

**DETERMINANTS OF CORPORATE
INVESTMENT IN NIGERIA
APPLICATION OF THE REAL OPTION THEORY**

BY

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CERTIFICATION

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DEDICATION

The journey has been a very long one and was only possible through God. I therefore, dedicate this work to the Almighty God for His mercies, Grace, Favour and the gift of life.

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OSOSUAKPOR, Jonathan Oniovosa

DECLARATION

I declare that this thesis is an original work carried out by me in the department of Economics, Delta State University Abraka. I therefore claim ownership of any error whatsoever on this study.

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ABSTRACT

The study empirically examined the determinants of corporate investment in Nigeria using the real option theory of investment. It is based on daily stock market prices and annual data series of quoted firms in Nigeria over a period of twelve years spanning 2001-2012. Other variables used for this study were obtained from International Financial Statistics (IFS) 2013 and Central Bank of Nigeria (CBN) statistical bulletin various issues. The study measured market, macroeconomic uncertainty variables of inflation, interest and exchange rates; Tobin's Q, the degree of the country's openness to global economy, political environment index, market structure and examines their association with corporate investment. The study was conducted using panel data set adopting fixed effect estimation technique which takes into account potential endogeneity and firm specific-effects. The result show that macroeconomic variables of exchange rate volatility and the degree of openness of the country are strongly detrimental to corporate investment decisions in Nigeria. Furthermore interest rate volatility, inflation volatility and the index of political environment are not detrimental to investment growth in Nigeria, while exchange rate uncertainty exerts substantial negative influence on corporate investment in Nigeria. It is also found that, macroeconomic uncertainty have a greater deterrent for firms with irreversible investment than for firms with more easily reversible investment projects. Again, market structure is a relevant factor influencing corporate investment decisions in Nigeria. Other findings are that investors in Nigeria have a waiting behaviour in the presence of higher uncertainty and the sign of the relationship between uncertainty and corporate investment in Nigeria is ambiguous. Whereas the relationship is positively linear under certain circumstances, it is otherwise in some other circumstances. Investment in Nigeria is highly sensitive to cash flow. The study recommends an appropriate and stable exchange rate policy that makes for easy business planning and forecasting by rational investors. Besides, monetary and fiscal discipline is advocated to limit the uncertainty of exchange rate for investment growth. On the basis of high openness of the economy, the study recommends amongst other measures the erection of wall of tariff on consumption goods that can be produced domestically with liberal commercial policy on producer goods to spur investment projects. On the weak financial system, government could assist to develop the non-depository financial institutions and ensure competition with the depository banks to instill market discipline. As suggestion for further research on the issue, the characteristics of firms' production technologies and investors' risk behaviour should be considered along with other variables that could influence investment decisions of firms in Nigeria.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Investment has been widely described in economic literature as the most volatile component of national output and central to strategies of achieving sustainable economic growth. Yet for over the past one decade, the investment profile in Nigeria has presented very worrisome outlook. For instance, during the period of 2001 to 2012 the average share of investment in GDP is nine percent which is quite unimpressive compared with the investment profile of some other countries in the Sub-Saharan Africa (SSA).

So many factors can affect investment decisions of firms, one of which could be the extent of uncertainty about future events. Uncertainty is a factor that is particularly relevant in environment in which investors have difficulties in predicting future events (Ejedegba, 2006). Developing countries, Nigeria inclusive are highly volatile by nature, with prevalent information problems arising from deficient markets and institutions (Ninh, Herms and Lanjouw, 2000). Inefficient capital markets result to wrong price signals that could affect the efficiency of resource allocation for effective investment which could slow down the growth of an economy (Edo, 2005).

Uncertainty could be a relevant factor influencing investment, and its influence on investment could be either positive or negative (Hartman, 1972 and Dixit and Pindyck, 1994). Uncertainty is widely perceived to cause anxiety and decrease welfare and should be avoided whenever possible. This because it can cause instability in

economic variables, which of course, could adversely affect economic growth through the channel of investment (Tito and Filho, 2007).

Investment models have long ignored relevant features of investment behaviour, namely that investment expenditure may be irreversible and investors may decide to delay in investing their money if they perceive that there is uncertainty surrounding market indicators such as prices of goods, costs of inputs and others factors that are relevant for economic agents to take investment decision. (Jorgenson(1971).

Different investment models have been developed to evaluate investment since it is perceived that when investment projects are correctly valued, it will assist investors in making correct decisions which could help the firm to make workable financial commitments for the survival of the firm through the channel of profitability or value creation. However, the prevalent techniques of Net present value (NPV) and Discounted Cash Flow (DCF) seem incapable of capturing all the important factors that could influence the decisions to invest. To overcome this setback, there is need to develop valuation models that are capable of capturing such features of investment as irreversibility, uncertainty as well as timing flexibility which eventually resulted in plenty of economic literature on real option theory of investment under uncertainty (Myers, 1977).

The NPV and DCF methods of valuation are traditional tools for evaluating the viability of corporate investment opportunities but they have some short comings among which is the fact that these models does leave room for the cost of adjustment (i.e. costs involved in the purchase, installation and resale of the capital goods) Gui, 2011.

To address the problem, there is need to look at the traditional theory of investment again with a view to addressing the weaknesses inherent in this methodology of

investment valuation and in the course of reconsideration, researchers came up with the real options theory to investment.

Mum (2006) complemented also that “in the past, investment decisions were cut and dried”, buy new a new equipment that is more efficient, make more products costing a certain amount and if the benefits outweigh the cost, execute the project or hire more executives and expand the geographical area, and if the marginal increase in forecast sales revenue exceeds the additional salary and implementation cost, then start hiring staff. According to Mum (2006), real life business situations tend to be more difficult than just that, which underscore real option as auseful method ofvaluating firm’s strategic business options as well as serving as a business tool in capital investment decisions under the condition of uncertainty. Therefore the traditional tools for investment valuation assumes a static one time decision making process whereas the real options theory considers the strategic managerial options that certain projects could create underuncertainty and management’s flexibility in exercising, delaying or abandoning these options at different point in time when the position of uncertainty has decreased or has become known to economic agent as time progresses.

The theory of real option incorporates a learning model, such that management makes a better, sound and acceptable strategic decision when some levels of uncertainty have been resolvedovertime (Mum, 2006).

Admittedly, some studies on the factors that determine investment in Nigeria and other Sub Saharan Africa (SSA) countries are available in the literature such as Ajide and Lawanson, (2012), Kalu and James, (2012), Oriavwote and Oyovwi (2013), Busari and Olaniya (1998), Partilo (1998), but most of these studies adopted the traditional method to determine factors that are relevant for firm’s decision to invest. This approach has not given room for flexibility as it relied largely on the NPV criteria

for investment selection and seems to be giving conflicting picture of what determines investment in Nigeria. Against the foregoing background, our main objective in this study is to examine the factors that determine corporate investment in Nigeria, using the methodology applied by the real option investment theory.

This study followed the route adopted by Dixit and Pindyck (1994), in the application of the real option theory method of valuing the viability of investment projects as a better choice to the traditional methodology since we perceive that changes in the Nigerian economic landscape occasioned by the democratically elected government and other economic factors could create some level of bubbles in the economy which may make economic indicators to be volatile .

The real option theory views investment expenditure as either partial or totally sunk cost and that investors may hold back investment if there is uncertainty regarding the prospect of their investment capital until they receive further information that can guide them in making investment expenditure decision. This however depend on if the investment is reversible or irreversible. For real option theory to be used as a method of valuing investment, there must be the presence of uncertainty in the economy that could make the economic conditions to be unfavorable for prospective investors and there must be the absence of lemon market (market for second hand goods) to recover totally the investment expenditure.

Market structure may also influence the decision to invest where uncertainty exist and other factors such as the degree of openness of an economy, political environment are all perceived to sharpen uncertainty and corporate investment relationships.

This study gave empirical justification to those factors that are perceived to be the determinants of corporate investment in Nigeria further to examined the factors that are more crucial for investment decision of corporate investors.

1.2 Statement of the Problem

Investment profile in Nigeria when compared to some countries in Sub-Saharan Africa (SSA) particularly Ghana, Kenya, and South Africa, is not impressive. For instance, for the period of 2001 to 2012, the average share of aggregate investment to GDP in some countries in SSA ranges between 19.3% and 9% with Nigeria recording the lowest average of 9%. As contained in table 2.3. This unimpressive investment profile has been linked to various macroeconomic problems of inflation, besides adverse shocks that have travailed in the economic landscape of the country. In economic literature, adequate growth rate in investment is critical to any macroeconomic strategy targeted at achieving sustainable growth and development. Yet for over one decade, the investment profile in Nigeria has presented very worrisome outlook and this has attracted the attention of policy makers and researchers alike.

Again Nigerian firms faces different forms of uncertainties such as uncertainty of the markets, political uncertainty and macroeconomic uncertainty involving interest rate, exchange rate and inflation rate. Market uncertainty or financial market uncertainty arises from the volatility of stock prices which predicts the performance of the economic conditions (Leahy and Whited, 1996), and (Pindyck, 1991). Stock prices and yield provides the benchmark on which the capital for and returns on investment can be measured, even when such projects are not directly financed through the capital market (Ngugi, Murinde and Green, 2002). Since investors are assumed rational, stock prices provides unique infomation of the shifts in investors view about the future

prospect of companies. Thus, market uncertainty influencing investment decision of corporate investors emanates from the volatility of stock prices.

Persistent interest rate and exchange rate changes, inflationary expectations and political instability are regular features of Nigeria economy which may adversely influence corporate investment decisions (Olaniyan, 2000). This study investigated the Nigerian situation empirically, combining the above market conditions, macroeconomic variables along with the traditional factors that determine corporate investment decisions through the application of the real options theory of investment.

It is necessary at this point to note that declining corporate investment profile sends negative signals to the attainment of macroeconomic goals of economic growth and full employment level since low level of investment increases the vulnerability in an economy (Mlambo and Oshikoya, 2001). Hence, this study identified amongst other the fundamental factors influencing corporate investment in the country besides, the extent of their impact on growth of the economy.

Investment appraisal methods of DCF and NPV have failed to recognize some key factors that could influence the investment decisions of firms (e.g. uncertainty and irreversibility) but the theoretical studies on real options theory of investment presented by Dixit and Pindyck, 1994, suggest an inverse relationship between corporate investment and uncertainty as it demonstrated empirically that when uncertainty is low in an economy the relationship between the duo is positive, whereas it turns negative when uncertainty becomes high (Abel and Eberly, 1999).

Again the NPV method of investment decisions is based on some implicit assumptions that are often overlooked. For instance, it assumes that either the investment is reversible, that is, it can somewhat be undone and all the expenditure recovered when market condition turns out to be worse than anticipated or is

irreversible, a now or never proposition. In other words if investment does not take place now, it may not be able to invest in the future (Dixit and Pindyck, 1994). But in real life, businesses are more complex to be valued and not on such simplistic assumptions and so the valuation method used in business decisions require a paradigm shift which have resulted to the emergence of new literature on real options theory which could be useful as both valuation and strategic business tool in investment decisions of firms. (Dixit and Pindyck, 1994).

Studies using real options theory of investment in Nigeria are scanty and the available literature have not aptly addressed the role played by the degree of openness of an economy and market structure jointly this study therefore filled the gap.

1.3 Objective of the Study

The general objective of this study is to empirically examine the determinants of corporate investment in Nigeria, using the real option theory of investment.

The specific objectives are to:

- (i) Determine the nature of uncertainty-investment relationship (linear or non-linear).
- (ii) Determine the extent to which the degree of openness of a country play a role in investment decisions of firms in Nigeria.
- (iii) Explore the extent to which investment – uncertainty relationship is affects the degree of irreversibility of firms capital expenditures as well as market structure regarding competition and monopoly of firms.
- (iv) Examine the effects of macroeconomic and market uncertainties on corporate investment simultaneously and hence determine the class of

uncertainty that is more relevant to a forward looking investor in Nigeria.

- (v) Examine the influence of political situation of the country on firm's investment decisions in Nigeria.

1.4 Hypotheses of the Study

In this study, we tested the following hypotheses:

- HO₁ That corporate investment – uncertainty relationship is non- linear for a Panel of Nigerian firms.
- HO₂ The degree of openness of the Nigerian economy has no significant effect on firm's corporate investment decisions in Nigeria.
- HO₃ The structural characteristics of firms (competition, monopoly/oligopoly) and the extent to which corporate investment are irreversible has no significant influence on corporate investment – uncertainty relationship in Nigeria.
- HO₄ There is no significant difference between the effect of macroeconomic uncertainty and market uncertainty on corporate investment decisions in Nigeria.
- HO₅ The political situation of the Nigerian economy has no significant effect on firm's investment decisions in Nigeria.

1.5 Significance of the Study

There are numerous of empirical studies on real option theory to corporate investment determination but most of them are mainly focused on developed countries. However empirical work on this issue few in Nigeria. For instance Ejedegba 2006, examines the relationship between corporate investment and uncertainty for some countries in SSA, adopting the real option method for the period of five years, (2001 – 2005). The time dimension for the study was rather too short for meaningful

examination of the behaviour of the variables used for the modelling. Again that study did not consider the influence of market structure and the degree of openness of the economy and their impact on firm's level investment decisions and so this study closed the vacuum.

Most previous studies on this issue mainly adopted the traditional method used to value investment viability. This approach has no room for time flexibility relying largely on the NPV criteria for investment selection. In this study, the traditional method was extended by the uncertainty variables with time flexibility.

Again, studies using traditional investment models did not consider the flaws in the assumption that firms can instantly and costlessly adjust to their optimal capital stock. This assumption may not be realistic because, it is normally costly for firms to adjust their capital stock to optimal levels. This approach is analogous to the NPV rule that is in comparative static framework, as it has no time flexibility. This study adopted the real option theory to investment decision with due consideration to irreversibility of investment that takes into account adjustment cost of capital stock and other factors that sharpen the uncertainty variable.

Furthermore, most of the prior studies have tended to model and estimate investment determinants using aggregate data rather than firm level investment data. Firm level analysis has advantages over aggregate level studies for a number of reasons: First, most of the shocks which are relevant for investment decision are specific to individual firms and aggregation smoothed out the impact of the individual firms behaviour on the entire firms (Bertola and Caballero, 1994). Second, aggregation conceals the reaction of firms' to some random walks (Kalekreuth, 2001). Thus, this work used firm level data set with specific characteristic, ostensibly to avert the

cancelling effect that is associated with aggregation, all to make the work more informative.

Finally this study provided an insight into investor's behaviour in Nigeria with recourse to real option theory of investment following the route of Dixit and Pindyck (1994). In sum, the result and the findings therefore will be useful to policymakers in fine tuning investment policy in line with investor's characteristics in Nigeria.

1.6 Scope of the Study

This study focused on the determinants of corporate investment in Nigeria, using the real option theory. Based on the real option model, the traditional corporate investment model in this study was extended by the nature of the markets in which investors operate (i.e. monopoly, oligopoly and competitive markets), irreversibility of investment, degree of openness of the country to the rest of the world were used as interactive factors that could influence corporate investment decisions, given Nigeria peculiar characteristic of macroeconomic instability.

The study considered stock market prices as investor's financial market variable and macroeconomic variables of interest, exchange, and inflation rates. The study covered a time period of 12 (twelve) years, spanning from 2001 to 2012 for selected non-financial firms duly registered in the Nigerian stock exchange. The choice of period is based on the availability and consistent data on the relevant variables and a period of twelve years beginning from 2001 is to account for the period of smooth transition of democratic governance in Nigeria. The period of twelve years was chosen so that we can make meaningful conclusion of the performance of some of the variable that were used for this analysis over time.

1.7 Limitation of the Study

This study was faced with a lot of limitations that is typical of other academic researches on this issues in Nigeria ranging from institutional problems, human problems to resource limitations

The institutional problems include the dearth and difficulties of obtaining the required data from the authorities of the Nigerian stock exchange. Some of the firm's daily stock prices may be available but the relevant audited financial statements may not be available as most firms published their financials very late.

Another limitation is on the construction of the interactive dummies of market structure (competition, and monopoly/oligopoly). In the study, we classified the firms based on the local industry grouping by the stock exchange. By this form of classification, there is no clear- cut distinction between monopolistic and oligopolistic firms. The approach may be crude though we adopted this in line with similar studies on this issue. (Lensink and Murinde, 2005 for United Kingdom firm classification).

Finally, the risk behaviour of investors and technical progress of firms are other investment variables that would have added value to this work. Unfortunately, we were unable to obtain sufficient information to construct the variables. However, in the face of these bottlenecks, we have made judicious use of the available resources to make this study lucid for effective policy formulation and implementation.

CHAPTER TWO

REVIEW OF RELATED LITERATURE AND THEORETICAL FRAMEWORK

This chapter is organized into five sessions beginning with conceptual issues involving the definition and explanation of concepts such as uncertainty – Investment relationship, degree of openness and its impact on investment, market structure under uncertainty adopting the real option theory, irreversibility of corporate investment, the effect of irreversibility on corporate investment, description of the real option theory to corporate investment solution, the effect of real option on firm investment, Fundamental essence and basics of real option theory to corporate investment, traditional valuation model of NPV.

This is followed with the theoretical literature on investment and effect of uncertainty, the accelerator theory of investment, Marginal Efficiency of Investment Hypothesis, Stock Adjustment Hypothesis, Neoclassical Investment Model, Tobin's Q Theory and the Real Option Theory, empirical contribution to literature relating to developed, emerging and developing economies, overview of the macro economy was aptly presented along with aggregate trend of investment in some selected SSA, a theoretical framework of the traditional model, Tobin's Q model and the Real Options theory of investment.

2.1 Conceptual Issues

2.1.1 Uncertainty - Investment Relationship

Uncertainty is the investor's perception of what will happen to their investment tomorrow if they invest their funds now in an economic project. In other words, investors try to forecast into the future and determine the performance of their investment and such analysis or perception may be due to the fact that necessary

information may be lacking today that will inform investors decision or the economic environment may be such that both market and macroeconomic indicators are unpredictable that may give rise to uncertain outcome in the investment arena. (Dixit and Pindyck, 1994).

Uncertainty is perceived to cause anxiety or decrease in welfare. Thus, most people see uncertainty as harmful and should be avoided (Tito et al, 2007). Its effect on the economy is transmitted through investment decisions of firms.

Kalckreuth (2000), defined uncertainty as a quality of investor's mental representation of the world and it cannot be qualified with the same precision as price or output.

Tito and Filho (2007), are of the opinion that firm's usually face uncertainty over many dimensions, for example, uncertainty about firms output, prices, demand and costs, wages, interest and exchange rates etc.

Uncertainty is significant in investment decisions of firms hence this study reviewed the theoretical basis for the investment – uncertainty relationship. The effect of uncertainty on firms' investment outlay is on top burners and is being debated. Various theories identified that the uncertainty relationship with investment passes through several channels which include irreversibility, financing constraints and risk aversion behavior of investors.

Dixit and Pindyck (1994) examined how option pricing and returns can provide an understanding of investment behaviour when future prices and returns are uncertain and investor's decisions are irreversible. They opined that there exists an option value to delaying an investment decision in order to wait for the arrival of new information on the conditions of the market. The authors further argue "that at a given time, firms invest only and if only the NPV of a project is larger than zero."

2.1.2 Degree of Openness of the Economy

Openness refers to trade liberalization in an economy which has the capacity to encourage investment. On the contrary, protectionism reduces capital accumulation because in the absence of capital flows, investment is determined by the how much in monetary terms of domestic savings that have been made out of total income (Corden, 1974). Degree of openness also refers to the level of trade interactions of countries globally since trading in autarky could reduce the level of economic growth and development.

Nigeria economy for the past one decade has been liberalized both in the financial sector and in the real sector, but the country has not sufficiently benefited from the wave of globalization perhaps due to the nature of our export products and import structure.

