plc	0.18	1.92	2.87	0.32	4170	0.022	0.92	3.36	1184	2.98	0.58	1.18	4.74

CONTINUATION OF (2011) SAMPLED COMPANIES AND THEIR VARIABLES

	16.s	Union Bank	-0.18	-1.36	1.17	0..58	7.40	1.115	0.94	5.04	1196	-3.65	-0.726	-2.921	-7.297
	17.s	Zenith Bank	0.017	0.11	6.00	7.30	748	0.177	0.83	4.14	1000	3.87	90.785	1.462	6.117
	18.	First Bank	0.014	0.09	1.45	2.42	7315	4.759	0.84	2.46	0.87	3.18	0.735	2.561	6.476
TOTAL															
Insurance	19.	Consolidated Hallmark	0.48	0.918	2.81	0.52	1045	0.829	0.356	0.157	6.066	0.9	0.229	0.660.	1.789
	20.	Alico Ins.	15	12.65	2.1	0.53	4.382	0.69	41.5	14.77	2834	1.87	0.356	201	2.427
TOTAL															
Pharmaceutical	21.a	May/Barker	NA	65.7	3.71	0.25	1648	2.5	52.8	95.24	4960	11.35	0.42	2.49	14.20
	22.	Nelmeth	NA	NA	1.8	0.31	NA	NA	NA	NA	NA	3.23	0.3249	8.6	12.15
TOTAL															
ICT	23.a	Cham Plc	9.127	25.38	1.93	1.10	6500	2.17	48.08	28.6	6531	5.44	0.814	2.01	8.264
	24.	Tipple G	8.9	0.54	NA	NA	NA	0.76	NA	95.7	1170	2.09	0.523	5.8	8.413
TOTAL															
Industrial	25.s	Ashaka Cement	7.6	37.2	4.52	0.8	4140	0,93	3.82	90,92	5444	23.7	1.009	0.88	25.589
Goods	26.s	Berger Paints	1.78	14.20	1.52	0.9	7350	0.713	53.7	32.49	1781	1.932	0.344	3.25	5526
	27.s	Beta Glass	20.3	9.23	4.52	0.53	2120	0.713	26.87	80.45	1132	5.34	0.789	1.9	8.039
	28.s	Cutix Plc	21.8	47.20	1.95	3.5	7175	0741	NA	63	5730	10.6	0.0923	1.92	12.61
	29.s	D.N. Meyer	0.029	NA	NA	NA	5044	0.83	44.07	NA	NA	0.38	0.682	0.38	1.442
	30.s	First Aliminium	27.1	10.2	0.89	0.41	182	3	32.75	1	2320	1.4	0.658	5.2	7258
	31.	Premier Paints	NA	NA	0.59	NA	NA	3.91	NA	NA	NA	NA	NA	NA	NA
TOTAL															

CONTINUATION OF (2011) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	33.s	Japaul Oil	18.07	47.8	0.28	0.32	2404	-0.57	35.29	27.51	3100	1.4	0.8	5.8	8
	34.s	Mobil Nigeria	474	39.3	2.09	0.7	6336	0.88	76.02	37.60	18748	1.6	0.31	4.2	6.11
	35.s	Oando Plc	0.88	15.6	2.01	0.4	13.20	11.86	30.14	52.37	2090	68	0.1	3.1	5
	36.s	Total Plc	9.9	29.76	2.6	0.8119	3646	11.84	4.49	28.27	5870	2.1	0.2	2.0	4.3
	37.	Cli Leasing	NA	NA	0.39	.6	NA	0.86	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General Service	38.s	Daar Com	11.78	0.62	0.66	6.25	4740	0.87	7.23	9718	213	2.1	0.3	1.4	3.8
	39.s	R.T. Brisco	NA	NA	0.62	0.23	NA	5.08	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	37.6	66.6	0.87	0.53	1620	0.53	11	96.4	500	3.1	0.4	1.2	4.7
TOTAL			207	366.2	542.61	105.7	26707 6.6	66.4	476.3	888.5	3523906 97.7	141.9	20	70.3	232

Sources: 2011 Annual Reports of Sampled Companies

(2012) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/ OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.20	0.69	0.07	0.31	28128	1.6	0.476	0.499	17088098	0.734	0.361	2.29	3.385
	2.	Chellerams	0.05	0.48	6.38	0.95	50120	0.48	0.59	0.64	34.43123	32.708	0.066	0.674	3.448
TOTAL															
Conglomerate	3.	John Holt	NA	NA	0.45	0.6	5	0.73	0.0572	NA	5454	3.509	0.715	0.477	4.701
	4.	Scoa Nig Plc	0.03	0.196	0.70	1.05	2.759	0.571	0.023	0.674	75604202	0.68	NA	0.0187	6.698
	5.	UACN	0.052	0.305	0.17	0.45	9302	0.56	0.023	0.67	75604202	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	0.217	63.61	8.58	0.17	10895	2.55	0.046	0.905	62004757	0.18	NA	0.141	0.321
TOTAL															
Consumer	7.	7 Up Bottling	0.052	0.079	0.08	1.2	13119	1.45	0.175	0.69	48485662	0.024	0.841	Na	0.865
Goods	8.	Cadbury Nig. Plc	0.1335	0.342	0.83	-0.007	39616	2.5	0.799	0.3484	40156508	1.06	1.00	0.13	2.19
	9.	Guinness Nig Plc	0.133	0.5356	9.64	2.06	9025	2.36	0.175	0.7196	1060100	4.402	0.772	0.968	6.142
	10.s	Nestle Nig. Plc	0.2815	0.6325	1.07	0.19	51985	1.95	0.3327	0.703	88963000	2.728	0.6334	2.0379	5.399
	11.s	Nigeria Brew.	0.32	0.17	1.03	0.28	6684	1.84	0.22	0.725	19633500	14.6	0.825	1.655	1.708
	12.h	Unilever	0.22	0.43	1.43	0.01	1851	- 0.86	0.16	0.595	21719000	2.41	0.65	8.48	11.54
TOTAL															
Financial	13.s	Diamond Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	14.s	Eco Bank Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15.s	UBA Plc	1.38	-1.64	2.61	0.66	1228	1.08	2.99	2.82	1666053	2.6	3.1	4.2	9.9