2.1.3 Market Structure and Uncertainty

The need to consider the structure of market in which industries are playing cannot be overemphasised as it is very relevant in the study of investment-uncertainty relationship in the standard real options theory of investment under uncertainty,

The market structure we are talking about here is in relation to monopoly, oligopoly and competitive firms. It is assumed that the firm makes investment decisions regardless of competitive interactions. In practice, competition can affect the investment-uncertainty relationship. For instance, Caballero (1991) “show that imperfect competition may intensify the negative investment-uncertainty relationship”. A monopolistic firm may easily postpone its investment because the investment opportunity is always available any time it decides to do so. This argument may also be applicable to an oligopolistic firm, probably to a lesser extent. In contrast, if a firm

operating in a competitive environment waits too long, its competitors will seize the investment opportunity. Therefore, the firm invests quickly to pre-empt the rivals (Abel and Eberly, 1994). In this case, the value of the option to wait becomes less (Grenadier, 2002, and Luehrman, 1998). Thus, competition reduces the negative impact of uncertainty on investment of corporations or firms.

It is also important to look at the size of firms in studying the investment-uncertainty relationship. This is because small firms may have inadequate managerial expertise that limits their ability to reduce adverse effects of possible changes. This would suggest that investment of small firms is likely to be more adversely affected by uncertainty. On the other hand, firms are able to abandon investment at a cost that is increasing with size. This may be reasonable to the extent that larger firms tend to have greater abandonment costs regarding individual investment projects. If abandonment costs are increasing with firm size, similar investment may be deemed as more irreversible by larger firms than that by smaller ones. Therefore, uncertainty, through the channel of irreversibility, may more negatively affect investment by larger firms than that by smaller firms. Thus, the effect of firm size on investment- uncertainty relationship seems to be ambiguous according to these arguments. This therefore is a gateway for further study on this issue in the case with the Nigerian economy.

2.1.4 Irreversibility of Investment

Several authors since the late 1980's have laid emphasis on the fact that irreversibility of investment capital expenditure is an important factor that can impact on investment decisions of firms (Bernanke, 1983; McDonald and Siegel, 1986; Bertola and Caballero, 1994). According to these authors "Irreversibility of investment refers to situation where machinery and equipment a firm uses may be difficult to be resell or

that the resale price may be significantly below the replacement costs". In other words, irreversibility reduces the chances of firms in disposing of used physical capital in order to be able to survive in periods of downturn in an economic environment, and this may make the firm to postpone or suppress investment at the time when uncertainty is prevalent in the economy. It raises the user costs of capital and eventually increases the threshold value of investment.

Also, when investment capital expenditure is irreversible, it introduces an option value to postpone investment until later, when further information on future events is available. When uncertainty level prevalent in an economy is high, the value of the option to hold back or reduce investment projects increases, leading to a drop in current investment outlay.

Irreversibility of investment arises from many sources. Usually, capital is firm or industry specific, implying that it cannot be productively used by a different firm or industry. For example, most capital expenditure in advertising are firm specific hence they are clearly sunk costs. Similarly, investment expenditure on steel plant is industry specific because the plant is designed for the production of steel only. In principle however, it may not be easy to sell the plant to another steel company because of the huge capital outlay and the specificity of the equipment tailored toward the production of steel only and so because of this constraint the cost expended in the equipment should be viewed as sunk, particularly if the industry is a competitive one in the market structure.

Also, investments that are not firm or industry specific are often partly irreversible because buyers in the markets for second hand goods, may not be able to evaluate the quality of the goods and the offer price that corresponds to the average quality in the market. Sellers, on the other hand who knows the quality of the items

they are selling, may be unwilling to sell above-average price in the market in which case they try to establish a meeting point between the buyer and the seller's price. This eventually will lead to selling the stock of investment below the cost or its book value. This is what is termed as "lemons problem" that plagues many such markets (see Akerlof, 1970). For example, office equipment, computers etc. are not industry specific, and although they can be sold to companies in other industries, their resale value will be well below their purchase costs or book value, irrespective of the fact that they could be almost new equipments.

Irreversibility can also arise from government regulations or institutional arrangements. For example, government controls on capital could prevent investors from selling assets and reallocating their resources. Similarly, investments in new workers may be partly irreversible because of high costs of hiring and training the workers (Pindyck, 1991) and so most capital expenditure are in large part irreversible.

2.1.5 Market Uncertainty and Macroeconomic Uncertainty

Nigerian firms are characterized with various forms of uncertainties ranging from market uncertainty to macroeconomic uncertainty. Market uncertainty arises from the volatility of stock prices which predict the performances of the economic conditions so that volatility of the stock market is reflective of the uncertainty that is prevalent in the market generally (Leahy and Whited, 1996).

According to Ngugi, Murinde, and Green, 2000. "Stock prices and the yields provide benchmark against which the cost of capital used for investment and the return on investment can be judged, even if such capital expenditures are not financed directly through the stock market". Since investors are assumed rational, stock prices provide a unique records of the shifts in investors view about the prospects of companies. It

therefore follows that uncertainty of the market influencing investment decisions of corporate firms have its route from the volatility of stock prices.

On the other hand, macroeconomic uncertainty involving interest rate uncertainty, foreign exchange uncertainty, and inflationary rate uncertainty are peculiar features of the Nigerian economy including political instability. These macroeconomic uncertainties if not properly signed could be detrimental to corporate investment. Therefore within the scope this work, we were able to found out the extent to which these variables impacted on corporate investment in Nigeria.

2.1.6 External Debt and its impact on Investment

This has been identified as one of the determinants of corporate investment in economic literature. The reason is that large external debts are disincentive to investment. Debt service payments mitigat the domestic resources available for investment besides raising the domestic interest rates. The effect of external debt could be positive on the growth of the economy particularly if the borrowed funds are appropriately utilized within the public sector.

In this study we did not use this variable because of the fact that we were not able to gather reliable and consistent data.

2.1.7 The Effects of Irreversibility on Corporate Investment

Theory is in fact ambiguous in respect of the impact of irreversibility on the investment-uncertainty relationship. Literature on this relationship contends that a firm that cannot reverse its investment decisions faces a higher cost of capital than a firm with perfectly reversible investment. In other words the higher the level of uncertainty the higher the returns to capital for the firm with irreversible investment, but without affecting the cost of capital for firms with reversible investment.

Abel and Eberly (1995) “considers the opposing hangover impact of a firm that has invested and want to disinvest. Such firm will have more accumulated stock of capital during the period of low demand brought about by high uncertainty but the constraints imposed by irreversibility will prevented it from selling off the capital with a view to reducing the stock”. The constraint to selling the capital stock is brought about by the fact that the investment capital expenditure is irreversible and the potential to realise the investment is bedevilled by the absence of second hand market that would have otherwise made it possible to resell the stock at a value that will make the economic agent to recoup the total investment expenditure on the investment

Pattillo, 1998. Is of the view that “although the user cost effect means that increase in uncertainty reduces irreversible investment,while increase in uncertainty tends to increase the long-run capital stock under irreversibility relative to when investment is reversible. The net effect of uncertainty on the long-run capital stock depends on the balance of these factors and cannot be definitely signed”. Further controversy exists within the irreversible investment literature concerning the role of imperfect competition (Caballero, 1991; Pindyck, 1993). Caballero along the line of Abel and Eberly argue that “under constant returns and infinitely elastic demand curve, an increase in uncertainty will increase investment, even when the investment is irreversible. On the contrary, Pindyck is of the opinion that the result of the competitive investment are overturned when industry equilibrium is considered.

The literature on irreversibility describes investment as the solution to stochastic control problems. In order for investment to take-off immediately, the expected returns of the capital expenditure that is expended on irreversible projects must surpass a threshold value that is higher than the standard costs of capital and any option values which is a function of increasing level of risk or uncertainty.

The irreversible investment theory has some implications which are relevant for policy formulation. The model asserts that the user costs of capital do not so much influence investment demand in most empirical investigations; neither in the aggregate nor at firm level (Chirinko, Fazzari and Meyer, 1999). Changes in the user costs are relevant only for those firms which happens to be near their individual investment threshold, but not for the mass of firms operating below that threshold. The model predicts ‘wait and see’ attitude for periods of high expected returns when the economic outlook is filled with uncertainty (Kalekreuth, 2001).

In general, irreversibility implies asymmetry in adjustment cost of a firm’s investment. For an irreversible investment, it is easier to increase the capital stock of the firm than to sell off the capital stock. Intuitively, when investment is irreversible, there is an option value of waiting or cutting back on investing rather than spending more on new investment.

2.1. 8 Real Options Theory

Mun, 2006. Defined the option theory as “a systematic approach and integrated solution using economic theory, financial theory, management science, decision science, statistics and econometric modeling to value investment opportunities and project capital expenditures”. According to Mun, 2006, “real option is the right, but not the obligation to undertake some business decisions, typically the options to make capital investment in the future. Indeed, real option takes into cognisance the value of managerial flexibility in adapting decisions ostensibly in response to unexpected market development. If future events remove, resolve or otherwise reduce the key sources of uncertainty to some satisfactory level based on available information, the firm may exercise its option and proceed to make full-blown investment projects”. If

however the uncertainty continues or is not adequately resolved, the period of expiration can be extended or the option allowed to lapse, thus limiting any adverse exposure to future losses. In the presence of uncertainty investors may decide to make a choice of what option methodology to use among an array of many options such as the option to wait, alter the scale of operation (i.e. to expand or to contract), abandon, switch input/output, the option to grow scale of operation etc. (Dixit and Pindyck, 1994).

As the growing literature on real option has shown, irreversibility and the choice of delay (option to wait) are crucial characteristics of most investments in reality. Indeed, the ability to delay irreversible investment expenditure can seriously influence the decision to invest. It also undermines the NPV rule which becomes the building block of the neoclassical investment models. The reason being that firms with the opportunity to invest are holding “options” akin to a financial call option, having the right not the obligation to purchase an asset at some future time if it decides to do so. When a firm makes irreversible investment expenditure, it exercises the option, or kills the investment option. In fact, it cancels the idea of holding on to receive new market information that might affect the robustness of the returns on investment or timing of the capital expenditure, and thus cannot disinvest or go back should market conditions change adversely. Therefore the opportunity cost of investing can be large, and investment rules which ignore it can make errors in investment decision which may turn out to be regrettable on the long run. This may help to give explanation to the neoclassical investment theory has so far failed to provide good empirical models of investment behaviour, and has led to over-reliance on forecasts that of some macroeconomic variables such as interest rate are factors that are very powerful in stimulating investment.

In reality, firms invest in projects that are expected to yield a return in excess of a required, or “hurdle” rate (Trigeorgis, 1996). On the downside, firms stay in business for lengthy periods during which it absorbs operating losses, with substantial fall in prices below average variable cost without inducing disinvestment.

2.1.9 The Effect of Real Option Theory on Firm Investment

In order to explore the net effect of the real options on firm investment, it is appropriate to know the condition under which firms wait or invest immediately when a valuable opportunity appears. It is likely that firms will opt for waiting, thus keeping the investment option alive. Keeping the investment alive or the option to wait, is valuable. The value is derived from two sources (Luehrman, 1998). According to Luehrman, 1998 ‘The first source is the time value of money on the deferred expenditure (i.e. expenditure on acquisition of the investment) that would have been incurred if not waiting assuming that investment is constant’. Second is, waiting enables firms to take part in good outcomes (if things improves) and precludes them from being involved in bad outcomes or investment that could turn out to be very bad. Moreover, the higher the level of uncertainty, the more the value of the option to wait According to McDonald and Siegel, 1986. “The positive relationship that exist during the periods of high uncertainty and the value of the option to wait is due to lack of market information that could assist investors to make informed investment decisions” This asymmetry works as follows, Under higher uncertainty, it is possible that the underlying variable (e.g. price or output demand) rises up to high levels, so the net returns from exercising the option of waiting becomes larger. If the underlying variable falls, the firm can lost funds (when killing the option) but that will be limited to only what has been paid for the option. Therefore, uncertainty could have a detrimental impact on investment through the route of the option to wait. The negative effect imposed by the

waiting option chosen may change if the firm makes the choice to abandon. The option to abandon will come with extra advantages to the investor or firm because it allows firms to abandon or reverse the investment so as to reduce the adverse effects that economic downturn could have on the investment project. Hence, this option encourages current investments, but the effect of this option on investment to a large extent depends on the degree to which investment capital expenditure can be reversed under the condition of uncertainty. Again the degree of reversibility of an investment capital expenditure is dependent on the specific nature of the investment (i.e. type of capital stock, demand for its output etc), asymmetry of information, and how well the market for second-hand goods (lemon problem) functions to aid the ability of the firm to sell off the investment with minimum delay and at less transaction cost. If the investment is totally reversible, for example, and the resale price of the investment equalizes its purchase price, then option to wait may not become an effective decision. On the other hand if the investment is not totally reversible, the investment behaviour of firms will ultimately depend largely on both the ability to resell of the investment capital and realise the total cost of investing capital on the project.

The option to expand the scale of investment is made available to firms through the decision to kill the option of waiting or holding back the capital that is scheduled for investment until it is clear that the uncertainty in the economy has worn out and the firm can forecast with some level of accuracy the potential yield on the proposed investment. Since the option to expand gives opportunity for the firms to further invest their capital later on in the future should economic conditions turn out to be favourable, it may discourage current investments level in the economy which brings above the investment on capital expenditure to plummet. Given the opportunity of choosing the option to expand the scale of operation, firms need to take decide on how much of their

budget will be apportioned for current investment now and in the future. In scenario, the price of investment capital is a relevant factor to consider. If the future purchase price of the investment capital is to increase over time, firms may invest more now out of their budget and may not expand in the future otherwise, they would invest less now and expand later. However, the timing of the future expansion and the future purchase price are usually unknown to firms when making investment decisions. The option to contract production is also created after the option to wait has been killed. Unlike the option to expand, this option is valuable only if a downturn occurs because it helps firms to escape the losses that would have otherwise resulted from the variable costs associated with production.

It can be deduced from the above discussion that the net effect of the collection of real options on firm investment may be ambiguous, supporting our theoretical models providing a good background for our empirical study.

2.1.10 Fundamental Essence and Basics of Real Options Theory

The use of the traditional DCF methodology alone is inappropriate in valuing certain strategic projects involving managerial flexibility. In this approach, there is cost associated with investing and the payoff is identical to the payoff on a call option of the underlying asset. If the cost of investment exceeds the value of the underlying asset, the option is left to expire worthlessly, without execution, otherwise, exercising the option by investing will make the returns to be less than the cost expended on the investment in which case firms will decide not to invest (Mun, 2006).

2.1.11 Corporate Investment

In the literature, investment may be grouped under four major broad categories namely, public domestic investment, private domestic investment, foreign direct investment and the portfolio investment. Public investment includes investments by Government and public enterprise on social and economic infrastructures, real estate and tangible asset, while private domestic investment refers to gross fixed capital formation (GCF) with the addition of net changes in the level of inventories. The combination of public investment and private investment is referred to as gross fixed capital formation and this differentiates them from foreign investment. Foreign investment is basically on tangible assets and is referred to as direct foreign investment. It is called portfolio investment if it deals on markets for bonds, shares and other securities such as derivatives etc. (Bakare, 2011).

Corporate investment is used interchangeably with private Investment (Jangili et al, 2010) and so corporate investment is conceptualized as the amount of capital spent on increasing the total assets of a firm. New investment in a firm is made up of new capital that is added to the purchase of new assets or an increase in the balance sheet figure from one period to another. It is therefore the net changes in a firm's capital stock from one year to another year.

Corporate investments could be financed either by internally generated sources of funds, such as accumulated profits in the form of retained earnings, provision for asset decay (depreciation) or from external sources of funding, such as borrowing from the money market, fresh capital injection through the capital market etc. Furthermore at micro level, private investment behaviour is characterized by two main decisions, namely investment financing and profit allocation.

It should be noteworthy to mention here that firms have limited resources which must be optimized among competing uses, hence the very essence of firms' resource allocation.

critically to make appropriate investment decisions for purpose of getting optimal gains and for sustainability of their enterprise.

2.1.12 Traditional Model of the Net Present Value. (NPV)

For the sustainability of firms and to enable businesses remain afloat, corporate investment analysis should model the net returns by comparing the costs and benefits of the proposed investment. This is complex because the cost that is incurred today is certain while the benefits to be reaped in the future are uncertain. In order to accurately evaluate the net return, investors and managers use various kinds of methodologies.

Among the traditional valuation models are the NPV, Internal Rate of Returns (IRR), Payback Methods and Economic Value Added methods. These methodologies have long been welcomed by investors in evaluating investment decisions of projects of firms. The NPV method computes the risk adjusted present value of the projected revenue streams by discounting the stream of future cash flow. Both the NPV and other DCF methodologies have some limitations which include its inability to capture market risk and it may not accurately reflect the overall value contribution of investment projects.

In the early 1980's the academic world and practitioners started looking for alternative valuation methodologies as a solution to the limitations found in the use of the NPV and other DCF method of valuation. This became the building block for researchers and economists as they found a more robust method of constructing and valuing investment by the application of the real option concept which was built upon the foundation of Black-Scholes option pricing model by extending it beyond the

valuation of financing option to the valuation of real assets investment opportunities of projects (Gui, 2011).

The background to the discussion of the application of real option to investment projects requires a careful examination of the similarities and differences between real option investment valuation methodology and the traditional decision analysis using NPV.

A project NPV is the difference between the project's value and its cost all expressed in terms of discounted cash flow (DCF), (Knudsen and Scandizzo, 1996, 2001, 2002). Theoretically, the NPV methodology posit that decision makers should accept all projects which have positive cash flow. This is not in dispute anyway because the NPV rely on the assumption that investment is reversible. If investment is irreversible, it is should be executed now otherwise the the economic agent may stand the chance of losing the opportunity for ever.

The NPV model has failed to address some investment decisions fundamentals because not all investments are reversible. There are pleny investment classes which falls into the category of irreversibility and such investment could cause delay in making investment decision when uncertainty is perceived to be prevalent in an economy. It is therefore clear that the NPV model is flawed due to its inability to consider such irreversible investment of capital expenditure which can affect investment decisions which now added impetus to the popularity of a new found model of the real option theory as posited by Dixit and Pindyck, 1994. Another important point to note in the distinguishing scheme is the fact that NPV does not recognize the managerial alternative of waiting or delaying the execution of the project while real option theory of investment recognizes managerial flexibility.

2.1.13: Political Environment and Corporate Investment.

The wide spread phenomenon of instability in the political landscape in several countries across time and its negative effects on their economic performance has been of interest and subject to debate. The classical study of the determinants of growth of Barro, (1997) tested the effect of indicators of political instability which it considers detrimental to property rights.

Jong – a –Pin (2009) found that higher degree of instability in the political arena of countries can leads to lower economic growth. Hadhek et al, 2012 also contributed to this ascertainment as they posit that political instability reduces domestic and foreign investments through increase in poverty through its effect on growth, in addition to its effect on human capital formation and incertitude in the accumulation of factors of production. Furthermore, political instability could shorten policy-makers horizon leading to sub-optimal short term macroeconomic policies that may not impact significantly on an economy.

2.2 Theoretical Literature

2.2.1 Theoretical Literature on Investment- Uncertainty Relationship

The literature on the determinants of investment is inconclusive and the standard investment theory in its form states succinctly that firm are only encouraged to make invest in a projects at a point where the present value of streams of expected cash flow from the project exceeds the threshold value of investment. In principle, the threshold value increases as the level of uncertainty in the economy at the time increases (Ninh, Hermes and Lanjouw 2000).

Bernanke (1983) undertakes an explicit view of investment dynamics analytically and demonstrated that because irreversibility constraint of most investments, investors

are prepared to wait throughout periods of uncertainty. The study argued that it is advantageous to postpone investment in the face of greater uncertainty because the decision may be irreversible until the uncertainty resolves itself with time. This is the foundation on which the real option theory of investment hinges.

Serven, 1998. view this approach to investment modelling as an opportunity to buy an underlying assets at different points in time, in which case there is the very need of balancing the value of waiting with the opportunity cost of postponing investment decisions should that be the case

Pindyck and Solimano, (1993). hold the position that investors may refuse to invest even when current available rates of return far exceed the cost of capital. The reason being that when investment is irreversible and there is opportunity to delay the investment, such condition become very sensitive to uncertainties over future returns. It follows that an uncertain economic conditions that affects the investors mental perception of riskiness of future cash flows will impact significantly on investment decisions.

Hartman, (1972).examines the effects of uncertainty about output price on the investment decision of a competitive firm and found that with a linearly homogenous production function, increased output price uncertainty makes the competitive firm to raise its investment capital expenditure.

Pindyck, (1982).conducted a study relative to the above but found that increase in the uncertainty about the price level can actually result to an increase in investment only if the marginal adjustment cost function is convex. Flowing from the above review, there is clear indication that the literature on investors behaviour during the period of uncertainty about the variables or economic indicators still leaves open the sign and the persistence of any relationship whatsoever between investment and

uncertainty. Indeed, the survey of the existing theoretical models suggests that, if the nature of investment is irreversible, the presence of uncertainty will reduce investment while competition increases it. Given such ambiguous theoretical relationships, empirical work is required to give a clearer understanding of the true relationship that exists between uncertainty and a firm's decision to invest.

Doshi, Kimar & Yerramilli, (2014). "investigates a long-term measure of uncertainty about oil price which they derived from options on crude oil futures and found that volatility in oil price impacts negatively on capital expenditure and drilling operations of firms in the upstream oil and gas sectors". However, the impact reduces significantly for firms with large size and firms that pay dividends. Again they observed that the impact is stronger during the periods of recession when default spreads are high. Their results reveal that the negative impact of uncertainty about prices in an economy is exacerbated by financial frictions than that of real option value of delaying the investment.

McDonalds, (1998) studies real option and rule of thumb in capital budgeting by asking whether the adopting arbitrary investment criteria such as hurdle rates and profitability index can be used as proxies for more sophisticated real option valuation. He found that for a variety of parameters, particularly hurdle-rates and profitability index rule can provide some results close-to optimal investment decision of rational investors which led to the conclusion that if firms use arbitrary "Rule of thumb" they could arrive at an approximate optimal decision to invest during the period of uncertainty.

Kim & Kung, (2011) studies the relationship that exists when there is economic uncertainty and investment behaviour during such economic condition. They relied on the use of specific assets to address the period of uncertainty in the economy by

constructing measures of assets specifically based on the stability of assets across various industries, using exogenous increases in aggregate uncertainty brought about by changes in major economic and political events prevalent in the economy. Their findings were consistent with theories of irreversibility of investment during the period of uncertainty. They concluded that when there is an increase in the level of uncertainty, firms using more of specific assets experienced a large decrease in investment than those firms using less specific assets.

Bialowolski & Weziak-Bialowolska, (2013). "investigates external factors influencing investment decisions among some selected Polish firms by using company's receivables and firm size as variables and survey data obtained from individual firms with the root mean-square error of measurement estimation technique and found that payment delay is a critical factor influencing investment but the result was overturned when other variables such as macroeconomic and law related variables were introduced in which case they were found to be the most significant factors influencing investment among Polish companies".

Loncar, (2011) "studies investment valuation methodology with the application of real option with key input of random variables adopting Monte Carlo simulation technique and managerial flexibility to build upon the conventional NPV and found that most valuation procedures in the literature which presented applicative model, accept simple premise that the value of the project is not known ahead of time and that managerial decision does not depend on predetermined decision rules, but on managerial aversion towards risk that is on subjective trade-off between project risk and returns".

Samuel, (1996), investigates the evolution of firms investment expenditure using panel of 331 American manufacturing firms for the period of 1972-1990 and found cash flow as the principal determining factor influencing investment

decisions of firm and that managers gives more attention to internally generated funds than valuation of the firms shares or stock.

Zeufack, (1997) “studies the behaviour of investment using manufacturing firms in Cameroun between 1988 and 1992 and found a negative relationship between uncertainty and investment observing that a high adjustment speed and strong capital-profitability elasticity of demand, seems to have a key role in the accumulation of capital by separating samples of 68 firms into two sub-samples, one comprising firms whose majority shareholders were Cameroonians (private, local) and another comprising firms whose majority shareholders were foreigners (private, foreign). Private local firms have higher adjustment speed than foreign ones. One of the most interesting findings from the comparism is a greater perception of uncertainty by private foreign firms, He explained this finding by the non-homogeneity of institutional constraints perceived and faced by the two categories of firms due to information asymmetry. He concluded that one should therefore watch out for the difference in reaction and explicitly take it into account while designing policies aimed of promoting private investment”.

2.2.2 The Accelerator Theory of Investment

The original idea of this theory is traced to the works of Aflalion in 1911 and the modern form was put forward by Clark in 1917. The theory opined that current net investment is a function of income changes. It explains net investment as a function of growth in aggregate demand.

This theory has two versions which are the fixed and flexible accelerator.

The fixed accelerator is characterized by two distinguishing features based on the underlying assumption.

This is expressed as $k = k^*/Y_{t-1}$ -----

(2.2.1)

Where k^* = desired capital stock

Y_t = current level of output.

Equation 1 can be rewritten as $K^*_t = kY_t$ -----

-(2.2.2)

Equation 2 express a firms desired capital stock as a proportion of the output in the current period where k is the factor of proportionality.

The stability of equation 2 depends on the value of k , the actual value of which is a function of the time period within which the analysis is carried out. If the period of analysis is longer the value of k tends toward zero.

Deriving the second version of the fixed accelerator model, we will assume that the current net investment equals the value of the discrepancy between the capital stock desired in the current period and the actual capital stock in the previous period ie.

$I_t = K^*_t - K_{t-1} = \Delta K$ -----

(2.2.3)

A net investment rate that guarantees the optimality of capital stock would yield

$K_{t-1} = K^*_t - K_{t-1} = kY_{t-1}$ -----

(2.2.4)

Substituting equation 4 in 3 yields

$I_t = kY_t - kY_{t-1} = k\Delta Y_t$ -----

(2.2.5)

Vernon Smith (1961) demonstrates what he called the logical inseparability of marginal efficiency and the accelerator as drivers of investment expenditures adopting calculus to derive his results. The accelerator's principle, though simple and elegant in its exposition, has been levied with some thought-provoking criticisms, and such criticisms basically are on the assumptions underlying the building up of the theory. Amongst these criticisms is the assumption of a fixed capital-output coefficient. It is considered not realistic because firms do not operate under the conditions of constant return to scale. In addition to the above, it ignores the possible effect that technological progress could have on the capital-output ratio. Technical progress has the capacity to reduce or lower the amount of capital required for a specific level of output.

Secondly, one of the assumptions of the theory is that the addition of capital is instantaneous. This assumption ignores the possibility of lag in the process of adding to the capital stock. These lags could be time lags between the time of ordering of capital or building up of capital. Thirdly, it assumes that firms' capital stocks are at any time fully employed, an assumption that excludes the possibility of idle capacity, particularly in Nigeria where plants are built with idle capacity in order to provide for flexibility in production. Apart from building plant sizes to be having idle capacity, there are other factors in Nigeria that could result to having idle capacity, such as high cost of funds, raw material shortages, and even foreign exchange shortages. Thus the existence of idle capacity forces firms to operate below installed capacity and this creates a gap between actual and potential output, and so the accelerator's principle breaks down. Fourthly, the accelerator's principle ignores the role of expectations in investment decision making. If investors expect a positive change in aggregate demand to be transitory, such an increase might not elicit investment spending. However, an optimistic business outlook

would make businessmen increase their investment outlay consequent upon an increase in aggregate demand.

2.2.3 Marginal Efficiency of Investment Hypothesis

Marginal efficiency hypothesis is linked to the works of Lord Maynard Keynes. The theory posit that investment decisions depends on differentials of the internal rate of returns by investing in a particular assets and this is called marginal efficiency of investment. The internal rate of returns is defined as the discount rate which will make the profit of the series of annuities given by the returns expected from the capital assets during its life just equal its supply prices.

The distinction at this point is very important because of the assumption of a constant average cost of the capital producing industry irrespective of the number of new equipment produced is not realistic. The marginal efficiency in investment will be compared to the market rate of interest and so it will generate a decision rule for firms considering acquisition of capital goods.

The appropriate rule is, if $MEI > r$, accept investment proposal, where $MEI < r$, reject the investment proposal.

Where, r = market rate of interest.

If $MEI = r$, investment is considered to be at its optimum or equilibrium level.

There are however criticism on the shortcomings levied against this hypothesis which include the fact that it does not give explicit recognition to the role played by expectation in investment decision making. Expectation is very key in an attempt to capture an investor's view about the probability distribution of the possible stream of returns.

Secondly the concept of market rate of interest is not satisfactory and so is questionable because what exist practically in the developing and the underdeveloped

capital market is series of interest but not the market rate of interest. The series of interest are those of lending rates, minimum re-discount rates, rates of treasury bills etc. There are difficulties in accepting any of the above rates in the context of a deregulated economy particularly in Nigeria and so investors must exercise caution in accepting an optimal rate of interest.

Another criticism levied against this hypothesis is that submitted by Eisner and Strotz (1963) that the determinants of the internal rate of returns that is used in discounting the stream of returns to their present value equivalent is both subjective and ambiguous. This is applicable to developing and underdeveloped nations with imperfect capital market.

It is in view of the above shortcoming that makes this theory of little relevance in the analysis of short run investment behaviour of firms.

2.2.4 Stock Adjustment Hypothesis

Numerous defects and criticism in the accelerator theory of investment, led other economists like Chenery (1982) to develop the stock adjustment model of investment behaviour. Among the criticism is the failure of Clerk's model to give explanation to the investment behaviour of business firms under condition of uncertainty. The irreversible nature of investment coupled with uncertainty nature of the duration and change in demand which prompts firms to exercise caution in responding to such changes through increase production capacity of plant were largely ignored. In order to remedy this defect, Chenery (1982) proposed a partial adjustment hypothesis of investment in which firms satisfy extra demand through depletion of inventories and some of it through increases utilization of production capacity.

Furthermore, the existence of time lag or gestation period between the decision to purchase a capital good and actual purchase, delivery and installation runtime in the

case of a firm that purchases its own capital goods were important sources of lag that could not be ignored. The recognition of the relevance of these factors and their incorporation into the simple but rigid accelerator of Clerk and Cofin yields the flexible accelerator of Clenery (Anyanwu & Oaikhena, 1980). Under the flexible or partial hypothesis, firms close only a part of the gap between the current and desired capital stock. This net investment is a fraction k which is the difference between desired capital stock and actual capital stock this can

$$\text{be stated as } \text{Inv} = \frac{k(k^* - K_{E-1})}{E}$$

The above relates net investment to a proportion of the discrepancy between the optimal/desired capital stock of time K , and the actual capital stock in the previous time period K_{E-1} where K is the factor of proportionality, the adjustment coefficient.

Clenery also modified Clerk's assumption of optimal capacity utilization by firms. In reality, firms usually have idle capacity due to demand bottlenecks and supply constraint. In such cases, firms will meet any increase in demand not by addition to stock of capital but through higher utilization of installed plant capacity. Firms faced with an increased demand can respond by hiring additional workers instead of purchasing capital equipment thus eliminating the possibility of any increase in investment.

Secondly, if firms were initially operating at less than full employment, they would respond to the increased demand in output by increasing the level of utilization of their installed capacity hence the accelerator is triggered off.

Finally, increased demand for goods result in increased demand for capital goods triggering off the accelerator in a more forceful fashion than in the case of the above point. The incorporation of these modifications into the constant capital-output ratio simple accelerator model, results in the flexible accelerator characterized for the

foregoing reasons by the partial adjustment of capital stock from the desired to the actual level.

Koyck saw some defects in this hypothesis particularly when referred to the assumption of Lags. In reality, capital stock requirements are influenced by previous period output, in the immediate past period. However, the effect of each previous period output becomes less significant, the more distant in the past the period is. Thus, the adjustment scheme proposed by Koyck is a distributed lag model in which immediate past levels of output exert a greater weight in investment decisions than output in the distant past.

2.2.5 Neoclassical Investment Model

The Neoclassical model of investment behaviour was originally developed by Jorgenson (1963), refined by Hall and Jorgenson (1967) with further refining by Jorgenson and Silbert- (1968). It had its foundation from the Neoclassical theory of firms which states that “the demand for Capital (optimum) level of capital; stock is determined in the process of maximizing the present value of the firm subject to variety of market and non-market constraints”. “They defined the present value of the firm as the firm’s stream of net proceeds”. Under the assumption of unimpeded access to the capital markets, they assert that firms could borrow or lend to achieve the desired time distribution of income to owners and by so doing, they maximize utility. This assertion is tantamount to stating that firms maximize the present value of the flow of net proceeds being the excess of gross revenue over cost of labour, rental price of capital and taxes.

Hall and Jorgenson (1967) developed a variant that allows for partial adjustment with appropriate lag in the context of the hypothesized net investment model. They hypothesized net investment to be a function of the weighted average of all past-

changes in capital stock. Some short coming notably among which is the criticism which borders on various aspects of the theory especially its assumptions are: Firstly, that of unitary elasticity of factor substitution is an assumption that has been considered as inappropriate by Sisner and Nadin (1968) and secondly, the axiom of a constant prefix profit rate of returns as a proxy for actual rate of returns on capital. In this regard, Bischoff (1969) “advocated weighted average of different markets rates as a better proxy”.In spite of the short comings, the theory has been applauded as a more generalized and useful investment approach because it captures the accelerator effect and the action which affects the cost of capital.

2.2.6 Tobin’s Q. Theory

The q- theory of investment was developed by James Tobin in 1969. It is a dynamic investment theory which is based on the premise that investment decision depends on the ratio of the market value of a firm’s financial assets to the replacement cost.

If we say that MVA = Market Value of existing asset

CRA = Asset Replacement Cost.

Then, $Q = MVA/CRA$

The value of Q in the ratio guides the firm in making investment decisions depending on whether or not the time for the analysis is a short or long term. The value of q could be less than, equal to or greater than 1 i.e. $q \geq 1$. In the long-run, q may not equal one owing to lags and disequilibrium in the relevant factors. However, the lags disequilibrium gets eliminated in the long run and within the time period, the price of capital equal its productivity.

When the value of q exceeds one, the decision to carry out investment proposals becomes a rational one but would be irrational if the value is less than one. Investment

will only be profitable if the return on an investment outlay increases the market value of the firm.

This theory was also criticized on the ground that the q-ratio on which the theory is based is an average ratio and so, the marginal rather than the average ratio more critically affect investment decision making. However, Summers, (1981) demonstrated that the average q and the marginal q ratios are roughly equal.

2.2.7 Real Option Theory

Economics scholars and analyst have long recognized that models based on a simple discounted factor, (DCF) rules are weakened by their failure to clearly account for the opportunity costs of irreversibility when investments in capital are sunk cost (Abel, 1983, Arrow, 1968).

The traditional investment model takes the cost of capital employed as a period rental cost and assumes that capital can be reallocated to other uses. When capital is substantially sunk, the firm faces an opportunity cost due to the loss of flexibility that results from difficulties to reverse the action.

In analysing uncertainty, many analysts seem to be lopsided with the analysis of the negative side of uncertainty and this will make a rational investor to miss the opportunity components that provide the upside. The real option is the only methodology that gives prominence to the positive potential for uncertainty and this is hinged on the argument that uncertainty sometimes can be a source of joy or additional value especially for investors who takes position to leverage on the advantage of it. The real option approach has its foundation in two elements, viz: the capacity of individual or investors to learn from what is happening around them and their willingness and ability to modify behaviour based upon the learning. Put in another form, in the real

option approach, we use current and updated knowledge or information to expand opportunities while reducing uncertainty or danger.

Given the option framework, an investor's should take the following three important steps, first, by building on the fortune to increase possible profits and this is called the option to expand.

Secondly, investor is to scale down or abandon an investment when information received contain bad news and this is called option of abandonment and this will allow a rational economic agent to cut losses. Thirdly, it helps to hold off from making further investment if the information suggests ambivalence about future prospects and this is called the option to delay or wait. The purpose of waiting is to give the investor time to gather further information with the expectation that the market information will make the investment attractive. The real option approach, demonstrates that opportunity cost is proportional to the level of uncertainty associated with the investment as well as degree of irreversibility.

As uncertainty increases, the value of flexible strategic position increases relative to a more irreversible one. Considering the total uncertainty, rather than just the systematic component of it, is an important feature that distinguishes the real option theory from the traditional investment theory.

The real option investment valuation approach has been well applauded. For instance, the studies of Amran and Kulatileka and Copeland & Keenan have also advanced real option research, making the concept applicable to more industries. As a result of this research advancement, the energy sector has reported that a number of sharp performers within the industry view their investment opportunities intuitively or instinctively as real options, and are ready to tap possible future cash flows without making a final decision to invest until the potential is confirmed.

2.3 Empirical Contribution to Literature

There exist empirical literatures on the determinants of corporate or private investment in developing, emerging economies and developed countries but literatures on the application of real option to investment valuation is scanty in developing countries particularly in Nigeria and this has created the gateway for this study.

2.3.1 Review of Empirical Literature on Investment

Studies on the nature of the relationship between investment and uncertainty have been concerned with the decisions of firms that are competitive with irreversible investments in the developed world and other regions outside our interest. Although the empirical models find mixed results, majority of them appear to lend support to adverse effects of uncertainty on firm investment given the presence of irreversibility. However, the adverse effects of uncertainty on investment may be reduced under competition. The relevant empirical works are reviewed as follows:

2.3.2 Empirical Studies on Developed Countries

Lensink and Murinde (2005). empirically investigates the theoretical underpinnings of the sign and the relation between uncertainty and investment using firm level data that is based on a survey of 197 UK firms for the period 1995-1999 and found that there is a threshold effect on the relationship between investment and uncertainty which mimic a point that encourages investment during the period of uncertainty. In that study it was asserted that the relationship is positive at low level of uncertainty but becomes negative when uncertainty level is higher.

Grenadier, (2002). investigates the impact of uncertainty on monopoly and competitive firms and found that the option to wait depends on large positive value of NPV but with competition the value to wait is eroded because competition will want to rush to take up the advantage resulting to investment at close to zero NPV threshold.

Leahy, and Whited, (1996). Investigates the impact of uncertainty on investment adopting a panel of 600 United States manufacturing firm and the variance of firms daily stock returns as proxy for price volatility and a negative association between the uncertainty proxy and investment, but the result disappears with the introduction of Tobin's Q to the model. It still remain irrelevant when output and cash flow variables were controlled for. Based on these results, the study place reliance on Tobin's Q as a medium through which uncertainty could impact on investment.

Ogawa, and Suzuki, (2000). empirically analysed uncertainty – investment relationship using 389 Japanese manufacturing firms listed in Tokyo stock exchange for the period of 1970-1993 adopting the conditional standard deviation of the growth of sales as proxy for uncertainty. They author found a negative association of uncertainty with investment when the uncertainty variable is constructed using the conventional standard deviation measure and the Autoregressive Conditional Homoscedasticity (ARCH) model.

Driver, et al. (1996). investigates the investment – uncertainty relationship by proxying volatility of market share for demand uncertainty which they conceptualised as the summed absolute value of the difference of the proportionate time change in its own shares and that of competitors and found that the uncertainty about demand variable has a negative effect on the firms' investment.