CONTINUATION OF (2012) SAMPLED COMPANIES AND THEIR VARIABLES

	16.s	Union Bank	0.042	51.27	1.44	1.55	1050	0.56	2.28	0.47	10148006	2.7	3.6	4.9	11.2
	17.s	Zenith Bank	3.85	59.9	3.12	14.2	2833	0.618	4.73	2.52	2436886	2.8	3.2	4.6	10.6
	18.	First Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Insurance	19.	Consolidated Hallmark	0.43	0.97	0.27	0.7	1412	0.395	0.39	0.14	6667	1.12	1.4	67	8.96
	20.	Alico Ins.	5.90	57.99	0.19	3.3	6197	0.45	54.43	13.53	35054	1.33	6.259	0.11	1.699
TOTAL															
Pharmaceutical	21.a	May/Barker	NA	2.6	0.8	7.2	1904	NA	22.5	95.1	4890	11.35	0.42	0.11	1.699
	22.	Neimeth	4.5	9.9	0.68	1.4	8727	0.525	16.88	28.76	1700	3.58	0.291	2.49	14.26
TOTAL															
ICT	23.a	Cham Plc	9.6	30.40	0.03	2.35	2800	0.608	57.5	16.6	7.40	5.07	0.197	2.20	7.287
	24.	Tipple G	22.4	1.45	3.62	0.52	3095	0.0366	22.04	72.67	1610	2.13	5.32	4.78	12.23
TOTAL															
Industrial	25.s	Ashaka Cement	9.48	489	5.33	0.82	4365	1.289	4.3	83.63	5791	25.57	0.954	0.901	28.36
Goods	26.s	Berger Paints	14.21	4.46	1.10	13.8	8365	0.365	56.5	35.26	2185	186	0.352	2.55	4.762
	27.s	Beta Glass	14.9	74.5	0.21	1.5	2153	1.44	42.07	79.41	1245	4.64	0.620	1.9	7.16
	28.s	Cutix Plic	20.2	44.69	0.26	2.6	7865	0.401	NA	57.38	5820	1.88	0.090	1.893	3.86
	29.s	D.N. Meyer	0.096	0.015	0.18	8.07	5450	0.558	43.43	69.04	2597	0.57	0.84	0.521	1.931
	30.s	First Alluminum	19.96	99.8	1.21	0.62	1777	0.339	6.86	99.97	3272	3.73	0.709	2.94	7.379
	31.	Premier Paints	1.3	487	0.32	1.9	6341	0.228	28.63	1.00	223	1.4	0.454	6.4	8.254
TOTAL															

CONTINUATION OF (2012) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.s	Eternal Plc	8.45	0.031	1.92	2.49	49.80	0.302	NA	105.2	11.35	2.1	0.51	2.4	5.01
	33.s	Japaul Oil	NA	NA	1.5	0.42	NA	NA	NA	NA	NA	NA	NA	NA	NA
	34.s	Mobil Nigeria	1.88	22.2	7.14	3.11	82.45	0.84	66.13	32.09	21.231	2.1	0.4	2.1	4.6
	35.s	Oando Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	36.s	Total Plc	9.33	41.9	0.71	5.5	4566	0.879	3.59	2479	76067	3.2	0.52	2.2	5.92
	37.	Cli Leasing	NA	NA	0.81	11.7	2799	0.313	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General Service	38.s	Daar Com	1.66	0.008	0.40	-.1.7	4300	0.409	16.02	97.58	2.13	4,1	6.51	3.1	13.71
	39.s	R.T. Brisco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	12.2	19.0	0.79	8.8	1112	0.922	7.6	9.718	46.2	2.2	0.62	4.2	7.02
TOTAL			169.5	1618.2	.65.1	98.7	312891	172	451.3	1022	516338592	119	63.63	79,2	262

Sources: 2012 Annual Reports of Sampled Companies

(2013) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	-	-	4.28	0.22	21212	1.21	6.2	0.544	1738069	6.32	0.842	16.39	23.55
	2.	Chellerams	0.031	0.45	4.16	1.86	47189	4.72	0.31	0.698	5208738	2.583	0.612	0.483	3.678
TOTAL															
Conglomerate	3.	John Holt	0.018	0.492	0.27	0.95	8	0.255	0.277	0.887	5295	1.305	0.697	0.156	4.158
	4.	Scoa Nig Plc	0.018	0.1452	1.92	1.1	3929	0.419	0.3147	0.876	14946	0.0125	0.20	0.037	0.249
	5.	UACN	0.664	0.466	1.57	0.42	8568	0.355	0.314	0.817	149464	NA	NA	NA	NA
TOTAL															
Construction	6.	Julius Berger	0.161	0.4412	5.58	0.935	11499	2.9	0.11	0.978	680112441	0.015	0.34	0.098	0.453
TOTAL															
Consumer Goods	7.	7 Up Bottling	0.0635	0.101	6.06	0.70	14.116	1.9	0.0972	0.690	51370170	0.0629	1.00	1.86	2.922
	8.	Cadbury Nig. Plc	0.1917	0.5289	0.84	0.65	42220	0.08	0.1917	0.03924	43172624	15.00	1.00	0.179	16.179
	9.	Guinness Nig Plc	0.0974	0.2563	7.93	0.65	9899	0.86	0.174	0.7278	12106000	5.488	0.817	1.138	7.443
	10.	Nestle Nig. Plc	0.2407	0.6577	1.48	0.14	5928	1.305	0.3177	0.6141	108207000	3.499	0.7142	0.5174	4.7306
	11.	Nigeria Brew.	0.33	0.182	5.7	0.06	8340	2.65	0.434	0.741	206929000	5.624	0.822	1.557	8.003
	12.	Unilever	0.155	0.359	1.08	0.81	2000	NA	0.144	0.58	2535	4.32	0.71	4.7	9.73
TOTAL															
Financial	13.	Diamond Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	14.	Eco Bank Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15.	UBA Plc	2,33	31.4	1.0	6.4	18.15	0.94	2.45	3.26	19.33965	4.31	0.91	14.2	19.42

CONTINUATION OF (2013) SAMPLED COMPANIES AND THEIR VARIABLES

	16.	Union Bank	3.31	39.31	0.28	1.12	10.58	1.78	5.32	4.5	1002756	6.7	8.3	4.2	19.2
	17.	Zenith Bank	3.26	8.79	2.91	2.08	44.52	0.842	6.99	19.92	287869	4.61	4.31	10.2	19.12
	18.	First Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
Insurance	19.	Consolidated Hallmark	0.416	0.85	4.1	0.12	1248	-0.92	0.40	0.146	6160	1.12	1.4	0.717	3.237
	20.	Alico Ins.	3.03	36.9	0.12	0.65	6785	0.638	51.94	11.66	42100	0.433	1.56	0.0313	2.024
TOTAL															
Pharmaceutical	21.	May/Barker	NA	2.65	0.610	4.4	21.71	NA	14.8	95	4700	2.55	0.61	2.5	6.66
	22.	Nelmeth	9.57	23.21	.11	8.59	7012	1.7	9.36	22.42	1900	4.23	0.255	7.83	12.315
TOTAL															
ICT	23.	Chams Plc	7.74	26.53	2.69	2.45	1570	0.599	58.97	14.21	8190	8.00	0.77	2.12	10.89
	24.	Tipple GCE	1.55	10.52	0.17	6.12	5015	0.612	22.36	69.08	1669	2.12	0.49	5.22	7.83
TOTAL															
Industrial	25.	AshaIIa Conoit Plc	4.76	25.4	6.63	99.39	4328	0.74	50.59	81.5	5969	25.51	1.042	0.901	27.45
Goods	26.	Berger Paints	13.45	50.3	0.57	15.6	9670	0.908	56.9	384	2594	3.56	0.689	4.02	8.269
	27.	Beta Glass	13.45	88.4	0.52	9.0	2349	1.15	29.12	70.47	1375	4.44	0.735	1.9	7.075
	28.	Cutix Plic	15.47	52	0.29	2.7	1128	0978	NA	46.18	773	1.79	0.328	1.93	14.04
	29.	D.N. Meyer	28.87	0.013	3.84	2.04	5555	1.25	49.3	64.44	2697	3.2	0.62	0.53	4.35
	30.	First Alluminum	6.6	2.74	1.27	2.9	9.770	3.88	0.073	92.91	5403	47	0.79	5.39	10.88
	31.	Premier Paints	6.6	26	0.1	8.5	6340	0.59	19.62	1	2140	1.4	0.454	6.4	8.25
TOTAL															

CONTINUATION OF (2013) SAMPLED COMPANIES AND THEIR VARIABLES

Oil and Gas	32.	Eternal Plc	9.89	3.77	1.07	0.8	50.32	0.355	NA	96.87	1183	1.4	0.4	3.1	4.9
	33.	Japaul Oil	0.42	5.11	0.37	10.9	3842	0.38	44.78	30.46	3800	4.1	0.31	2.1	6.51
	34.	Mobil Nigeria	1.9	28.33	9.46	2.65	8035	0.84	63.79	26.9	26347	3.2	0781	3.22	7.209
	35.	Oando Plc	6.66	81.5	9.87	32	1035	1.18	4.18	5.035	3420	8.00	0.1	4.2	12.3
	36.	Total Plc	1.23	57.86	0.46	9.3	4591	0.841	37.81	26.26	79403	7.4	5.2	5.1	17.7
	37.	Cli Leasing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL															
General	38.	DaaR Com	14.23	46.75	0.44	3.3	4069	0.737	3.00	98.80	1.884	1.12	1.3	3.2	5.62
Service	39.	R.T. BrIsco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.	Red Star	13.36	13.36	0.49	0.5	1198	0.65	45.63	96.31	4888	5.2	1.4	1.43	8.03
TOTAL			166.5	617.3	107.2	240	326728	36.8	589.3	926.6	6613590843	156.3	40.5	117.6	314.3