Bond, Moessner, Mumtaz and Syed (2005). used some different uncertainty measures for individual UK companies to find the association between the investment – uncertainty behaviour at firm level. The authors used panel data involving 655 quoted UK firms but excluded firms in the financial sector for the period of 1987-2000 adopting volatility of daily share prices, volatility of monthly consensus earnings forecasts, and the variance of forecast errors for the consensus forecasts as proxy for

uncertainty. They found these variables used individually have negative effects on investment but when they were considered jointly, both volatility measures were informative, and provided distinct information that helps to explain firm-level investment spending behaviour.

Bo, Jacobs, and Sterken (2001).examine a threshold investment- uncertainty model for Dutch firms and found that at when uncertainty is low, the estimated accelerator effect on investment is higher than when uncertainty is high. This outcome indicates that firms delay investment because of the positive values of waiting.

Bulan (2003) examines real option, irreversibility of investment relations during periods of uncertainty by adopting a panel data of 2722 US firms using volatility of the stock returns broken down into firms, industry and market level components as proxies for uncertainty. The findings of the author support that a negative relationship exist between firm-specific uncertainty and investment, not captured by Tobin's Q or cash flow. A critical analysis of this position also show that the effect of uncertainty may be stronger for firms that are large and less competitive. Besides, industry-specific uncertainty is important when considering firms that engage in irreversible investment.

Guiso, and Parigi, (1999). "investigate the relationship between investment and uncertainty using cross-sectional survey data from manufacturing sector of firms based in Italy and found a strong evidence which is suggestive that the relationship between investment and uncertainty is negative. However, their cross section data set used did not give room to explore the effect of uncertainty and irreversibility of investment dynamics".

Bond and Lombardi, (2006). "Examined of real option effect induced by uncertainty factors and irreversibility of fixed capital using Italian Company data set

following the route of Bloom et al. (2007), they emphasized that this model has a slower response of investment to demand shocks”. However considering that their measure of idiosyncratic, uncertainty may be questioned on the ground that share prices are also influenced by noise traders, speculative bubbles and irrational exuberance, and these sources of volatility are relevant to a firm when making decision to invest, Bond and Lombardi (2006), went further to use data of firms expectation of future investment available from the Bank of Italy survey of investment and manufacturing to construct a measure of uncertainty based on firm forecast errors in defiant to Guiso and Parigi cross-section measure of uncertainty, their proxy is time varying and therefore allow them to explore the impact of uncertainty on accumulation of capital. This unlike some previous measures in the empirical literature, their study is not related to any specific source of uncertainty, and is more likely to reflect uncertainty about a range of factors that may influence capital expenditure decisions. It is important, to note that in previous research their proxy was based on the assessment of decision makers who have informed knowledge and bears a direct responsibility in the planning and implementation of a firm’s investment project. Their result suggests heterogeneous and non-linear dynamics whereby current investment respond more slowly to real growth in sales for those firms that faces higher uncertainty and they also found evidence of predicted non-linear response of real sale growth rate to investment.

Bond and Lombardi, (2006). Investigates the relationship between capital accumulation and uncertainty and found that the impact of uncertainty on capital accumulation in the long run is theoretically ambiguous.

Abel and Eberly. (1996), models a firm’s optimal investment policy under the condition of uncertainty and partial capital irreversibility. This is quite different from earlier contribution that had focused on completely irreversible investment during the

period of uncertainty. They found a tractable solution for the more realistic case of partially irreversible investment. They also used the assumption of a firm operating a single line of capital with a constant return to scale Cobb-Douglas production function with an inelastic demand curve, and found that the optimal investment rule basically can be proxied by the standard formula for cost of capital postulated by Jorgenson's multiplicative term representing the real option effect. In particular, by defining P as a stochastic demand term following a Brownian motion.

k = firm's capital stock and

let $0 < a < 1$, they derived the following threshold based investment policy.

$$a^{-1} \geq b \times Q_i \times P \times K$$

$$S/QD < a \times P \times K \times b \times Q_i$$

$$a \times P \times K \leq S/QD$$

Where b and S are the Jorgesonian user costs relevant for purchase and sales under uncertainty respectively with $b > S$ reflecting the assumption that Capital can only be sold for a price less than that at which it must be purchased.

Q_i and QD are both greater than unity and refers to investment and disinvestment real option effect and are increasing in various parameters of the model such as the level of demand uncertainty and the degree to which investment capital expenditure are irreversibility.

2.3.3 Empirical Literature on Emerging Economies

Ninh, Hermes and Lanjouw, (2000).” Empirically investigates the irreversibility of investment and the relationship between investment and uncertainty using survey data set of 210 rice-milling firms in the Mekong River Delta in Vietnam during the year 2000 and found that the relationship between investment and uncertainty is influenced by the nature of investment with respect to whether it is irreversible or reversible but

the indications revealed from the empirical study support the fact that irreversibility increases, the negative association between uncertainty and investment”.

Bo and Zhang (2002), examined the impact of uncertainty on investment, using firm-level information from the machine industry in Liaoning province, China and found that demand and labour cost uncertainties do not influence investment for state-owned firms. Yet, for corporate firms, labour cost uncertainty positively affects investment.

Serven (2003) examines the nexus between uncertainty of real exchange rate and private investment using a GARCH-based measure of volatility component of real exchange rate and found that it has a negative and significant impact on investment, after controlling for other standard determinants of investment, their potential endogeneity meaning that the effect of uncertainty on investment is not uniform evidencing threshold effects that imply that uncertainty only matters when it goes above some critical level. In addition, the author stresses that the negative effect of real exchange rate uncertainty on investment is significantly large in economies that are highly open to trade and in those with less developed financial systems. This study however made use of aggregate data with its attendant caveats as opposed to firm level data however the study was not directed to the region of our interest.

Farla,(201). “examines macro and micro determinants of firm’s investment pattern using data from 101 emerging and developing economies adopting multi-levelled probit model the factors that trigger investment using a multi-levelled Helms selection model to study factors that significantly impact on a firm’s investment to sales ratio”. The variables used for macro data include real GDP in constant prices, growth measured in logarithm and change in GDP in respect to previous year and the degree of financial openness, percentage of interest rate, countries institutional development using two proxies- property rights protection and indexes of corruption, political

stability. The variables used for the micro organization include total annual expenditure for purchases of equipment and machineries, investment to sales ratio, capital as ratio of labour and found that both micro and macro determinants explained investment behaviour and that firm investment behaviour is heterogeneous in nature and has little dependency on the country macroeconomic settings. They further found that on the average firms which are completely foreign owned have a relatively lower investment to sales ratio, meaning that the probability of investing is higher for firms located in countries with more property right protection and control of corruption and that foreign owned firms located in countries with good institutions invest more. They concluded that higher level of non-investment across firms suggest that irreversibility of fixed capital is a strong obstacle to investment.

Bulan, (2004). investigates real options behaviour in capital budgeting decision using a firm-level of paired data set of US companies in the manufacturing sector by looking at a relationship that exist between the firm's investment capital ratio and uncertainty given that the irreversibility of capital is derived from assets specificity at the industry level, increased industry uncertainty displays a negative impact on firms investment consistent with real option behaviour.

Sarkar, (2000). demonstrates in his article on investment – uncertainty relationship with the application of real option model that the idea of a negative uncertainty- investment relationship may not be correct and he show that an increase in uncertainty can actually increase the probability of investment thereby resulting to a positive impact on investment. The model used earning rather than firms value and systematic risk explicitly in line with the canonical real options model posited by McDonald and Siegel (1986) and found that an increase in uncertainty encourages investment, contrary to what the literature generally predicts.

Pindyck, (1990). modelled investment that are irreversible using contingent claims analysis. In spite of the strength and weaknesses of the methodology, he found that investment rule depends on various parameters that come from the market environment.

2.3.4 Empirical Studies in Developing Countries

The empirical studies on the relationship existing between investment and uncertainty in developing countries is scanty. Although few literature abound for instance, Ekpo and Egwaikhide, (1998). using Nigerian aggregate data found that debt related uncertainty has adverse effects on private investment in Nigeria in the debt-overhang scenario.

Busari and Olaniyan (1998) investigate uncertainty about policy in the Nigerian economy adopting aggregate data set obtained from various sectors and found that fiscal deficits and inflation uncertainties negatively and significantly affect private investment decisions of firms, with exchange rate uncertainty exhibiting a weak and negative relationship.

Pattillo, (1998). examines the impact of uncertainty on investment behaviour of Ghanaian manufacturing firms using a model of irreversible investment. The result provides support that firms develop the attitude to wait and for further information before investing their resources in projects during the period of uncertainty up to a point where the marginal revenue product of capital, (MRPK) equal to the firm-specific hurdle level. Furthermore, higher uncertainty triggers investment, although there is no overwhelming evidence that this effect is stronger for firms with more irreversible investment. The results indicate that the relationship between uncertainty and

investment is negative and the effect is significantly higher for firms with more irreversible investment.

Ngugi, Murinde and Green (2002) investigate the response of market microstructure to revitalization of the Nairobi Stock Exchange (NSE) and obtained results which suggest higher market risk in the reform period. Specifically, the rise in stock returns may be associated with the higher stock prices, which may reflect investors demand for higher premium rather than an increase in demand for share trading. It follows that stock prices related uncertainty may be adverse to investment as investors may demand for higher premium rather than increase in demand for share trading.

Most of the empirical studies in this field used aggregate data, either at the macro or industrial sector level and are focused on advanced economies, analysing the relationship between investment and uncertainty by explicitly accounting for the role of irreversibility of investment. Majority of the studies provide a negative relationship between investment and uncertainty in one form or the other. Making use of aggregate data alone in determining how uncertainty affects a firm's investment decisions may give a misleading picture because of the cancelling effect of different shocks for different firms. The discussion so far on the empirical studies suggests that, although there is quite some research work for developing countries on the relationship between investment and uncertainty with the application of the real option theory, few empirical evidence abound for Nigeria to the best of our knowledge. In our view, uncertainty may be a particularly relevant factor determining investment in developing economies like Nigeria. These economies as earlier remarked, are generally volatile by nature, since the economic activities are less diversified. Moreover, investment in such economies may be more irreversible because of the under-developed nature of the

market for second hand goods. In the above connection Since investment by firms in Nigeria setting are subject to various types of uncertainty such as market and macroeconomic uncertainties involving exchange rate uncertainty, interest rate uncertainty and inflation uncertainty), the question now is which of these uncertainties is more important to rational investors?

Donwa and Agbontaen(2010) examines the trend and dynamics of investment in Nigeria using data set from 1970 to 2008 in the Nigerian economy by adopting the co-integration econometric method to estimate the dynamics of the variables. They employed, real and lag values of investment, exchange rate, capital performance and real values of market size, macroeconomics stability and political stability and found that inertia is responsible for the variation in domestic investment in Nigeria. Also, they were convinced that market fundamentals do no encourage domestic investment and that present values of exchange rate had stronger effects on domestic investment and the macroeconomic and political conditions reveal reasonable level of instability that reduce the progress of domestic investment both in the short and long run in Nigeria. They recommended that Government should develop policies for necessary adjustment of exchange rate encourage domestic investment. Again, to resolve the inability of capital to perform as a result of uncertainty, capital should be used productively and banks should ensure the effective utilization of capital to achieve the desired investment objectives of the nation.

Ajide and Lawanson(2012) examines the determinants of domestic private investment in Nigeriaduring theperiod spanning from 1970 to 2010, applying variables of public investment, GDP, real rate of interest, rate of exchange , credit to private sector, terms of trade, external debts and reforms dummies as variables and found that

public investment, real GDP and terms of trade are statistically significant during the short run period.

Kalu and James (2012) examine the determinants of private investment in Nigeria manufacturing sector over the period 1970 to 2010, using the OLS estimation technique, on variables of nominal exchange rate, corporate income tax and the index of manufacturing output in their logarithm form. They found that the manufacturing output significantly responded to the contemporaneous perturbation in the values of nominal exchange rate, policy lending rate, and the corporate income tax implying a high tendency of recovering from deviation from their equilibrium values in subsequent periods and so they recommended that Nigeria tax design should encourage domestic consumption expenditure within the domestic economy and this should be accompanied by strategies that encourage domestic consumption. Furthermore they recommended that selective and protectionist policies should be encouraged to boost domestic private investment in Nigeria local firms from unfavorable external competitions.

Oriavwote and Oyovwi, (2013) investigate the behaviour of corporate investment in Nigeria using data covering the period between 1980 and 2011. The result indicates that government expenditure on building and developing infrastructures has been beneficial to corporate investors in Nigeria. The Johansen cointegration test evidently supports the long run relationship among the variables and the significant and negatively signed Error Correction Model (ECM) suggest a satisfactory speed of adjustment. They recommended that Government should intensify efforts to tackle the high inflation prevalent in the economy with a view to increasing the competitiveness of the economy relative to global economy.

Bakare, (2011) studies the determinants of private domestic investment in Nigeria adopting a time series data and an error correction mechanism and the results

suggests that political upheavals may have created a climate hostile to private investment in Nigeria but the overall measure of political and macroeconomic instability has been a hindrance to private investment thereby calling for the development of the infrastructural base of the economy in order to promote the private sector investment potentials.

Doshi, et al (2014). “investigates a long-term measures of uncertainty about oil price which they derived from options on crude oil futures and found that volatility in oil price impact negatively on capital expenditure and drilling operations of firms in the upstream oil and gas sectors”. However, the impact reduces significantly for firms with large size and firms that pay dividends. Again they observed that the impact is stronger during the periods of recession when default spreads are high. Their results reveals that the negative impact of uncertainty about prices in an economy is exacerbated by financial frictions than that of real option value of delaying the investment.

Kim & Kung, (2011) studies the relationship that exist when there is economic uncertainty and investment behaviour during such economic condition. They relied on the use of specific assets to address the period of uncertainty in the economy by constructing measures of assets specifically based on the stability of assets across various industries, using exogenous increases in aggregate uncertainty brought about by changes in major economic and political events prevalent in the economy. Their findings were consistent with theories of irreversibility of investment during the period of uncertainty. They concluded that when there is an increase in the level of uncertainty, firms using more of specific assets experienced a large decrease in investment than those firms using less specific assets

Pattillo, (1998).examines the impact of uncertainty on investment behaviour of Ghanaian manufacturing firms using a model of irreversible investment. The result provides support that firms develops the attitude to wait and for further information before investing their resources in projects during the period of uncertainty up to a point where the marginal revenue product of capital, (MRPK) equal to the firm-specific hurdle level. Furthermore, higher uncertainty triggers investment, although there no overwhelming evidence that this effect is stronger for firms with more irreversible investment. The results indicate that the relationship between uncertainty and investment is negative and the effect is significantly higher for firms with more irreversible investment.

Bloom, (2000). “investigates the impact of uncertainty on investment, using the Cobb-Douglas production function and found that irreversibility has an important role in the short-run dynamics of investment”.

Soleymani and Akbari, (2011) investigates the relationship between exchange rate uncertainty and domestic investment using data set covering 1975 to 2006 adopting fixed effects over a panel data modelling techniques and found a non-linear relationship between the exchange rate uncertainty and investment..

Saman, (2007). analyses the relationship between macroeconomic uncertainty variables and investment in Romania over the period 2000 – 2008 using different measure of price and exchange rate volatility. They introduced a linear and quadratic term in the investment equation and found a non-linear effect of uncertainty on investment.

Ejedegba (2006), examines the relationship between corporate investment and uncertainty in some Sub-Saharan Africa countries (SSA), with the application of real option theory of investment over annual data set of several stock exchanges in SSA for

the period of 2001 – 2005. The study evoked variables of inflation rate, real interest rate and real exchange rate, and examined their association with corporate investment employing the Ordinary Least Squares (OLS) and Fixed-Effects econometric methods to allowing for firms specific effects and parameter heterogeneity across these countries. The author found that uncertainty has an independent negative impact on investment, although irreversibility reinforces the negativity. Also it was asserted that the outcome would be upturned if the sample firms operate in competitive market structure. The macroeconomic uncertainty variables (except inflation rate uncertainty) explored are observed detrimental to investment decisions with exchange rate uncertainty having considerable negative coefficient and thus more informative to a rational investor in SSA. Furthermore the relationship between corporate investment and uncertainty in SSA was found to be non-linear meaning that at low level of uncertainty, the relationship is positive whereas it becomes negative as uncertainty increases above certain critical level. In that work the period of study was rather too short for more detailed verification of the subject matter and the work tends to undermine the influence of technical progress and openness of an economy to firm level investment decisions. This work therefore seeks to address the vacuum.

Hadhek and Mohammed, (2012). Identifies the impact of political instability on investment and economic growth by using a dynamic panel model on annual data from eleven countries selected from Africa region over the period of 2000 to 2009. They found that political instability has no impact on economic growth through the channel of investment

2.4 An Overview of the Macroeconomic Environment in Nigeria

Stability of macroeconomic variables sends important signals to the private sector about the direction of economic policies. Such stability facilitates long-term planning and investment decisions, by encouraging savings and capital accumulation. On the other hand, excessive volatility of some important macroeconomic variables makes it difficult and costly for economic agents to extract the correct signals from real returns to investment and this can lead to inefficient allocation of resources (Barro, 1990).

Many variables have been used to measure macroeconomic instability amongst which are real interest rates, variability of real exchange rates, inflation rates, fiscal deficits, domestic credits, and external debt (Serven, 1998, Pindyck and Solimano, 1993). However, this study, used interest rate, exchange rate and inflation rate volatility, as measures for macroeconomic instability.

High and volatile inflationary rate constitute an important signal of macroeconomic instability, which can have an adverse effect on corporate investment by distorting the information content of relative prices, thus increasing the riskiness of long-term investment.

Again interest rate fluctuation and exchange rate volatility constitute other sources of risk in the macroeconomic environment though the sign of the nominal exchange rate is not a-priori clear. For instance while a devaluation of the nominal exchange rate might cause the cost of imported capital to increase, resulting in decreased corporate investment, an appreciation of the nominal exchange rate causes a deterioration of the external competitiveness and thus lead to decline in investment. Excessive interest rate fluctuation is another factor that can also influence corporate investment. In addition, corporate investment decision is assumed to be influenced by external debt burden. External debt crisis pervade Nigeria particularly in the nineties though with

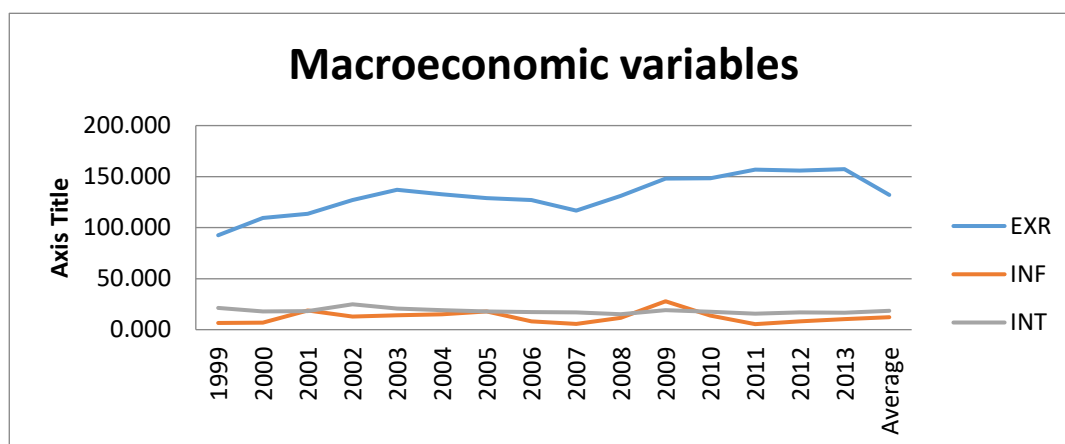
compassionate relief from the creditors in 2005, but debts the periods of 2011 debts have started mounting at the wake of democratic dispensation. Key debt indicators in the country have continued to deteriorate while the debt position is becoming unsustainable. Debt overhang could depress investment and in fact seriously constrain the scope of macroeconomic policy making (see Obadan, 2004). The deleterious effect of debt crisis on investment stemming from the creation of debt overhang, leads to credit rationing and eventual investment slow down (Savvides, 1992). High ratio of external debt to GDP can reduce the incentive for corporate investment. However, the expected effect of external debt on corporate investment is ambiguous. It could be argued though that in the scenario where firms make use of external debt optimally, it could help to alleviate the problem of liquidity constraints. However, we cannot rule out the negative effects on corporate investment based on the argument above.