Sources: 2013 Annual Reports of Sampled Companies

(2014) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.3	0.521	5.19	0.77	4987	NA	0.536	0.544	19959147	5.426	0.815	31.6	37.841
	2.	Chellerams	0.036	0.544	4.6	0.14	47135	NA	0.48	0.704	5331067	2.983	6.646	0.479	10.108
TOTAL															
Conglomerate	3.	John Holt	0.0345	1.26	0.31	2.47	8	NA	0.530	0.679	7114	1.3209	0.2429	0.0549	1.618
	4.	Scoa Nig Plc	0.0145	0.128	0.28	0.21	8612	NA	0.285	0.78	70735362	0.1185	0.156	NA	0.274
	5.	UACN	0.014	0.169	3.29	1.19	2533	NA	0.174	0.093	54292923	11.3	0.0991	0.839	12.238
TOTAL															
Construction	6.	Julius Berger	0.149	0.3582	3.93	0.97	10638	5.00	0.1007	0.097	66874089	0.014	0.29	0.10	10.405
TOTAL															
Consumer Goods	7.	7 Up Bottling	0.136	0.2397	0.04	2.51	17156	NA	2.56	0.678	55863209	NA	NA	0.95	0.95
	8.	Cadbury Nig. Plc	0.0828	0.254	0.5	0.05	36031	NA	0.1304	0.5718	28811286	3.66	0.0997	0.666	4.42
	9.	Guinness Nig Plc	0.072	0.2123	6.36	0.57	8527	3.22	0.2664	NA	132355000	7.94	0.874	1.701	10.515
	10.	s Nestle Nig. Plc	0.23.4	0.6172	3.52	0.76	63843	18.7	0.2395	0.3525	106062000	0.654	0.8472	1.00	2.56
	11.	s Nigeria Brew.	0.22	0.17	5.62	0.01	8740	6.43	0.0846	0.6639	291538000	6.327	0.841	1.907	9.075
	12.	h Unilever	0.0628	0.51	6.64	0.81	4315	NA	0.1506	0.594	27650000	1.53	0.033	2.18	3.743
TOTAL															

CONTINUATION OF (2014) SAMPLED COMPANIES AND THEIR VARIABLES

Financial	13.s	Diamond Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	14.s	Eco Bank Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15.s	UBA Plc	1.81	2.56	0.32	1.1	1823	NA	1.76	3.05	2217417	10.2	0.91	14.32	25.43
	16.s	Union Bank	2.68	32.02	0.63	20.7	1278	NA	8.15	481	1005451	9.2	2.1	10.32	21.62
	17.s	Zenith Bank	3.34	6.87	3.16	8.9	3111	31.2	67.9	2.03	3423819	10.2	0.92	13.6	24.72
	18.	First Bank	23.25	48.7	0.61	1.2	3490	NA	2.27	214	3490871	12.1	2.4	3.4	18.1
TOTAL															
Insurance	19.	Consolidated Hallmark	0.412	0.84	4.1	0.26	2436	NA	2.14	0.120	7680	1.19	105	0.95	3.19
	20.	Alico Ins.	5.61	94.54	0.31	13	5969	0.56	60.11	8.8	58336	1.68	0.301	0.074	2.055
TOTAL															
Pharmaceutical	21.a	May/Barker	NA	25.9	0.06	11.33	2395	NA	234	98	4341	5.27	0.8	1.2	7.27
	22.	Nelmeth	12.29	25.25	0.96	0.93	6320	NA	15.1	33.6	7610	3.96	1.41	7.54	12.91
TOTAL															
ICT	23.a	Cham Plc	3.06	4.98	0.24	6.24	1668	NA	37.16	15.62	1386	15	0.073	2.333	17.406
	24.	Tipple GCE	1.257	0.89	0.48	13.2	4250	NA	22.68	64.42	1750	1.06	0.061	5.6	6.721
TOTAL															

CONTINUATION OF (2014) SAMPLED COMPANIES AND THEIR VARIABLES

Industrial Goods	25.s	Ashaka Cement	8.2	4.69	2.04	2.1	3603	NA	3.62	78.46	6339	27.65	0.958	0.872	29.48
	26.s	Berger Paints	14.88	38.5	1.3	11.7	1680	72.5	53.9	37.97	2715	4.63	0.719	5.12	10.46
	27.s	Beta Glass	20.9	13.14	1.2	17.9	2540	NA	20.69	60.2	1595	7.125	0.766	2.9	10.79
	28.s	Cutix Plic	25.21	60	2.4	15.8	1084	NA	48.9	46.8	7773	3.15	0.319	1.4	4.869
	29.s	D.N. Meyer	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30.s	First Alluminum	NA	NA	0.92	6.7	2996	NA	7.23	94.75	5435	384	719	3.85	14.88
	31.	Premier Paints	5.16	17.88	0.07	3.08	8295	NA	35.21	1.1	21.30	1.15	0.728	16	3.47
TOTAL															
Oil and Gas	32.s	Eternal Plc	8.9	35.8	1.2	1.9	5138	NA	NA	88.79	1241	1.12	0.31	1.7	3.13
	33.s	Japaul Oil	8.4	80.48	NA	0.11	3531	NA	57.04	57.78	3200	1.13	0.41	1.81	3.35
	34.s	Mobil Nigeria	2.5	46.66	7.73	1.06	8120	NA	58.79	22.15	3288	1.6	0.1	1.91	3.61
	35.s	Oando Plc	8.88	12.088	NA	2.65	2145	NA	49.08	50.8	6180	2.61	2.1	2.1	6.81
	36.s	Total Plc	7.15	38.65	3.03	8.59	4981	NA	3111	22.95	95512	4.3	3.12	3.1	10.52
	37.	Oli Leasing	1.58	51	NA	NA	NA	NA	2.44	22.17	1892	5.1	1.2	4.2	10.5
TOTAL															
General Service	38.s	Daar Com	2.5	12	NA	50	5.697	NA	NA	95.53	1682	1.9	0.9	2.9	5.7
	39.s	R.T. Brissco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40.s	Red Star	78.11	14.5	0.68	12.44	13.47	NA	39.78	98.1	5533	4.2	3.4	3.6	11.2
TOTAL			177.3	693.19	71.7	221.4	33512 2.7	137.6 1	653.9	923.6	9901040 87	180.6	43.2	338.9	562.2

Sources: 2014 Annual Reports of Sampled Companies

(2015) SAMPLED COMPANIES AND THEIR VARIABLES

SECTOR	S/N	COMPANIES	ROA	ROE	ATO	ADM/OPA	EMP	M/B	LEV	PC	TA	HCE	SCE	CEE	VAIC
Agriculture	1.	Presco Plc	0.3	NA	2.32	NA	NA	1.15	NA	NA	NA	NA	NA	NA	NA
	2.	Chellerams	NA	NA	4.32	0.3	45097	1.49	0.074	0.68	523786	1.715	4.171	0.319	6.265
TOTAL															
Conglomerate	3.	John Holt	NA	NA	1.88	0.22	6	NA	0.648	0.728	7174	1.308	0.2354	0.0408	1.584
	4.	Scoa Nig Plc	0.027	0.0259	2.4	0.15	8490	1.57	0.3565	0.749	202853949	NA	NA	NA	NA
	5.	UACN	0.165	0.053	1.54	0.02	1296	0.87	0.489	0.017	20541670	13.8	0.099	2.56	16.45
TOTAL															
Construction	6.	Julius Berger	0.97	0.098	1.11	NA	NA	2.43	0.101	NA	NA	NA	NA	NA	NA
TOTAL															
Consumer	7.	7 Up Bottling	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Goods	8.	Cadbury Nig. Plc	0.0554	0.67	0.1	0.091	3536	2.15	0.1563	0.055	2847055	0.2224	0.0991	0.43	0.751
	9.	Guinness Nig Plc	0.0637	0.18	5.18	0.085	9584	3.27	0.1692	0.17	122255000	1.59	0.371	0.427	2.388
	10. s	Nestle Nig. Plc	0.245	0.74	4.42	0.054	64206	NA	0.18	0.408	119215000	5.723	0.8252	0.9025	7.45
	11. s	Nigeria Brew.	0.057	0.14	4.82	NA	NA	6.43	NA	NA	NA	6.327	0.841	1.907	9.075
	12. h	Unilever	0.035	0.96	0.32	0.062	4745	NA	0.014	0.581	29164000	1.44	0.0306	6.12	7.59
TOTAL															

CONTINUATION OF (2015) SAMPLED COMPANIES AND THEIR VARIABLES

Financial	13.s	Diamond Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	14.s	Eco Bank Plc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15.s	UBA Plc	2.28	27.9	1.77	10.3	1660	NA	0.15	3.616	2216337	10.4	0.8	6.4	17.6
	16.s	Union Bank	1.38	'17.05	NA	1.5	1934	0.448	3.66	4.77	1042346	6.8	9.2	0.51	16.512
	17.s	Zenith Bank	3.07	7.33	3.36	1.02	3144	4.7	3.66	2.16	3756327	11.4	2.1	8.9	22.4
	18.	First Bank	0.79	16.2	2.4	6.2	3532	0.19	7.5	0.06	35376	10.1	0.51	6.1	16.71
TOTAL															
Insurance	19.	Consolidated Hallmark	0.412	0.44	4.75	0.8	0.49	0.713	0.37	6	7.68	5.3	1.00	2.3	8.6
	20.	Alico Ins.	2.2	51.87	0.14	4.9	3061	0.5	68.8	6.6	7.668	1.688	6.407	0.64	8.735
TOTAL															
Pharmaceutical	21.a	May/Barker	1.09	20	0.07	29	2803	NA	65	6.29	8969	1.688	6.407	0.64	7.27
	22.	Nelmeth	6.9	2.1	3,2	36	8658	NA	23.6	29.78	1368	5.27	0.8	0.8	17.35
TOTAL															
ICT	23.a	Chams Plc	18.55	7.02	NA	7'3	4570	NA	19.2	18.7	1083	1.35	0.239	0.459	2.41
	24.	Tipple GCE	2.94	21.45	NA	0.95	3850	NA	22.72	59.33	1800	2.44	5.2	5.689	9.581
TOTAL															
Industrial Goods	25.s	AshaIIa Conoit Plc	5.1	2.86	1.23	7.6	4550	NA	NA	79.97	6291	27.65	0.953	5.8	14.4
	26.s	Berger Paints	19.18	21.1	0.94	7.2	1158	0.822	49.29	30.86	2919	3.97	0.671	0.877	29.4
	27.s	Beta Glass	17.7	12.4	4.88	4.1	2417	NA	23.22	66.71	1750	7.125	0.766	4.10	8.7441
	28.s	Cutix Plic	10.6	5.0	7.06	5.5	1479	NA	0.87	45.3	1968	3.80	0.258	1.69	9.591
	29.s	D.N. Meyer	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.689	4.744

CONTINUATION OF (2015) SAMPLED COMPANIES AND THEIR VARIABLES

	30. s	First Alluminum	0.52	0.047	NA	6.07	3478	0,22	19.23	61.57	8152	NA	NA	NA	NA
	31.	Premier Paints	0.45	81.3	NA	4.65	5363	46.9	18.95	1	2690	NA	NA	NA	NA
TOTAL															
Oil and Gas	32. s	Eternal Plc	9.34	39.3	0.89	0.24	546	0.32	NA	80.9	1305	1.31	4.1	3.6	12.35
	33. s	Japaul Oil	-23.88	-2.21	NA	3.6	3622	2.05	84.13	60.65	2900	1.2	2.1	4.2	9.01
	34. s	Mobil Nigeria	1.7	38.3	3.31	9.3	6831	2.85	61.3	19.12	39791	4.29	1.1	1.2	8.4
	35. s	Oando Plc	12.45	9.35	NA	3.73	3727	0.88	6.39	50	4520	1.65	6.2	3.1	6.59
	36. s	Total Plc	7.75	40.56	1.92	13.6	43.6	3.79	4.13	27.6	8305	3.41	1.1	2.2	10.95
	37.	Oli Leasing	9.85	2.51	NA	5.5	9700	NA	3.22	27.75	1499	4.21	2.1	3.41	6.71
TOTAL															
General	38. s	Daar Com	7.12	2.6	6.9	9.91	5123	NA	NA	92.87	1460	3.97	3.1	5.6	12.67
Service	39. s	R.T. Brusco	NA	NA	NA	NA	NA	3.18	NA	NA	NA	NA	NA	NA	NA
	40. s	Red Star	73.31	14.1	0.65	9.3	1319	1.19	32.88	98.1	577	4.2	4.2	3.4	11.8
TOTAL			192	466	71.88	254.2	2195 29	88.14	588.7	883	1222.5503 81	155.4	64.96	84.13	304.5

Sources: 2015 Annual Reports of Sampled Companies

APPENDIX 2

Cumulative Figures of the Variables of the Sampled Companies in the Various Years of Study.