Table 2.1: Trend of Macroeconomic Variables in Nigeria 1999 - 2013

YEAR	EXR	INF	INT
1999	92.528	6.6	21.32
2000	109.550	6.9	17.98
2001	113.450	18.9	18.29
2002	126.900	12.9	24.85

2003	137.000	14	20.71
2004	132.800	15	19.18
2005	129.000	17.9	17.95
2006	127.000	8.2	17.26
2007	116.800	5.6	16.94
2008	131.250	11.6	15.14
2009	148.100	27.8	18.99
2010	148.213	13.72	17.59
2011	156.700	5.4	15.78
2012	155.920	8.2	16.79
2013	157.311	10.25	16.72
Average	132.16	12.20	18.37

Source: Author Construction 2016



Source author construction 2016.

A critical look at Table 2.1 and fig 2.1 shows that the nominal exchange rate depreciated significantly with average annual rate of 132.16%. The highly depreciated exchange rate is indicative of conscious efforts by Nigeria government particularly from 1999 when the country became re-awaken in democratic rule, ostensibly to stimulate investment.

Again from the Table 2.1, average annual inflation rate is observed declining from the peak of 27.8% in 2009 to 12.20% and a low of 5.4% in 2011. Since then, inflation rate has been maintained within annual average of 10 %.

Also a glance at the Table 2.1 and figure 2.1 revealed average annual interest rate to be 18.37. A low of 15.78 % average interest rate was maintained in 2011 and has been sustained within the region to date.

Table 2.1 Macroeconomic Variables in Nigeria 1983 – 2013

Date	EXR	INF	INT
1983	0.749	23.2	10
1984	0.808	39.6	12.5
1985	1.000	5.5	9.25
1986	3.317	5.4	10.5
1987	4.192	10.2	17.5
1988	5.353	38.3	16.5
1989	7.650	40.9	26.8
1990	9.000	7.5	25.5
1991	9.755	13	20.01
1992	19.661	44.2	29.8
1993	22.631	57.2	18.32
1994	21.886	57	21
1995	21.886	72.8	20.18
1996	21.886	29.3	19.74
1997	21.886	8.5	13.54
1998	21.886	10	18.29
1999	92.528	6.6	21.32
2000	109.550	6.9	17.98
2001	113.450	18.9	18.29
2002	126.900	12.9	24.85
2003	137.000	14	20.71
2004	132.800	15	19.18
2005	129.000	17.9	17.95
2006	127.000	8.2	17.26
2007	116.800	5.6	16.94
2008	131.250	11.6	15.14
2009	148.100	27.8	18.99
2010	148.213	13.72	17.59
2011	156.700	5.4	15.78
2012	155.920	8.2	16.79
2013	157.311	10.25	16.72
Total	70.20	20.82	18.22

Source: International Financial
Statistics 2013

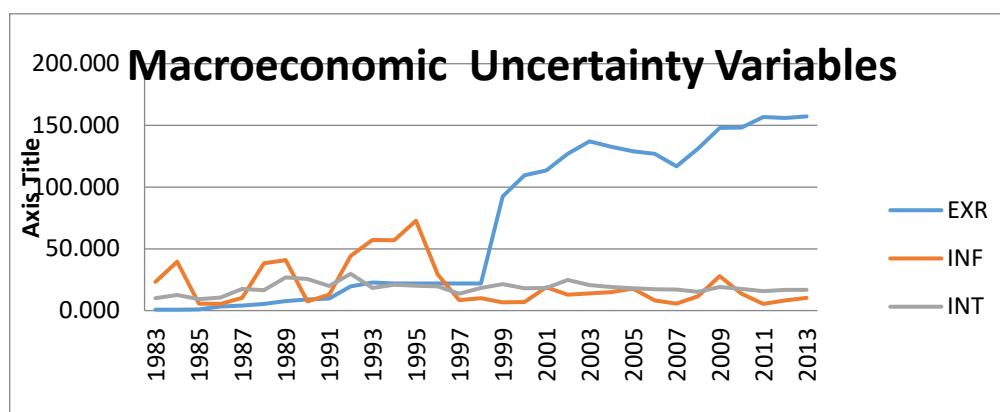


Fig 2.1 Source: Author's Construction, 2016.

2.4.1 Aggregate Investment Trend in some Sub-Saharan countries

For over a decade and half now, the aggregate investment profile in most countries in

the Sub-Saharan Africa (SSA) has been unimpressive, for most of the countries specifically those reported in table 2.3, it reveals that the reported share of investment in GDP is on the downward trend particularly during the period of 2001- 2012 reaching a low level of 5.5% in 2005 in Nigeria, 15% in 2002 in South Africa, 18.3% in 2005 in Ghana and 15.8% in Kenya.

In Nigeria, the average growth rate for share of investment in GDP in table 2.4 reveals

that it fell from the peak of 50.8% in 2006 to the low of -25% in 2012 largely reflecting a decline in the contribution of investment to GDP, This abysmal decline in the share of investment in GDP in Nigeria started in 2007 when it fell from 50.8% to 12.5% and became worst in 2008 when it fell to a low of - 9.9%. The investment profile in Nigeria however improved in 2009 when the growth rate rose to the peak of 46.1%. Thereafter, Nigeria has consistently experienced decline in the growth rate for the share of investment in GDP, to the low of -25% in 2012, a position that has become worrisome to policy makers.

Ghana experienced marginal but steady decline in the share of investment in GDP from the peak of 21.6% in 2006 to the low of 18.7% in 2012. It should be noted however as shown in table 2.4 and figure 2.4 that Ghana records the least growth rate in terms of investment contribution to GDP with an average rate of 0.1% over the past one and half decades with a dis-investment of 1.1% in 2012.

The experience of Kenya is not significantly different from that of Ghana. In Kenya, the average growth rate for the share of investment in GDP stood at 1.5%. The growth rate in Kenya declined from the peak of 1.5% in 2005 to the low of -1.4% in 2009 and has been experiencing instability since then till 2012 when it recorded the growth rate of 0.4%, South Africa has a fair share of the declining investment profile in SSA, from the data in table 2.3 South Africa recorded growth rate of 14.5% in 2008 which steadily declined to a low of -11.8% in 2010. In 2011 it bounced back to a peak of 16.5% but could not be sustained when in the following year, 2012, it recorded a low of 2.4% growth rate. On the average the country recorded 4% growth rate for share of investment in GDP which though relatively higher than Ghana and Kenya lagged behind Nigeria that recorded 4.4% as revealed in Table 2.3.

Figure 2.3 and table 2.3 reveals an abysmally low level in the share of investment to GDP. From table 2.3 and Figure 2.3, it revealed that Nigeria low share of investment in GDP contrast sharply with those of Ghana, South Africa and Kenya with average share of 19.3%, 19%, and 18.5% in that order as Nigeria lagged behind with 9% during the period 2001 – 2012.

In general, the growth rate of investment in Nigeria has not been impressive inspite of the various reforms in the real sector. The low investment growth rate

could be caused by internal and external factors. The internal factors may be connected to mistakes in the macroeconomic policies fuelled by Structural Adjustment Programme (SAP), particularly decay of infrastructural facilities in the power sector, lack of political will and incompatibility of monetary policies with macroeconomic goals. The external factors reflect an increasing hostile international economic environment characterised by uncertainty of exchange rate, inflation and interest rate besides the mounting external debt with its attendant debt overhang.

For over the past four years, the political environment has been unstable for meaningful investment particularly for fear of changes in leadership in the democratic dispensation. Based on the stylised facts on the macroeconomic outlook of Nigeria which revealed the negative growth rate for share of investment in GDP, This study is motivated to determine the proximate factors that affect investment decision in the country adopting the real options theory suggested by Dixit and Pindyck, 1994.

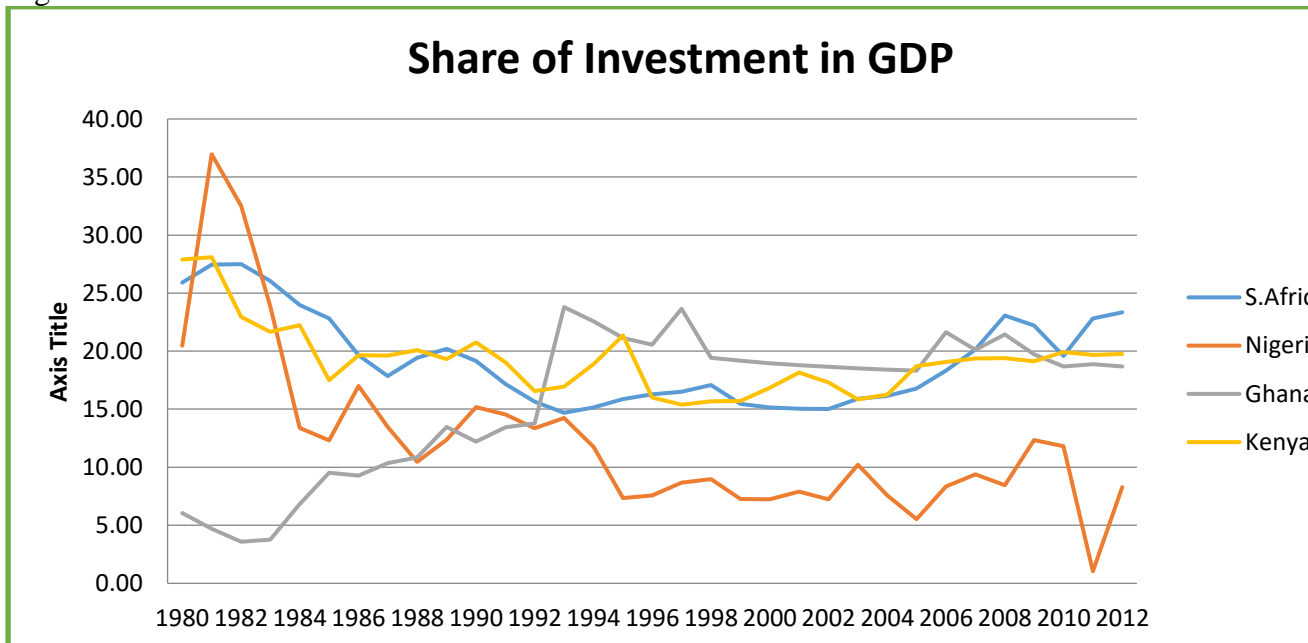
Table2.2: Share of Investment in GDP

Year	S.Africa	Nigeria	Ghana	Kenya
1980	25.90	20.48	6.06	27.89
1981	27.45	36.96	4.69	28.09
1982	27.50	32.52	3.58	22.96
1983	26.05	23.87	3.75	21.67
1984	23.98	13.40	6.84	22.25
1985	22.81	12.30	9.53	17.49
1986	19.65	17.01	9.29	19.63
1987	17.85	13.47	10.36	19.62
1988	19.42	10.48	10.85	20.08
1989	20.21	12.38	13.48	19.32
1990	19.14	15.18	12.19	20.74
1991	17.16	14.54	13.45	19.03
1992	15.65	13.35	13.78	16.55
1993	14.69	14.24	23.79	16.94
1994	15.15	11.76	22.56	18.87
1995	15.88	7.36	21.13	21.37
1996	16.28	7.56	20.57	16.01
1997	16.51	8.68	23.65	15.39
1998	17.09	8.96	19.42	15.68

1999	15.45	7.27	19.17	15.71
2000	15.14	7.24	18.96	16.84
2001	15.05	7.89	18.79	18.16
2002	15.02	7.24	18.64	17.30
2003	15.90	10.21	18.52	15.84
2004	16.15	7.57	18.41	16.26
2005	16.79	5.53	18.32	18.70
2006	18.34	8.34	21.64	19.08
2007	20.15	9.38	20.11	19.37
2008	23.07	8.46	21.45	19.40
2009	22.20	12.35	19.72	19.13
2010	19.58	11.81	18.68	19.93
2011	22.81	1.04	18.88	19.66
2012	23.35	8.28	18.68	19.75

Source: IFS, 2013

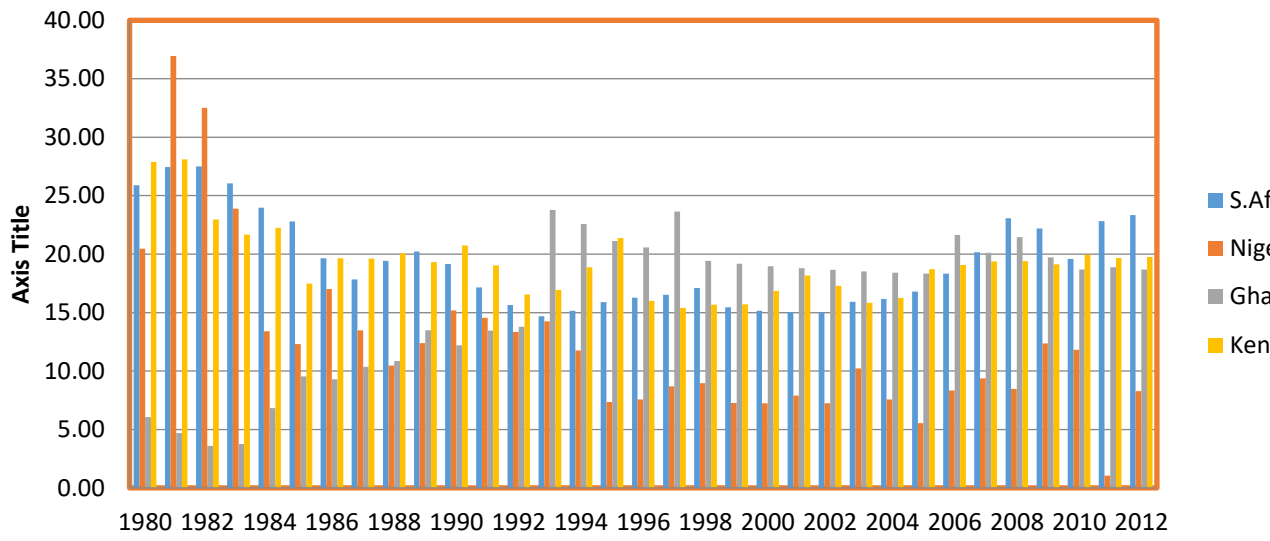
Figure 2.2



Source: Author's Construction, 2016

Figure 2.3

Share of Investment in GDP

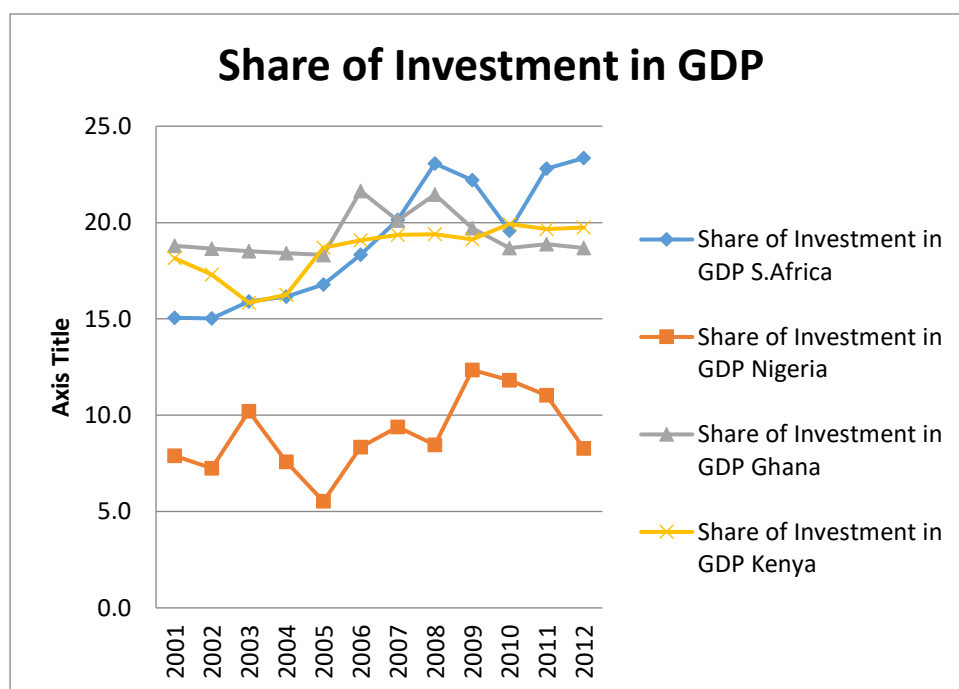


Source: Author's Construction, 2016

Table 2.3: Share of Investment in GDP(2001-2012)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Average
S.Africa	15.1	15.0	15.9	16.2	16.8	18.3	20.1	23.1	22.2	19.6	22.8	23.3	19.0
Nigeria	7.9	7.2	10.2	7.6	5.5	8.3	9.4	8.5	12.4	11.8	11.0	8.3	9.0
Ghana	18.8	18.6	18.5	18.4	18.3	21.6	20.1	21.5	19.7	18.7	18.9	18.7	19.3
Kenya	18.2	17.3	15.8	16.3	18.7	19.1	19.4	19.4	19.1	19.9	19.7	19.7	18.5

Source: IFS 2013



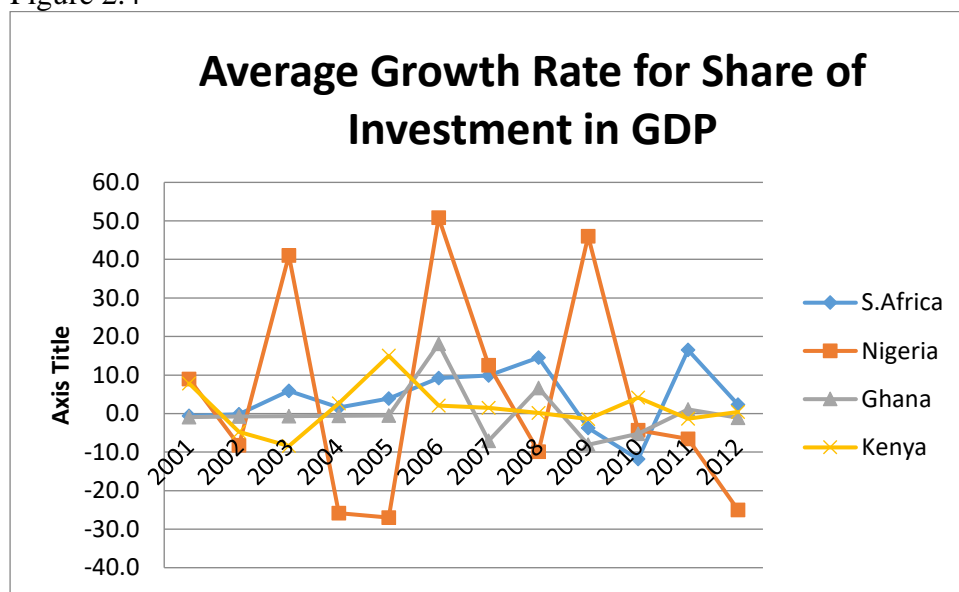
Source: Computed by the author from International Financial Statistics (IFS), 2013CD Rom

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Average
South-Africa	-0.6	-0.2	5.9	1.6	3.9	9.2	9.9	14.5	-3.8	-11.8	16.5	2.4	4.0
Nigeria	9.0	-8.2	41.1	-25.9	-27.0	50.8	12.5	-9.9	46.1	-4.3	-6.5	-25.0	4.4
Ghana	-0.9	-0.8	-0.7	-0.6	-0.5	18.1	-7.1	6.7	-8.1	-5.2	1.1	-1.1	0.1
Kenya	7.8	-4.7	-8.4	2.7	15.0	2.0	1.5	0.2	-1.4	4.2	-1.3	0.4	1.5

Table 2.4 Average Growth Rate /Share of Investment in GDP (SSA) Countries

Source: Computed by the author from International Financial Statistics (IFS), 2013CD Rom

Figure 2.4



Source: Computed by the author from International Financial Statistics (IFS) 2013

2.5 Theoretical Framework.

The importance of the determinants of corporate investment with the application of real option is evident from the enormous attention given to it in recent economic literature. Until recently, investment decisions were incorporated into economic models mechanically, neglecting the role of uncertainty. This criticism partly led to the formulation and indeed popularization of the real options theory of investment.