YEAR	ROA	ROE	ATO	ADMOPA	EMP	MB	LEV	PC	TA	HCE	SCE	CEE	VAIC
2001	301.5	257.3	84.5	15.55	50846.97	37.29	165.1	272.9	52341941	64.63	16.11	42.801	137.4
2002	101.65	340.164	96.2	103.13	91991	40.95	209.166	3.31	75810222.31	211.093	48.62	143.06	347.2
2003	154.28	583.44	104.2	33.12	126332.1	96.99	248.06	577.63	97294854.77	123.08	15.599	108.32	246.92
2004	372.2	407.2	141.05	22.51	162490	56.392	147.8	733.25	141060061	102.74	30.89	133.76	267.397
2005	278.4	512.4	320.9	115.38	96911261.3	632.6	159.06	7024.8	72949147	158.86	37.138	85.02	281.01
2006	223.57	982.97	444.72	520	2168077	1023	223.75	99977.045	152742117	132.4	28.05	85.34	245.7
2007	1970.4	654.55	243.65	44.62	198020.7	136.26	209.88	700.2	65279265.9	329.5	27.08	640.36	996.9
2008	156.8	295.3	92.13	56.95	3801743.18	84.96	333.8	5469.8	97967422.88	330.7	12.6	52.86	396.2
2009	168.5	439.9	92.4	37.82	230637911	88.53	365.4	2077.6	198166582	106.3	21.3	52.4	180
2010	70.7	265.8	83.9	256.6	184583	49.3	180.5	8868.7	280809233	48.7	24.3	47.1	120.1
2011	207	366.2	542.61	105.7	267076.6	66.4	476.3	888.5	352390697.7	141.9	20	70.3	232
2012	169.5	1618.2	.65.1	98.7	312891	172	451.3	1022	516338592	119	63.63	79.2	262
2013	166.5	617.3	107.2	240	326728	36.8	589.3	926.6	6613590843	156.3	40.5	117.6	314.3
2014	177.3	693.19	71.7	221.4	335122.7	137.61	653.9	923.6	990104087	180.6	43.2	338.9	562.2
2015	192	466	71.88	254.2	219529	88.14	588.7	883	1222550381	155.4	64.96	84.13	304.5

Sources: Sampled companies annual reports (2001-2015)

APPENDIX 3

TABLE 1

MULTIPLE REGRESSION OF VAIC AND ROA

Dependent Variable: ROA

Method: Least Squares

Date: 04/09/17 Time: 16:44

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.968560	168.3049	0.047346	0.9632
VAIC	1.910511	0.290358	6.579838	0.0001
LEV	-0.985760	0.428742	-2.299189	0.0443
PC	-0.000514	0.002482	-0.207221	0.8400
TA	2.19E-08	4.46E-08	0.490208	0.6346

R-squared	0.825633	Mean dependent var	314.0200
Adjusted R-squared	0.755886	S.D. dependent var	464.4494
S.E. of regression	229.4748	Akaike info criterion	13.97067
Sum squared resid	526586.8	Schwarz criterion	14.20668
Log likelihood	-99.77999	F-statistic	11.83755
Durbin-Watson stat	2.556850	Prob(F-statistic)	0.000827

Sources: E view result

TABLE 2

MULTIPLE REGRESSIONS OF COMPONENTS OF VAIC AND ROA

Dependent Variable: ROA

Method: Least Squares

Date: 04/09/17 Time: 16:46

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.41.5987	3.41.6589	0.707134	0.4996
HCE	2.278950	1.348490	1.690001	0.01295
SCE	6.905720	7.966584	-0.866836	00.4113
CEE	1.184357	0.545815	2.169885	0.0618
LEV	-0.924398	0.777267	-1.189293	0.2684
PC	-0.000516	0.004115	-0.125431	0.9033
TA	4.56E-08	7.49E-08	0.608953	0.5594

R-squared	0.618954	Mean dependent var	314.0200
Adjusted R-squared	0.333169	S.D. dependent var	464.4494
S.E. of regression	379.2681	Akaike info criterion	15.01909
Sum squared resid	1150754.	Schwarz criterion	15.34951
Log likelihood	-105.6432	F-statistic	2.165805
Durbin-Watson stat	2.496310	Prob(F-statistic)	0.015404

Sources: E view result

TABLE 3

MULTIPLE REGRESSIONS OF VAIC AND ROE

Dependent Variable: ROE

Method: Least Squares

Date: 04/09/17 Time: 16:49

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.12.0154	266.9164	0.794314	0.4455
VAIC	0.227587	0.460482	0.494235	0.6318
LEV	0.738891	0.679947	1.086689	0.3027
PC	0.005338	0.003936	1.356240	0.2049
TA	-1.70E-08	7.07E-08	-0.240481	0.8148

R-squared	0.226182	Mean dependent var	566.6609
Adjusted R-squared	0.08334	S.D. dependent var	349.6472
S.E. of regression	363.9263	Akaike info criterion	14.89298
Sum squared resid	1324424.	Schwarz criterion	15.12900
Log likelihood	-106.6974	F-statistic	0.730734
Durbin-Watson stat	2.183848	Prob(F-statistic)	0.050123

Sources: E view result

TABLE 4

MULTIPLE REGRESSIONS OF COMPONENTS OF VAIC AND ROE

Dependent Variable: ROE

Method: Least Squares

Date: 04/09/17 Time: 16:50

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.677496	1.49.424	1.791873	0.1109
HCE	1.090025	0.589762	1.848245	0.012
SCE	1.822953	3.484184	0.523208	0.031i
CEE	1.280070	0.238712	5.362399	0.0007
LEV	0.327289	0.339938	0.962790	0.3638
PC	0.006280	0.001800	3.489581	0.0082
TA	1.14E-08	3.28E-08	0.348622	0.7364

R-squared	0.871397	Mean dependent var	566.6609
Adjusted R-squared	0.774944	S.D. dependent var	349.6472
S.E. of regression	165.8728	Akaike info criterion	13.36504
Sum squared resid	220110.3	Schwarz criterion	13.69547
Log likelihood	-93.23783	F-statistic	9.034462
Durbin-Watson stat	2.278657	Prob(F-statistic)	0.003304

Sources: E view result

TABLE 5

MULTIPLE REGRESSIONS OF VAIC AND ATO

Dependent Variable: ATO

Method: Least Squares

Date: 04/09/17 Time: 16:52

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	124.1838	113.7303	1.091914	0.3005
VAIC	0.080039	0.196207	0.407933	0.6919
LEV	-0.012552	0.289718	-0.043326	0.9663
PC	0.003054	0.001677	1.821032	0.0986
TA	-8.42E-09	3.01E-08	-0.279582	0.7855

R-squared	0.275001	Mean dependent var	166.5127
Adjusted R-squared	-0.014998	S.D. dependent var	153.9153
S.E. of regression	155.0652	Akaike info criterion	13.18677
Sum squared resid	240452.3	Schwarz criterion	13.42279
Log likelihood	-93.90078	F-statistic	0.948281
Durbin-Watson stat	2.608902	Prob(F-statistic)	0.475720

Sources: E view result

TABLE 6

MULTIPLE REGRESSIONS OF COMPONENTS OF VAIC AND ATO

Dependent Variable: ATO

Method: Least Squares

Date: 04/09/17 Time: 16:53

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.635174	1.484594	1.101428	0.3027
HCE	0.222529	0.585953	0.379773	0.7140
SCE	-2.324599	3.461682	-0.671523	0.5208
CEE	-0.053548	0.237171	-0.225778	0.8270
LEV	0.107763	0.337742	0.319068	0.7578
PC	0.002958	0.001788	1.654387	0.1366
TA	-9.81E-09	3.26E-08	-0.301268	0.7709

R-squared	0.344880	Mean dependent var	166.5127
Adjusted R-squared	0146461	S.D. dependent var	153.9153
S.E. of regression	164.8016	Akaike info criterion	13.35209
Sum squared resid	217276.4	Schwarz criterion	13.68251
Log likelihood	-93.14064	F-statistic	0.701916
Durbin-Watson stat	2.236454	Prob(F-statistic)	0.657390

Sources: E view result

TABLE 7

MULTIPLE REGRESSIONS OF VAIC AND ADM/OPA

Dependent Variable: ADM/OPA

Method: Least Squares

Date: 04/09/17 Time: 16:55

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.40631	5.199332	0.334780	0.7447
VAIC	0.025749	0.089698	0.287064	0.0379
LEV	0.244005	0.132449	1.842262	0.0952
PC	0.004628	0.000767	6.036654	0.0001
TA	1.53E-08	1.38E-08	1.107882	0.2938

R-squared	0.806430	Mean dependent var	141.7120
Adjusted R-squared	0.729002	S.D. dependent var	136.1767
S.E. of regression	70.89012	Akaike info criterion	11.62134
Sum squared resid	50254.09	Schwarz criterion	11.85736
Log likelihood	-82.16006	F-statistic	10.41524
Durbin-Watson stat	2.297996	Prob(F-statistic)	0.001368

Sources: E view result

TABLE 8

MULTIPLE REGRESSIONS OF COMPONENTS OF VAIC AND ADM/OPA

Dependent Variable: ADM/OPA

Method: Least Squares

Date: 04/09/17 Time: 16:56

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.46605	59.39941	0.226703	0.8263
HCE	2.665891	0.234443	0.281053	0.7858
SCE	2.372343	1.385038	1.712837	0.1251
CEE	0.099307	0.094893	-1.046509	0.3259
LEV	0.171960	0.135132	1.272530	0.2389
PC	0.004543	0.000715	6.351023	0.0002
TA	1.25E-08	1.30E-08	0.958695	0.3658

R-squared	0.866024	Mean dependent var	141.7120
Adjusted R-squared	0.765542	S.D. dependent var	136.1767
S.E. of regression	65.93800	Akaike info criterion	11.52003
Sum squared resid	34782.55	Schwarz criterion	11.85045
Log likelihood	-79.40024	F-statistic	8.618681
Durbin-Watson stat	2.400419	Prob(F-statistic)	0.003855

Sources: E view result

TABLE 9

MULTIPLE REGRESSIONS OF VAIC AND EMP

Dependent Variable: EMP

Method: Least Squares

Date: 04/09/17 Time: 16:59

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.6832559	5.249985	0.892051	0.3933
VAIC	-6.4018.67	9.0572.31	0.706824	0.4958
LEV	9.110.773	1.33738.9	0.068124	0.9470
PC	-2.67.4757	7.74.1716	0.345499	0.7369
TA	0.005865	0.013908	0.421711	0.6822