The theoretical literature on the determinant of corporate investment include two main strands of theory: the traditional theory and the real option theory of investment. The traditional theory contain two types of models: the neoclassical investment model which does not account adjustment costs, which is the cost involved in the purchase, installation and re-sale of capital goods of investment and the Tobin's Q model of investment.

2.5.1 Overview of the Traditional Models

The traditional model on firm behaviour that exclude adjustment cost mainly study the effect of uncertainty on the optimal output/input level of firms rather than on investment. According to these types of model, firm can instantly and costlessly adjust its capital stock, and its investment decision is fundamentally a static decision in which the marginal product of capital is equal to the user cost of capital, which is analogous to the net present value (NPV) rule. The NPV rule maintains that an investment project should be accepted if the present value of its expected future cash flows, which is usually estimated using the weighted average cost of capital (WACC) as the discount rate, is larger than its investment cost.

The traditional investment model without adjustment cost take for granted the assumption that firms can instantly and costlessly adjust to their optimal capital stock. This assumption may not be realistic because it is normally costly for firms to adjust their capital stock to optimal levels. In principle, the NPV- decision is in comparative static framework, as it has no time flexibility. It follows, that the optimal neoclassical investment rule is simply the equality between the marginal revenue (MR) of capital and the marginal cost (MC) of capital ($MR=MC$). Intuitively therefore, there is no role for uncertainty in this model.

2.5.2 Tobin's Q Model of Investment

The Tobin's Q model of investment constitutes another criterion for making investment decisions. This model simply relates investment to average Tobin's Q. Average Q is the ratio of the maximized value of the firm to the replacement cost of its capital. Hayashi (1982) equated marginal Q to average Q (recognising that the marginal quantity is difficult if not impossible to measure) and asserted that marginal Q is a sufficient statistic for investment in a value-maximising model of investment behaviour

with strictly convex adjustment costs. The Q-model implies the following basic relation:

$$I_t/K_t = a + 1/b (Q_t - 1) + U_t \dots \dots \dots (2.5.1)$$

Where Q_t denotes marginal Q, I_t is gross investment in period t, K_t is the net capital stock and U_t is an additive shock to marginal adjustment costs (Hayashi, 1982). The parameter a and b are structural parameters of the adjustment cost function. The above equation implies more generally that expectations of future profitability matter for firm's investment decisions, since marginal Q summarises the value of an additional unit of capital in terms of its expected contribution to the firm's current and future profits. But marginal Q is not observable, therefore it is necessary to find an observable proxy. For a value-maximising firm with a single capital good, Hayashi (1982) has shown that under certain restrictions on the profit function, marginal Q equals average Q defined as:

$$Q_t = V_t / P_t^I (1 - \delta) K_{t-1} \dots \dots \dots (2.5.2)$$

Where, V_t is the (maximized) NPV of the firm's expected future profits and the denominator is the replacement cost at time t of the capital stock inherited from the previous period. P_t^I denotes the price of investment goods and δ is the rate of depreciation.

As mentioned earlier, Tobin's Q governs the investment decision. Investment should be undertaken if Tobin's Q exceeds 1 and should not be undertaken if Tobin's Q is less than 1. Since the average Q reflects expected future profits, the Q-model has an additional feature above and beyond the standard neoclassical investment model because it incorporates expected future profits into current investment decisions. However, the model did not account for uncertainty and has performed poorly in several empirical studies (see Abel and Blanchard, 1986; Hayashi and Inoue, 1991; and Bond

and Cummins, 2001) and almost invariably rejected. To come around the problem, the traditional theory has to be reconsidered. In the course of reconsidering it, researchers came up with the real options theory of investment.

2.5.3 Theoretical Framework on Real Option Theory

Real option theory of investment constitutes another criterion for investment decisions. The real options approach to investment maintains that making a real investment decision is similar to exercising a financial option and that investment opportunities may include options for future follow-up decisions. In particular with respect to irreversible investment in the face of market and or macroeconomic uncertainty, the following features apply:

- First, part or all of the investment cost is sunk.
- Second, economic environments are volatile and uncertain. Under such conditions, firms do not know which direction the economic environments will develop. However, because information evolves gradually, firms will learn more about the future as time passes.
- Finally, since investment opportunities may generally not disappear if they are not taken immediately, these opportunities represent options that need not be exercised immediately.

Following Dixit and Pindyck, 1994, investment is irreversible, if increase in uncertainty causes the firms to postpone investment, even if expected future profitability does not change. In this model, firms invest if the NPV of the investment project exceed the value of the option to postpone. This model evolved from the seminal work of McDonald and Siegel, (1986), with adjusted version by Sarkar, (2000).

McDonald and Siegel shows that investment irreversibility and uncertainty drive a wedge between the NPV of project and investment costs (Lensink, 2002). The analysis shows the degree by which the standard NPV rule of investment has to be adjusted. This model takes into cognisance the fact that firms control the timing of a totally irreversible investment problem and chooses between investing now and waiting for further information. The present value of the expected cash flows (V) follows a geometric Brownian motion of the form,

$$dV_t = \alpha V_t dt + \sigma V_t dZ_t \dots \dots \dots (2.5.3)$$

Where, α is the expected growth rate of cash flow; σ the standard deviation of the growth rate and dZ an increment of the Wiener process. Thus, the firm know the present value of future cash flow of the project if it invest immediately. However, when the firm invests, uncertainty beclouds the future value with a variance that increases overtime. Hence, there is the growth effect α and the uncertainty effect σ .

The intuition however, is to seek a critical value of the cash flow (V^*), such that firms will invest when $V > V^*$.

The determination of the value of the option to invest gives solution to the problem. Using dynamic programming technique (Pindyck, 1991). the problem is simply maximizing the following, subject to equation (2.3) above:

$$F(V) = \text{Max } E(V_t - I)e^{-\mu t} \dots \dots \dots (2.5.4)$$

Where, $F(V)$ denotes the value of option to invest; E denotes the expectation operator; $V_t - I$ denotes the payoff from investing at time t ; t being unknown future time that the investment is made and μ is the constant discount rate. It is assumed that $\mu > \alpha$ given that $\sigma = \mu - \alpha$. The implication is that otherwise waiting would always be better than investing and would grow infinitely with time horizon.

Following Lensink, Bo and Sterken (2001), the solution to the problem can be obtained through the valuation equation:

$$F(V) = cV^\beta \dots\dots\dots(2.5.5)$$

Where β is the positive root of the characteristic equation and C is a constant.

$$\beta = 1/2 - \alpha/\sigma^2 + (\alpha/\sigma^2 - 1/2)^2 + 2r/\sigma^2)^{1/2} \text{ and}$$

$$C = ((\beta-1)^{\beta-1})/(\beta^\beta \beta^{-1})^2 \text{ or } C = (V^*-I)/(V^*)^\beta$$

Where $F(V^*) = F(\beta/(\beta-1))I \dots\dots\dots(2.5.6)$

The value matching condition (2.6) states that at optimal, the firm is indifferent between investing right now and delaying the investment.

$$F^I_{wait}(V^*) = F^I_{now}(V^*) \dots\dots\dots(2.5.7)$$

The smooth pasting condition (2.5.7) guarantees that the value function of the firm is continuous at the threshold value of V^* if V^* maximizes the value of the firm. V^* denotes the threshold value which can be calculated by using the value matching and smooth pasting conditions. It could be shown that $\partial\beta/\partial\sigma < 0$ by differentiating β with respect to σ . Hence, given that $\partial\beta/\partial\sigma < 0$, if the value of σ increases, it would lead to an increase in V^* which ultimately increases the trigger value of investment. The following expression gives the probability of investing within some time period T :

$$prob(I) = \Phi((\ln(V_0/V^*) + (\alpha - 1/2\sigma^2)T)/\sigma) - (T)^{1/2} + (V^*/V_0)^\gamma \Phi((\ln(V_0/V^*) - (\alpha - 1/2\sigma^2)T)/\sigma) \dots\dots\dots(2.5.8)$$

Where $\gamma = 2\alpha/\sigma^2 - 1$ and V_0 is the starting value of V and Φ denotes the area under the standard normal distribution. In all, increase in uncertainty on investment is derived by substituting V^* in $prob(I)$. Since there could be both positive and negative effect,

the overall effect becomes ambiguous. The probability of investing is both an increasing and a decreasing function of volatility.

Sarkar shows by means of simulation that the positive effect exceeds the negative effect when uncertainty is low, but when it is high the negative effect is more important.

McDonald and Siegel, (1986). Finding that an increase in uncertainty leads to an increase in the trigger value of investment, and hence has a negative effect on investment. However, the extension by Sarkar (2000) shows that uncertainty and investment relationship exhibit a threshold effect such that an increase in uncertainty increases the probability that the investment threshold will be surpassed, and thus present a case for both a positive and a negative effect on investment in line Serven, 2003 findings.

In general, as revealed in the literature, uncertainty most likely affect firm's investment through the channel of real options. Therefore, determinatants of corporate investment in Nigeria, with the application of real option theory require empirical study.

CHAPTER THREE

RESEARCH METHOD

In this chapter, we discussed the research design which includes the population, method of data collection, requirement, sources and description. This was followed by the model specification, estimation Technique, measurement of variables and Apriori expectations.

3.1 Research Design

Research design is the total plan for connecting conceptual research problems to the pertinent empirical research. It, articulates what is required, methods to be employed for the collection and analysing of data for the study. The research design that was used for this study is ex post facto that is a substitute for true experimental research (Kerlinger, 1986 and Cohen et al, 2000). This approach is also justified given that the data set that was used for this study is from already collected data or from secondary sources. The major advantage of conducting an ex post facto study are that the data are already collected, obtaining permission to conduct the study is less involved than enrolling participants, and less time is involved in conducting the study than by creating new data.

3.2 Population of the Study

The population is made up of data collected from the three hundred and twelve (312) firms retrieved from the total population of 312 quoted firms duly registered in the Nigerian stock exchange as at the end of December, 2012. For relevance and consistency, data on financial institutions were screened out, retaining those on the real sectors of the economy. This is because our study dealt with the real sector of the economy not portfolio investment and that was why we have to screen out the finance

companies. Again considering data availability and continuity, the total population was screened further over the period of 2001-2012 and ended up with a clean sample of 73 firms. For these samples, Nigeria investment determinant variables, based on the real options theory of investment were constructed.

3.3 Method of Data Collection, Requirement, Sources and Description

3.3.1 Method of Data Collection and Requirement

In this study, we made recourse to secondary data at both firm (micro) and macro levels. The data used include daily stock market prices of firms which are classified as having reversible and irreversible investment capital, as well as firms that are competitive and monopolistic in their market structure.

To provide information on the volatility of individual firms' daily stock market prices, data on cash flow (CF), capital stock (K) and average Q were constructed which are contained in the annual financial statement of listed firms as well as data on the volatility of macroeconomic variables (exchange rate, interest rate and inflation rate), were used to provide information on corporate investment in Nigeria.

3.3.2 Data Sources

The data series for the models spanning from the period of 2001 to 2012 were obtained from the following sources:

- The Nigerian stock exchange (stock indexes).
- International Financial Statistics (IFS) various issues.
- Bureau of Statistics and
- Central Bank of Nigeria.

The set of data set obtained from the various sources were on the following variables.

Capital stock (K) *the book value of capital stock*

Corporate investment (I) the sum of the changes in the capital stock and depreciation.

Cash Flow (CF) sum of operating profit after tax but before interest payment and depreciation.

Average Q (Q) ratio of market capitalisation of firms plus the book value of debts to the book value of capital stock.

Vector U macroeconomic uncertainty variable that could influence investment decisions in Nigeria (exchange rate, interest rate and inflation rate).

Vector V vector of all other traditional factors that determines corporate investment in Nigeria (degree of openness, market structure and political index).

To carry out test of hypotheses, we excluded all financial firms including banks, insurance firms and asset management firms among others from the samples.

3.4 Model Specification

In this study the most appealing model to empirically determine the investment

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uncertainty relationship is that offered by Sakar (2000) on the real option pricing theory and so we passed through the route taken by Sakar (2000) in the specification of our model.

It is based on the reasoning that corporate investment in Nigeria is a function of cash flow of firms, ratio of firms capital stock to its replacement value (Average Q), degree of openness to the rest of the world, uncertainty associated with instability in the macroeconomic variables and the inefficiencies of the capital markets in the region.

To test for the threshold effects of investment – uncertainty relationship following Sakar (2000) on the real option model, we specified the following models:

$$I/K = a_0 + a_1 Q + a_2 (c/f)/K + a_3 UmL + a_4 m H + \varepsilon \text{ -----}$$

(3.1)

$$I/K = a_0 + a_1 Q + a_2 (c/f)/K + a_3 UmL + a_4 UmH + a_5 (I/K)_{t-1} + \psi V \varepsilon \text{ -----}$$

(3.2)

Where:

I/K = ratio of corporate investment to capital stock.

Q = ratio of market capitalisation and book value of debt to book value of capital stock (Tobin's Q).

Cf/K = ratio of cash flow to capital stock.

UmL = proxy for linear uncertainty measure.

UmH = proxy higher uncertainty measure

$(I/K)_{t-1}$ = lagged investment to capital ratio.

V = Vector of variables in the traditional model, degree of openness and political index.

Variables in the model scaled by firm's capital stock were used to account for differences in firms sizes. According to Sakar (2000), the option model can be approximated

by equation (3.1) and (3.2).

For test of robustness of results, we specified equation (3.2) to estimate a dynamic

investment model including the lagged investment to capital ratio.

Bo et al. (2003) pointed out that many empirical investment studies do not account for lag dependent variable because the investment decision is basically a dynamic problem. The lag dependent variable is basically taken into account to allow for a possible dynamic structure in the model which may be caused by inertia of the dependent variable. In addition, a possible advantage of adding a lagged term is that it may remove serial correlation. The dependent variable is the ratio of gross corporate investment to capital stock. The independent variable comprises of the traditional determinants of corporate investment which in our case include average Q and cashflow scaled firm's capital stock that constitutes a measure of firm's internal financing constraint/ profitability (Vermeulen, 2002).

In Keynes investment theory, this is expected to have a positive effect on investment generally. We included the measure of average Q in the model specification to control for the effect of expected future profitability on investment decision.

Uncertainty constitutes our main variable of interest and indeed, the inclusion of the uncertainty terms in the model is motivated by the theoretical and empirical literature so far discussed, suggesting that uncertainty may affect firms' investment decisions in ways that are not fully captured by available measures of average Q.

Since firms in Nigeria are faced with various types of uncertainty and do not know which of the uncertainty impact most on investment decisions of firms, we specified another model of investment incorporating the different proxies of macroeconomic uncertainty faced by individual firms into equation (3.8) thus:

$$I/K = a_0 + a_1Q + a_2(cf)/K + a_3u_{mL} + a_4U^2_{mH} + a_5(1/k)t_{-1} + \beta_1U_{reer} + \beta_2U_{rint} + \beta_3U_{inf} + \varepsilon \dots \dots \dots (3.3)$$

Where: U_{reer} = volatility of exchange rate

U_{rint} = volatility of interest rate and

U_{inf} = inflation rate volatility.

All other variables specified in equation (3.3) are as previously defined.

For test of threshold effects of investment-uncertainty relationship as implied by the real option model of Sarkar (2000), we specified a simple Q-type model of investment extended by the linear and a quadratic term for uncertainty, using Nigerian firms' dataset.

3.5 Estimation Techniques

This study was conducted using panel data set which have several advantages,

One

of which is that it allow greater flexibility in modelling disturbances in behaviour across individual firms as opposed to a cross-sectional data set (see Baltagi, 2001). This helped for better understanding of firm's behaviour over time.

The prediction equation was estimated using fixed effects and the ordinary least squares, (OLS). The fixed effect model accounts for potential existence of heteroskedasticity and was adopted in order to account for individual specific effects. This means that each individual firm have its own intercept reflecting individual

heterogeneity. There is also the assumption of possible existence of individual firm's homogeneity and upon this assumption an alternative equation was estimated using common intercept model also referred to as the OLS or pooled model. This means there is no unobservable characteristic that makes the firm heterogeneous. The choice of fixed effect is on the premise that members of the pool (individual firms) were selected on random basis rather on data consideration which is the case in most panel studies where the individuals are firms or countries. Thus it is appropriate to adopt the fixed effect model. Besides, the fixed effect accounts for unobservable individual specific effects.

However, fixed effect and OLS estimation methods have their drawbacks. Firstly, they do not take into consideration the problem of simultaneity/endogeneity. Secondly, fixed effect and OLS estimates are inconsistent in panel of short dimension and so this study used first differencing to come around such situation during the course of the study.

In this study volatility of variables were measured using Standard deviation and where applicable GARCH models. For market uncertainty, a Panel data estimation technique was employed while for uncertainty proxies the study used GARCH (1 1) for data with high volatility and for low volatility we used standard deviation from a geometric Brownian process. Our preference for these uncertainty measures over the other measures can be justified given that financial markets could react nervously to macroeconomic crises.

To estimate a mean equation for the firms' stock market prices and their conditional variance which depends on a lagged value of the squared error terms and lagged value of the conditional variance itself, we jointly used the GARCH (1,1)

technique. More formally, we derive the proxy for the market risk measure from estimating a GARCH (1,1).

3.6 Measurement/Construction of Variables

Following Lensink, Bo and Sterken (2001) and in line with the existing literature, there are five main methods of constructing an uncertainty proxy:

- (i) Standard deviation
- (ii) Standard deviation of the unpredictable part of a stochastic process;
- (iii) Standard deviation from a geometric Brownian process;
- (iv) The Generalised Autoregressive Conditional Heteroskedastic (GARCH) model of volatility and
- (v) The standard deviation derived from survey data.

This study, explored the five measures as much as possible given the point that the GARCH model has different stationarity process compared to the real option model. Specifically the study adopted the GARCH model of volatility which assumes that the variance of the error terms is not constant over time and this is often the case with stock market data.

As already discussed in chapter two, irreversibility may lead to postponement or suppression of investment during the period of uncertainty since it cuts short the possibility for firms to sell used physical capital in order to cope with a downturn of the economic environment. Irreversibility therefore, is important and should be accounted for when examining corporate investment determinants in the real options theory paradigm. Other factors which are also relevant in the study include, the structure of the market in which investors operate, uncertainty of the market and macroeconomic

environment as well as the Average Q which constitute part of the standard determinant of investment. The measurement of these relevant variables are discussed below.

$$R_t = a_0 + a_1 R_{t-1} + a_2 R_{t-2} + \varepsilon_t \dots \dots \dots (3.4)$$

$$\sigma_t^2 = \beta_0 + \beta_1 \sigma_{t-1}^2 + \beta_2 \varepsilon_{t-1}^2 \dots \dots \dots (3.5)$$

where R_t and R_{t-1} denote the stock market prices at time t and its lagged values respectively

σ_t^2 - σ_{t-1}^2 denote the conditional variance of the stock market prices at time t and its lagged values respectively.