R-squared	0.069890	Mean dependent var	22386307
Adjusted R-squared	0.302153	S.D. dependent var	62728528
S.E. of regression	71580739	Akaike info criterion	39.27175
Sum squared resid	5.12E+16	Schwarz criterion	39.50777
Log likelihood	-289.5381	F-statistic	0.187855
Durbin-Watson stat	2.281306	Prob(F-statistic)	0.939351

Sources: E view result

TABLE 10

MULTIPLE REGRESSIONS OF COMPONENTS OF VAIC AND EMP

Dependent Variable: EMP

Method: Least Squares

Date: 04/09/17 Time: 17:01

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.4976235	71074249	0.773504	0.4615
HCE	-03285.4	280522.3	-0.368190	0.7223
SCE	-0.11904.8	1657264.	-0.248545	0.8100
CEE	-0.048.5	113544.3	-0.387941	0.7082
LEV	0.38860	161692.5	0.240384	0.8161
PC	-0.201	855.9546	-0.330415	0.7496
TA	-0.006952	0.015585	-0.446091	0.6674

R-squared	0.096010	Mean dependent var	22386307
Adjusted R-squared	-0.581982	S.D. dependent var	62728528
S.E. of regression	78897976	Akaike info criterion	39.50993
Sum squared resid	4.98E+16	Schwarz criterion	39.84036
Log likelihood	-289.3245	F-statistic	0.141610
Durbin-Watson stat	2.332405	Prob(F-statistic)	0.985837

Sources: E view result

TABLE 11

MULTIPLE REGRESSIONS OF VAIC AND M/B

Dependent Variable: M/B

Method: Least Squares

Date: 04/09/17 Time: 17:02

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.80848	1.16.4999	0.927768	0.3754
VAIC	0.083315	0.200985	0.414536	0.0382
LEV	-0.080081	0.296773	-0.269839	0.7928
PC	0.009284	0.001718	5.404220	0.0003
TA	-8.36E-09	3.09E-08	-0.270903	0.7920

R-squared	0.761373	Mean dependent var	183.1481
Adjusted R-squared	0.665922	S.D. dependent var	274.8146
S.E. of regression	158.8413	Akaike info criterion	13.23489
Sum squared resid	252305.7	Schwarz criterion	13.47091
Log likelihood	-94.26168	F-statistic	7.976607
Durbin-Watson stat	2.126379	Prob(F-statistic)	0.003719

Sources: E view result

TABLE 12

MULTIPLE REGRESSIONS OF COMPONENTS OF VAIC AND M/B

Dependent Variable: MB

Method: Least Squares

Date: 04/09/17 Time: 17:05

Sample: 2001 2015

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	42.38679	15.12743	0.280198	0.7864
HCE	0.235653	0.597063	0.394688	0.0034
SCE	0.316451	3.527317	0.897694	0.0391
CEE	-0.011076	0.241667	-0.045832	0.9646
LEV	-0.219172	0.344146	-0.636858	0.8420
PC	0.009270	0.001822	5.088467	0.000
TA	-8.26E-09	3.32E-08	-0.249008	0.8096

R-squared	0.786637	Mean dependent var	183.1481
Adjusted R-squared	0.626614	S.D. dependent var	274.8146
S.E. of regression	167.9263	Akaike info criterion	13.38965
Sum squared resid	225593.9	Schwarz criterion	13.72008
Log likelihood	-93.42239	F-statistic	4.915790
Durbin-Watson stat	2.396229	Prob(F-statistic)	0.021418

Sources: E view result

YEAR	ROA	ROE	ATO	ADM OPA	EMP	MB	LEV	PC	TA	HCE
2001	301.5	257.3	84.5	15.55	50846.97	37.29	165.1	272.9	52341941	64.63
2002	101.65	340.164	96.2	103.13	91991	40.95	209.166	3.31	75810222.31	211.093
2003	154.28	583.44	104.2	33.12	126332.1	96.99	248.06	577.63	97294854.77	123.08
2004	372.2	407.2	141.05	22.51	162490	56.392	147.8	733.25	141060061	102.74
2005	278.4	512.4	320.9	115.38	96911261.3	632.6	159.06	7024.8	72949147	158.86
2006	223.57	982.97	444.72	520	2168077	1023	223.75	99977.045	152742117	132.4
2007	1970.4	654.55	243.65	44.62	198020.7	136.26	209.88	700.2	65279265.9	329.5
2008	156.8	295.3	92.13	56.95	3801743.18	84.96	333.8	5469.8	97967422.88	330.7
2009	168.5	439.9	92.4	37.82	230637911	88.53	365.4	2077.6	198166582	106.3
2010	70.7	265.8	83.9	256.6	184583	49.3	180.5	8868.7	280809233	48.7
2011	207	366.2	542.61	105.7	267076.6	66.4	476.3	888.5	352390697.7	141.9
2012	169.5	1618.2	.65.1	98.7	312891	172	451.3	1022	516338592	119
2013	166.5	617.3	107.2	240	326728	36.8	589.3	926.6	6613590843	156.3
2014	177.3	693.19	71.7	221.4	335122.7	137.61	653.9	923.6	990104087	180.6
2015	192	466	71.88	254.2	219529	88.14	588.7	883	1222550381	155.4

YEAR	SCE	CEE	VAIC
2001	16.11	42.801	137.4
2002	48.62	143.06	347.2
2003	15.599	108.32	246.92
2004	30.89	133.76	267.397
2005	37.138	85.02	281.01
2006	28.05	85.34	245.7
2007	27.08	640.36	996.9
2008	12.6	52.86	396.2
2009	21.3	52.4	180

2010	24.3	47.1	120.1
2011	20	70.3	232
2012	63.63	79.2	262
2013	40.5	117.6	314.3
2014	43.2	338.9	562.2
2015	64.96	84.13	304.5