3.6.1 Measuring Irreversibility

Since one issue of interest in this study is to examine how irreversibility influences the corporate investment during the period of uncertainty, the most appropriate model to considered must include parameterization of the degree of reversibility. However, since there is dearth of data set and inadequate information on sale of capital, it was not possible to test the prediction of a partial reversibility model as carried out by Abel and Eberly (1996). To fix the ideas therefore, this study adopted a model where investment is completely irreversible.

Guiso and Parigi (1996) and Pattillo (1998) classified firms as having reversible investment if the firm leased capital goods, bought used capital goods, or sold capital. In this approach, types of capital that sells at smaller discount imply that the investment is reversible. An alternative to this is the classification made by Lensink and Murinde, 2005, where firm's investment projects are classified into reversible and irreversible according to the industry classifications in the various stock exchanges. This study adopted either of the routes based on convenience.

To reflect the impact of irreversibility on the uncertainty variables, we constructed an interactive dummy for use in the regressions, where irreversible investment (*IREV*) is set equal to one (i.e. *IREV*=1) and zero otherwise (i.e. reversible investment *IREV*=0).

3.6.2 Measuring Firm's Market Structure

Since firms are classified into competitive and monopoly firms based on the stock exchange local industry classifications, we constructed an interactive dummy variable for use in the regressions to show how market structure influence investors decision about uncertainty. Hence, competitive firm (*Com*) shall be set equal to 1 (ie*Com*=1) and zero otherwise (ie*Com*=0).

3.6.3 Construction of Average Q

In the literature, different proxies for Q are used. For example, the market-to-book value of equity is used in Houston and James (2001), Erickson and Whited (2000), used the market value of debt plus the market value of equity minus the replacement value of inventories over the replacement value of the capital stock. Whited (2001), used the market-to-book value of assets. Of all these measure of Tobin's Q above, and there is no consensus on how to empirically proxy for Q. The measurement of Q in empirical work is thus problematic. To resolve this problem, Barro, (1990). suggested the use of stock market prices to proxy for Q in investment studies. Barro argues that movements in the market value of equity dominate changes in Q and hence proxy Q by the ratio of market capitalization of firms plus the book value of debt to the book value of the capital stock for individual firms. This is the route we followed on this study.

3.6.4 Construction of Uncertainty Proxies

In this study, we decomposed the uncertainty measure into macroeconomic, and firm-specific (market uncertainty) factors to enable us determine which of the components is more informative to investors. For the construction of uncertainty proxies, we used the Generalized Autoregressive Conditional Heteroskedastic (GARCH,1,1) model for data with high volatility and the standard deviation from a geometric Brownian process on low volatile data. Our preference for these uncertainty measures over the other measures can be justified, given that there is usually volatility in the stock market which could unreasonably make some stock to be very volatile, so we used it as a better measure of volatility. Other measures of uncertainty do not have the ability to distinguish between predictable and unpredictable variability.

3.6.5 Measuring the Degree of Openness

The degree of openness of an economy is measured by the ratio of the sum of the a country's exports and imports to GDP. In this study this we used this ratio as one of the variables as stated earlier.

3.6.6 Measuring Market Uncertainty

To construct a measure of market uncertainty, we used the daily stock market prices of listed firms in the Nigerian stock exchange. We choose this path because as noted earlier, changes in stock prices are driven by market based information which reflect all aspects of a firm's environment (see Leahy and Whited, 1996). Since stock

market prices display clustering effects, (Lensink and Murinde, 2005), it is appropriate to derive our proxy for market risk measure by estimating a GARCH (1, 1) model. The conditional variance is the quadratic measure of uncertainty (U^2_{mH}) and its square root was taken to obtain the linear measure of uncertainty at low level (U_{mL}). The daily conditional variance of the stock market prices was estimated firm by firm over the sample period (2001-2012). However, since investment data are only available on annual basis, we constructed the annual uncertainty measure by computing the annual average (for each of the years 2001 - 2012 from the daily conditional variance of prices firm by firm).

3.6.7 Macroeconomic Uncertainty Measurement

The macroeconomic variables used are interest rate, inflationary rate, and exchange rate volatility. Due to the characteristic nature of volatility of the variables, we constructed their uncertainty term using both GARCH (1,1) model and standard deviation from a geometric Brownian process.

3.7 Apriori – Expectation

VARIABLES	Remarks/Investment decision
$1/k =$ ratio of corporate investment to capital stock.	Positive correlation – increase in capital stock denote higher investment
$Q =$ ratio of market capitalization and book value of debt to book value of capital stock(Tobin's Q).	Could be Negative or Positive
$cf/K =$ ratio of cash flow to capital stock.	Could be positive or negative depending on marginal efficiency of capital
$U_{mL} =$ proxy for linear market uncertainty measure.	Positive
$U^2_{mH} =$ proxy for higher market uncertainty measure.	Negative

<i>Ureer = volatility of exchange rate</i>	Negative
<i>Urint = volatility of interest rate</i>	Negative
<i>Uinf = inflation rate volatility</i>	Negative

CHPATER FOUR

DATA PRESENTATION AND ANALYSIS OF RESULT

This chapter begins with data presentation which was further broken down into presentation and analysis of empirical results. This was followed by irreversible, uncertainty and corporate investment analysis in Nigeria from our regression result. Furthermore market structure, uncertainty and corporate investment in Nigeria result was discussed followed by our empirical findings and policy implications were stated

succinctly. Finally, discussion of findings and evaluation of working hypotheses brought this chapter to a close.

4.1: Data Presentation

The data used to analyse the determinants of corporate investment in Nigeria were retrieved from a total population of 312 quoted firms in the Nigerian stock exchange as at the end of December, 2012. For relevance and consistency, data on financial institutions were screened out, retaining those on the real sectors of the economy. Considering data availability and continuity, the total population was screened further over the period 2001-2012 and ended up with a clean sample of 73 firms. For these samples, Nigeria investment determinant variables, based on the real options theory of investment were constructed.

For the analysis of our results on the determinants of investment in Nigeria using the real options model, we proceeded with the descriptive statistics of the variables that entered into the investment equation.

Table 4.1: Descriptive Statistics of Stock Market Variables 2001 -2012

	IK	Q	CFK	UM	UM2
Mean	3.235654	3.168622	1.741668	11.51147	539.8284
Median	2.048608	1.352138	1.014456	3.732368	11.12678
Maximum	222.7090	118.4299	55.61475	119.3841	14252.57
Minimum	0.006494	0.001074	0.003000	0.014024	0.000197
Std. Dev.	11.43734	7.139326	4.822999	20.62737	1834.735
Skewness	13.77129	8.442300	8.072540	3.004409	4.450927

Kurtosis	221.2595	105.8035	74.47361	11.89473	23.59247
Sum	2834.433	2775.713	1525.701	10084.04	472889.6
Sum Sq. Dev.	114461.2	44598.73	20353.65	372302.2	2.95E+09
Observations	876	876	876	876	876
Cross sections	73	73	73	73	73

Source: Author's computation, 2016.

Table 4.2.1: Descriptive Statistics of Market Uncertainty Variables of the

Investment Model 2001 -2012

Year	Mean IK	Sd IK	Mean Q	Sd Q	Mean CFK	Sd CFK	Mean UM	Sd UM
2001	5.259251	25.82027	1.989104	3.299524	1.538100	3.441350	13.97030	22.12847
2002	3.028980	6.817581	1.891967	3.345700	1.688613	3.623603	13.93160	21.85487
2003	4.220916	16.27590	1.916129	3.224494	1.576339	3.507830	13.69343	21.38910
2004	4.400878	18.16911	2.499468	3.815430	1.939006	5.384139	13.75389	21.81086
2005	3.314066	7.142833	2.226500	3.669728	2.253554	7.229671	14.00341	22.71009
2006	3.151125	6.916520	2.221034	3.882143	1.190631	1.098277	14.21723	23.85491
2007	3.575278	7.732257	2.578266	3.071261	1.529356	3.282413	14.53816	25.32901
2008	3.070425	6.925498	5.681412	14.19153	1.550357	3.580708	12.61553	23.42123
2009	2.965579	6.825969	3.471860	5.014085	1.845651	6.311349	7.614814	14.06418
2010	2.058642	3.308574	4.512583	10.98310	1.847432	5.166203	5.633629	11.46609
2011	1.951293	1.918234	4.109257	7.872687	1.927500	5.733908	5.192320	12.19916
2012	1.831411	1.363371	4.925886	10.27847	2.013477	6.249098	8.973274	19.33039

Source: Author's construction, 2016

Table 4.2.2: Descriptive Statistics of Macroeconomic Uncertainty Variables of the

Investment Determinants Model 2001 -2012

	Mean IK	Mean OPN	Mean UEXR	Mean UINF	Mean UINTR	Mean UPOL
2001	5.259251	7.471700	14.26394	6.346684	3.228244	8.333333
2002	3.028980	7.208900	13.11140	6.391287	3.382123	6.875000
2003	4.220916	10.44050	13.33914	6.736821	2.057320	7.625000
2004	4.400878	12.49080	14.14027	7.130080	2.070211	7.791667
2005	3.314066	17.88010	14.94773	7.561522	2.213149	7.916667

2006	3.151125	17.51060	15.52917		7.793462	2.318519	7.916667
2007	3.575278	19.26950	15.69795		8.386910	2.280553	7.000000
2008	3.070425	22.83970	10.23508		8.685141	1.930976	7.000000
2009	2.965579	18.80260	4.718494		9.965353	0.641898	7.960000
2010	2.058642	24.67590	4.691218		4.233454	0.766312	7.540000
2011	1.951293	29.34690	0.551543		1.979899	0.968736	8.000000
2012	1.831411	27.12580	0.983586		1.449569	4.999245	8.000000

Source: Author's construction, 2016

The annual averages shown in Table 4.2.1 indicate that investment scaled by the size of capital stock was generally on the fall over the study period accompanied inversely by rise in the volatility of stock market variables of cash flow and Tobin's Q as reflected by the increasing standard deviation.

On the macroeconomic variables of the model, investment appears to move in tandem with the stability of the political environment. A fall in political stability corresponds to a fall in the annual averages of investment, implying a positive relationship between investment and stable political environment in Nigeria. On the contrary, investment witnessed a steady dip over the period 2001-2012 in relation to all time high degree of openness of the economy, implying that unguided liberalization of the economy could be detrimental to investment, particularly if domestically produced goods are not internationally competitive. Similarly, rising inflation expectation as shown in Table 4.2.2 is detrimental to investment as reflected in the standard deviation of the inflation variable over the period, 2001-2010. The same can be said of the exchange rate volatility that is inversely related to the all-time low investment profile in Nigeria. Again, interest rate risk witnessed a gradual decline over the 12 years period to 2012. Yet, this high improvement on the interest rate did not appear to have positively influenced the investment behaviour in Nigeria as indicated by the annual averages of investment.

From the descriptive statistics, it can generally be deduced that firm's investment appears to have fallen in tandem with the political index and inversely related to the

volatility of stock market variables (i.e Cash flow and Tobin's Q). Also, high degree of the country's openness, exchange rate depreciation and rising inflation expectation negatively influence firms' investment decisions as reflected in the Tables 4.2.1.and4.2.2 above.

4.1.1 Presentation and Analysis of Empirical Results

Based on our specification for the threshold effect of uncertainty on investment as implied by Sarkar (2000) real option model, we estimated a simple Q-type investment model extended by a linear and quadratic terms for uncertainty. This is to determine whether the uncertainty terms are sensitive to the specification of the investment model and thus establish the relationship between investment and uncertainty. The estimation included cash flow variable weighted by the capital stock as a measure of internal liquidity. The reasoning behind this is that controlling for the growth opportunity of the firm investment is only sensitive to internal funds if the firm is facing financial constraints.

A dynamic investment model which account for partial adjustment was also estimated, by including the lagged dependent variable of corporate investment scaled by capital stock, ostensibly to test for the robustness of our results. For effective estimation, we specifically modelled uncertainty for each firm from information on the volatility of individual firm's daily stock market prices obtained from the daily official price listing of the stock exchange. Information on other variables included in the model-investment, capital stock, cash flow and Tobin's Q were obtained from the audited accounts of the listed firms over the period of the study.

Table 4.3: *Effect of Uncertainty on Investment in a Q-Type model of Investment 2001-2012.*

Dependent Variable: Natural Logarithm of Corporate Investment Weighted by Capital Stock

Cross-sections included: 73				
Total pool (balanced) observations: 876				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.554267	0.015959	34.73162	0.0000
LNQ	0.023544	0.007979	2.950622	0.0033***
LNCFK	0.024399	0.010008	2.437794	0.0150***
LNUM	0.059338	0.032300	1.837110	0.0666**
LNUM2	0.025050	0.016104	1.555531	0.1202*
R-squared	0.866649	Mean dependent var		1.380605
Adjusted R-squared	0.853964	S.D. dependent var		1.477798
S.E. of regression	0.502900	Sum squared resid		202.0742
F-statistic	68.32484	Durbin-Watson stat		1.662349

Source: Author's construction, 2016

Notes to Table 4.3: Standard errors are heteroskedasticity consistent. One (*), two (**) and (***) stars denote statistical significance at 10, 5 and 1 percent level, respectively.

- ❖ All the variables are expressed in natural logarithm.
- ❖ LNQ: Tobin's Q.
- ❖ LNCFK: Cash Flow Scaled by Capital Stock
- ❖ LNUM: Natural Log of Linear Market Uncertainty, measured by the conditional variance from GARCH (1, 1) estimates.
- ❖ LNUM2: Natural Log of Quadratic Market Uncertainty, measured by the conditional variance from GARCH (1, 1) estimates.

Based on the samples described above and the empirical specification of the Q-Type model of investment determinants using corporate investment scaled by capital stock as the dependent variable, Table 4.3 presents the pooled estimates of the basic equation incorporating Tobin's Q and Cash flow variables extended by linear and quadratic uncertainty terms as independent variables. The Table 4.3 reports the Fixed Effect estimates of the standard investment determinants. The coefficient of cash flow variable is positively signed and statistically significant, thus providing evidence that financing is a relevant factor in firms' investment decision. By Keynes investment theory, cash flow is expected to have positive effect on investment generally.

Tobin's Q which constitutes another standard determinant of corporate investment in our model bears positive coefficient as expected and is statistically significant. The

implication of this is that Nigeria rational investors may not exercise the option to wait for further information before investing based on market condition. In other words, the real option to slow down investment is not valuable based on the Tobin's Q model of investment.

To investigate the robustness of the outcomes of our regression regarding the relationship between investment and uncertainty we estimated the standard investment determinant equation extended by the linear and quadratic uncertainty terms. The results as shown in the Table 4.3 indicate that the linear and quadratic uncertainty indicators are statistically significant with their coefficient positively signed. The coefficient of determination of the quadratic market uncertainty indicator is considerably smaller relative to that of the linear market uncertainty indicator, indicating investment waiting behavior in the event of higher uncertainty. These results on Tobin's Q and market uncertainty indicators, suggest that the firm is concerned with the options value of investment, if the options value is high enough, the firm delays new investment.

Table 4.4: *Effect of Market and Macroeconomic Uncertainties on Corporate Investment 2001-2012*

Dependent Variable: LNIK?				
Included observations: 12				
Cross-sections included: 73				
Total pool (balanced) observations: 876				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.157435	0.311964	-0.504658	0.6139
LNQ	0.019301	0.009448	2.042924	0.0414**
LNCFK	0.034422	0.012449	2.765131	0.0058***
LNUM	-0.001669	0.034146	-0.048878	0.9610
LNUM2	0.004999	0.016828	0.297061	0.7665
LNOPN	-0.042391	0.023456	-1.807282	0.0711*
LNUEXR	-0.075553	0.023176	-3.260028	0.0012***
LNUINF	0.337452	0.042421	7.954795	0.0000***
LNUINTR	0.149788	0.023366	6.410593	0.0000***
LNUPOL	0.216027	0.135710	1.591835	0.1118*
R-squared	0.777982	Mean dependent var		1.244156
Adjusted R-squared	0.755333	S.D. dependent var		1.051943
S.E. of regression	0.470622	Sum squared resid		175.8591
F-statistic	34.34920	Durbin-Watson stat		1.737585

Source: Author's construction, 2016

Notes to Table 4.4: Standard errors are heteroskedasticity consistent. One (*), two (**), and three (***) stars denote statistical significance at 10, 5 and 1 percent level, respectively.

- ❖ All the variables are expressed in natural logarithm.
 - ❖ LNOPN: Degree of Openness of the economy
 - ❖ LNUPOL: Index of Political Stability
 - ❖ LNUEXR: Volatility of Exchange Rate
 - ❖ LNUINF: Inflation Expectation
 - ❖ LNUINTR: Interest Rate Variability
- All other variables are as previously defined.

Table 4.4 reports the fixed effect estimates of both the market and the macroeconomic variables that are perceived relevant in the determination of corporate investment in Nigeria. In addition the standard investment variables associated with the market, macroeconomic variables of Interest rate, inflation and exchange rates were incorporated into the model. Besides, the degree of openness of the economy and the

index of political stability in the country were considered as arguments for the determination of corporate investment in Nigeria.

From the Table 4.4, the outcome of our regression indicate that inflation expectation coefficient is positively signed and statistically significant at one percent, suggesting that inflation uncertainty is not a sufficient deterrent of firm investment decision in Nigeria. Inflation is taken as a summary measure of the overall macroeconomic stance, and therefore the volatility of its unpredictable component can be viewed as an indicator of overall macroeconomic uncertainty (Eberly, 1993). By extension, uncertainty of inflation does not encourage the exercise of real options to slow down investment in Nigeria.

Interest rate variability exhibits similar characteristics with the variable of inflation. The coefficient of determination of the interest rate on corporate investment is positive over the study period and is statistically significant at one percent. Interest rate is closely related to the cost of capital and hence high volatility of interest rate can be viewed as a good indicator of the uncertainty on aggregate investment cost. Expectedly, high volatility of this variable makes price signals less informative about the relative profitability of investment across sectors which could negatively affect investment decisions. From the result on the Table 4.4, interest rate volatility is not detrimental to investment increase at firm level in Nigeria.

Regarding the political stability of the country over the study period, the outcome of the regression indicates that decision to increase investment by rational investors in Nigeria is not adversely affected by the political situation of the country. The result shows a positive and significant relationship between the Nigeria political index and corporate investment.

On the relationship between exchange rate volatility and corporate investment in Nigeria, the result as shown on the Table 4.4 indicates a negative relationship with coefficient value of -0.07555 and statistically significant at one percent, suggestive that investment decision of firms is highly sensitive to exchange rate fluctuations. Exchange rate is related to the relative profitability of investment in different economic sectors. By implication, exchange rate volatility is an important determinant of investment in Nigeria.

Similar in characteristics on the relationship between exchange rate and corporate investment is index of the degree of openness of the Nigerian economy to the rest of the world. The result as presented in Table 4.4 shows that the degree of openness of the economy is inversely related to corporate investment. The coefficient of determination is negative with the value -0.042391 and statistically significant at ten percent level, implying that increased liberalization of the economy has detrimental effect on corporate investment in Nigeria.

The coefficients of cash flow and Tobin's Q in this model are still very well determined and statistically significant in their forms. Cash flow has again been revealed as positively related to corporate investment in Nigeria and there is potential improvement in the market for second hand goods as shown by the outcome of Tobin's Q. In contrast, the linear market uncertainty indicator had its coefficient negatively signed though with a value not significantly different from zero.

In all, this model presents an outlook attaching greater importance to macroeconomic variables of exchange rate volatility and the degree of openness of the economy as the key deterrent determinants of corporate investment in Nigeria.

In general, the study makes recourse to annual information and inertia needs to be taken into cognisance. Thus, the study included the lagged dependent variable among the investment determinants.

Table 4.5: *Effect of Inertia in the Corporate Investment (IK(-1))2001-2012*

Dependent Variable: LNIK				
Cross-sections included: 73				
Total pool (balanced) observations: 803				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.597235	0.339718	-1.758035	0.0792
LNQ	0.021895	0.009762	2.242908	0.0252**
LNCFK	0.038898	0.013613	2.857380	0.0044***
LNUM	0.001118	0.033026	0.033840	0.9730
LNUM2	0.003608	0.016284	0.221579	0.8247
LNOPN	-0.078459	0.026328	-2.980042	0.0030***
LNUEXR	-0.074434	0.022865	-3.255361	0.0012***
LNUINF	0.321026	0.041737	7.691659	0.0000***
LNUINTR	0.151395	0.023166	6.535209	0.0000***
LNUPOL	0.473710	0.160310	2.954957	0.0032***
IK(-1)	0.014472	0.005811	2.490421	0.0130***
R-squared	0.822075	Mean dependent var		1.243214
Adjusted R-squared	0.801811	S.D. dependent var		1.107021
S.E. of regression	0.471485	Sum squared resid		160.0546
F-statistic	40.56876	Durbin-Watson stat		1.861952

Source: Author's computation, 2016.

Notes to Table 4.4: Standard errors are heteroskedasticity consistent. One (*), two (**) and (***) stars denote statistical significance at 10, 5 and 1 percent level, respectively.

- ❖ IK(-1)=lagged Dependent Variable scaled by capital Stock.
All variables in this model are as previously defined.

Table 4.5 examines the effect of inertia in the corporate investment weighted by capital stock. Specifically, the study considers the lagged dependent variable to allow for a possible dynamic structure in the variables. The result of the regression shows that the coefficient of the lagged dependent variable is relatively low but positive and statistically significant, suggestive that inertia is relevant to the explanation of variations in corporate investment in Nigeria.

In this model, all the other variables used as argument are well signed and statistically significant except the linear and quadratic market uncertainties with very low positive coefficients and statistically insignificant.

4.1.2 Irreversibility, Uncertainty and Corporate Investment in Nigeria

Table 4.6: *Effect of Irreversibility on Corporate Investment in Nigeria 2001- 2012*

Dependent Variable: LNIK				
Cross-sections included: 73				
Total pool (balanced) observations: 803				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.336325	0.318070	-1.057395	0.2907
LNQ	0.007266	0.009229	0.787336	0.4313
LNCFK	0.036829	0.011658	3.159149	0.0016***
LNUM	-0.000463	0.015343	-0.030182	0.9759
LNOPN	-0.069499	0.024807	-2.801550	0.0052***
LNUEXR	-0.062306	0.021781	-2.860545	0.0044***
LNUINF	0.205870	0.038942	5.286540	0.0000***
LNUINTR	0.101495	0.021316	4.761343	0.0000***
LNUPOL	0.362683	0.150657	2.407340	0.0163***
LNIK(-1)	0.247276	0.037700	6.559021	0.0000***
IREV	0.002721	0.001297	2.098198	0.0362**
R-squared	0.893907	Mean dependent var		1.142286
Adjusted R-squared	0.881825	S.D. dependent var		1.235223
S.E. of regression	0.426437	Sum squared resid		130.9312
F-statistic	73.98200	Durbin-Watson stat		2.013778

Source: Author's Computation, 2016.

Notes to Table 4.4: Standard errors are heteroskedasticity consistent. One (*), two (**), and three (***) stars denote statistical significance at 10, 5 and 1 percent level, respectively.

- ❖ IREV= Irreversibility of Investment (Factor Shaping the Uncertainty Impact on Corporate Investment).

All other variables in this model are as previously defined.

Table 4.6 considers the effect of irreversibility on the investment-uncertainty relationship. On interaction of the irreversibility indicator with the uncertainty terms, we observed that irreversibility of investment capital is a relevant factor influencing firm's decision in Nigeria. The coefficient of the interaction term (irreversibility) is considerably small but statistically significant at 5 percent level. A striking observation is that upon the interactive term, the estimated coefficients of the linear market uncertainty indicator displayed substantial changes. Specifically, the coefficient of the linear market uncertainty term transmuted from the hitherto positive value to negative value with other variables of the model displaying substantial changes in their form. Tobin's Q in this model however present coefficient that is not significantly different from zero and is statistically insignificant. Indeed, the coefficient magnitudes and signs, and the level of statistical significance of the estimated standard investment determinants displayed reasonable changes.

The coefficient on the uncertainty term is the slope coefficient for firms with more reversible investment ($irev=0$), and the product of the interaction term is the slope coefficient for firms with more irreversible investment ($irev=1$). As presented in the Table 4.6, the interaction term is statistically significant with marginal improvement in the coefficient of the linear market uncertainty indicator (Um), suggestive that uncertainty reduces investment in the presence of irreversibility as predicted by the real options theory of investment.

4.1.3 Market Structure, Uncertainty and Corporate Investment in Nigeria

For further evidence bothering on the objectives of this study we apply the notion of a firm's decision on corporate investment based on the structure of the market in which it operates. On this, we considered the competitive and monopolistic/oligopolistic structure of the markets in which the individual firms operates.

Table 4.7: Impact of Market Structure on Corporate Investment (Com) 2001-2012

Dependent Variable: LNIK				
Cross-sections included: 73				
Total pool (balanced) observations: 803				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.324452	0.316985	-1.023554	0.3064
LNQ	0.009921	0.009173	1.081568	0.2798
LNCFK	0.034849	0.011629	2.996759	0.0028***
LNUM	-0.007195	0.015887	-0.452914	0.6507
LNOPN	-0.066970	0.024754	-2.705478	0.0070***
LNUEXR	-0.060892	0.021700	-2.806017	0.0052***

LNUINF	0.207183	0.038738	5.348355	0.0000***
LNUINTR	0.102499	0.021150	4.846164	0.0000***
LNUPOL	0.353140	0.150204	2.351070	0.0190***
LNIK(-1)	0.243743	0.037730	6.460220	0.0000***
COM	0.004862	0.001980	2.454970	0.0143***
R-squared	0.897711	Mean dependent var		1.136937
Adjusted R-squared	0.886061	S.D. dependent var		1.246370
S.E. of regression	0.424644	Sum squared resid		129.8319
F-statistic	77.05947	Durbin-Watson stat		2.011758

Source: Author's Computation, 2016.

Notes to Table 4.4: Standard errors are heteroskedasticity consistent. One (*), two (**) and (***) stars denote statistical significance at 10, 5 and 1 percent level, respectively.

- ❖ COM= Market Structure in which Firms Operate (Factor Shaping the Uncertainty Impact on Corporate Investment).

All other variables in this model are as previously defined.

Table 4.7 specifically explored the sensitivity of our results to the nature of our sample firms i.e. the effect of competition/monopolistic nature of firms on the investment-uncertainty relationship. We noted earlier based on the theoretical underpinning, that in competitive market environment, the effect of uncertainty on corporate investment is more likely to be positive, the more a firm or industry is competitive in nature.

On interaction of the market structure indicator with the uncertainty terms, the coefficient of the market uncertainty term was visibly upturned from the positive posture it took previously and became negatively of -0.07195 although with relatively low magnitude as shown on table 4.7.

The coefficient on the uncertainty term is the slope coefficient for firms that are monopolistic in nature (i.e. com=0) and the product of the interaction term is the slope coefficient for the firms that are competitive in nature (i.e. com=1). The outcome of the interactive term is positive and statistically significant but the coefficient of the linear market uncertainty indicator remains negative, quite negligible and statistically

insignificant, suggestive that uncertainty affects investment decisions but not necessarily influenced by the structure of the market in which the firm or industry operates in Nigeria.

We noticed that in all the model variants, the perceived determinants of corporate investment in Nigeria are well determined and statistically significant except Tobin's Q and linear market Uncertainty indicator that become imprecise and insignificant upon interaction of factors shaping uncertainty relationship with corporate investment in Nigeria.

Regarding the diagnostic statistics, the R-Squared of the various models provide evidence in general that the explanatory variables are capable of explaining changes in the dependent variable. Similarly, the outcomes of the Durbin-Watson statistics suggest absence of higher-order auto-correlation.

4.2 Empirical Findings and Policy Implications

Based on the analyses of our regression on the determinants of corporate investment in Nigeria, the following points are outstanding:

- (i) That macroeconomic uncertainties have shown to be significant in affecting corporate investment decision of firms than market uncertainty in Nigeria. This result rejects our hypothesis that macroeconomic uncertainties have the same impact on corporate investment.
- (ii) That the degree of openness of the country to the rest of the world wade substantialdetrimental effect on corporate investment decision of rational investor in Nigeria.
- (iii) That the political situation of the country over the study period does pose any threat to forward looking investors in Nigeria.

- (iv) That interest rate volatility and inflation expectation are not factors constraining growth of investment in Nigeria
- (v) That exchange rate uncertainty exert substantial negative influence on corporate investment in Nigeria which is line with the finding of Serven, (2003), “that there is a negative impact of real exchange rate uncertainty on investment and is significantly large in economies that are highly open and in those with less developed financial systems”.
- (vi) That for the decision to invest, macroeconomic uncertainty is a greater deterrent
for firms with irreversible investment than for firms with reversible investment. This conform to Ninh, Hermes and Lanjouw, 2000 findings “that the relationship between investment and uncertainty is influenced by the extent to which investment are irreversible”.
- (vii) That market structure is a relevant factor influencing the linear market uncertainty on
corporate investment in Nigeria. This conform to Bula, 2003 findings “that the effect of uncertainty may be stronger for firms that are less competitive”. This is also in line with Grenadier, 2002 findings.
- (viii) That the sign of the relationship between uncertainty and investment is ambiguous. Whereas the relationship is positively linear under certain circumstances, it is negatively linear in some other circumstances. This result is similar to the findings of Lensink and Murinde 2005 who investigated the relationship between Uncertainty and investment, using UK firm level data and Dixit and Pindyck, 1994.

- (ix) That investment in Nigeria is highly sensitive to cash flow. This result is inconformity with Vermeulen and Mizen, 2005 findings.
- (x) That Tobin's Q exhibit positive relationship with corporate investment. This is a reflection of the increased efficiency of the Nigerian stock market.
- (xi) Investors exhibit waiting behaviour in the presence of higher uncertainty implying that investment grows at a diminishing rate during periods of higher uncertainty

On the whole, our analysis implies that the sign of the relationship between investment and uncertainty is ambiguous. While under certain circumstances uncertainty stimulates investment, in some other circumstances, the sign of the relationship is the opposite.

4.3 Discussion of Findings

The foremost implication of findings of this study stem from the striking findings that the effect of exchange rate uncertainty and the degree of openness of the economy send negative signals to rational investors in Nigeria, suggesting the sensitivity of investors to policies on the external sector. It follows that for desired and good results, sound exchange rate and trade policies should be combined with the appropriate dose of monetary and fiscal policies. This stance is in connection with the volatility of foreign exchange rates and the excessive liberalization of the economy (high degree of openness of the economy to the rest of the world). High degree of openness kills the domestic industries if the prices and quality of goods produced are not competitive in relation to foreign goods.

Weak financial system and high openness to the rest of the world are associated with a significant negative exchange rate uncertainty corporate investment link (Serven, 2003, p.12). What this implies is that Nigeria economy has weak financial system and is highly opened for trade with the rest of the world.

Weak production base and high import-dependent production structure with fragile export base are proximate factors causing high uncertainty of exchange rate (Nnanna, 2002, p.15).

The findings also reveal that irreversibility of capital stock reinforces the negative effect of uncertainty on corporate investment. The implication of this is that the markets in Nigeria are not well developed to support trading on second hand goods. The more developed the markets, the more the reversibility of capital stock, and by extension the more the probability of a positively signed investment-uncertainty relationship (Bo and Lensink, 2001, p.16).

Another major finding of the study is cash flow of firms in Nigeria. “Financial system is the key determinant of cash flow sensitivity to firm” (Vermeulen and Mizen, 2005, p.22). Firms with unsound financial health are more sensitive to cash flow. High sensitivity of investment to cash flow implies that investors have financial constraints. In all the model variants, cash flow reveals that financing is important for corporate investment decisions and finally, Tobin’s Q, interest rate variability and inflation volatility are not deterrent to investment over the study period in Nigeria.

4.4 Evaluation of Working Hypotheses

4.4.1 Hypothesis One

HO₁ That corporate investment – uncertainty relationship is non-linear for a Panel of Nigerian firms.

The result shown on table 4.3 indicate that the linear and quadratic uncertainty variables are statistically significant at 5% and 10% significant level respectively and the coefficients are positively signed though the coefficient of the quadratic market uncertainty indicator is considerably smaller with a value of 0.025050 whereas the linear uncertainty value is 0.059338. This indicates investment waiting behaviour in the event of higher uncertainty by rational investors in Nigeria. Therefore our null hypothesis that corporate investment uncertainty relationship is nonlinear is rejected. This finding conform to Dixit and Pindyck, 1994.

4.4.2 Evaluation of Hypothesis two

HO₂ The degree of openness of the Nigerian economy (DOP) has no significant effect on firms corporate investment decisions in Nigeria.

The result from our regression shown on table 4.4 indicates that the (DOP)economy to the rest of the world is inversely related to corporate investment. The coefficient of determination is negative with the value of -0.042391 and statistically significant at 10% level and therefore reject our null hypothesis.

4.4.3 Evaluation of Hypothesis three

HO₃ The structural characteristics of firms (competition, monopoly and oligopoly) and the

extent to which corporate investment are irreversible has no significant influence on corporate investment – uncertainty relationship in Nigeria.

From our result on table 4.6, we found that irreversibility of investment capital is a relevant

factor influencing firm's investment decisions in Nigeria. The coefficient of the interaction

term is considerably small at 0.002721 but statistically significant at 5% significant level.

On the other hand our result on shown on table 4.7 revealed that the coefficient of the

interactive factor i.e. market structure is 0.004862 and statistically significant at 1% level but

the coefficient of the linear market uncertainty indicator remained negative at - 0.007195 quite

negligible and statistically insignificant suggesting that uncertainty affects corporate investment decisions but not necessarily influenced by market structure in which firms operates in Nigeria. Thus our hypothesis that the structural characteristic of the market has no

Significant impact in corporate investment in Nigeria is accepted.

4.4.4 Evaluation of Hypothesis four

HO₄ There is no significant difference between the effects of macroeconomic uncertainty

and market uncertainty on corporate investment decisions in Nigeria.

From table 4.4 macroeconomic uncertainties of interest rate inflation etc. are more significant in affecting corporate investment than market uncertainty thus rejecting our hypothesis that macroeconomic uncertainty and market uncertainty have the same impact on corporate investment in Nigeria.

Following from above the macroeconomic uncertainty of inflation rate has positive relationship with corporate investment with a coefficient of 0.337452 and statistically significant at 1% level.

Again interest rate uncertainty has a coefficient of 0.149788 and statistically significant at one percent level. Furthermore exchange rate uncertainty has a coefficient of -0.075553 and statistically significant at 1% level. On the other hand, the linear market uncertainty has a negative value of -0.001669 and statistically insignificant while the quadratic market uncertainty has a positive coefficient of 0.004999 and statistically insignificant.

4.4.5 Evaluation of Hypothesis five

HO₅ The political situation of the Nigerian economy has no significant effect on firms investment decisions in Nigeria.

Abstracting from table 4.4, the outcome of our regression shows that the decision to invest by

rational investors in Nigeria is not adversely affected by the political situation in Nigeria thus accepting our hypothesis. It is evident from that table 4.4 that the coefficient of political index carried a positive value of 0.216027 and statistically significant at 10% level. This findings does not conform to existing literatures particularly Jong a Pin, 2009 perhaps due to the relative peace during the political transition period.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

This chapter starts from the summary of the study, this was immediately followed by the recommendation, conclusion, and then the contribution to knowledge and was ended with the agenda for further research on the subject matter.

5.1 Summary

Empirical study of the determinants of corporate investment in Nigeria, using the real options theory approach is scanty. This study contributes to the few empirical work on the issue, using samples of Nigerian quoted firms over a period of 12 years spanning 2001 to 2012, applying the real options theory of investment. The study provides a detailed explanation of the real options approach to investment decisions stressing the influence of irreversibility and market structure as factors shaping the investment-uncertainty relationship.

The study reviewed the theoreticalliterature and empirical contributions on the determinants of corporate investment in Nigeria, emerging and advanced economies.

We considered measure of the volatility of stock market prices, inflation rate volatility, interest rate volatility, exchange rate volatility besides degree of openness of the economy and political stability index as proximate determinants of corporate investment in Nigeria.

The study evolved a strong theoretical framework of the real options theory of investment and tested five major hypotheses:

- (i) That the corporate investment-uncertainty relationship is not linear for a panel of Nigerian firms.
- (ii) The degree of openness of the Nigerian economy has no effect on the firms' investment decisions.
- (iii) The structural characteristics of firms (competition or monopoly/oligopoly) and the extent to which investments are irreversible have no influence on corporate investment-uncertainty relationship.
- (iv) There is no difference between the effect of macroeconomic uncertainty and market uncertainty on corporate investment decisions in Nigeria.
- (v) The political environment in Nigeria has no effect on firm's investment decision.

The study was conducted using panel data and adopted fixed effect estimation technique which takes into account potential endogeneity and firm specific-effects. The outcomes of our regression are presented as follow:

- (i) Macroeconomic uncertainties have shown to be significant in affecting corporate investment decisions than market uncertainty in Nigeria. This result rejects our hypothesis that macroeconomic uncertainties have the same impact on corporate Investment

- (i) The degree of openness of the country to the rest of the world wade substantial detrimental effect on corporate investment decision of rational investor in Nigeria.
- (ii) That the political environment in Nigeria over the study period is not detrimental to increased investment decision of firms.
- (iii) That interest rate and inflation volatilities are not detrimental to investment growth in Nigeria.
- (iv) That exchange rate uncertainty exerts substantial negative influence on corporate investment in Nigeria.
- (v) That for the decision to invest, macroeconomic uncertainty is a greater deterrent for firms with irreversible investment than for firms with more easily reversible investment.
- (vi) That market structure is a relevant factor influencing the linear market uncertainty on corporate investment in Nigeria.
- (vii) That the sign of the relationship between uncertainty and investment is ambiguous. Whereas the relationship is positively linear under certain circumstances, it is negatively linear in some other circumstances.
- (viii) That investment in Nigeria is highly sensitive to cash flow.
- (ix) Tobin's Q exhibit positive relationship with corporate investment.

5.2 Recommendations

Based on the findings and the policy implications thereof, the study recommends as follow:

Exchange rate uncertainty tends to be one of the major detrimental determinants of corporate investment in Nigeria, suggesting that investors are sensitive to policy on the external sector. Intuitively, what happens in the foreign market cannot be ignored

when formulating commercial policy in Nigeria. Against this backdrop, the study recommends an appropriate and stable exchange rate policy that makes for easy business planning and forecasting by rational investors. To achieve a stable exchange rate that would ensure increased investment, government should implement efficient macroeconomic policies such as those that minimize structural rigidities in the economy. Priority should be given to the productive sectors in the allocation of foreign exchange to limit the uncertainty of the foreign exchange rate. Besides, monetary and fiscal discipline is advocated to limit the uncertainty of exchange rate which by extension would promote development in the country through increase in investment.

It is also noticed that the degree of openness of the economy exerts significant detrimental influence on firms' investment decision in Nigeria. Higher openness to international trade is associated with a significant negative exchange rate uncertainty-investment relationship. On the contrary, low degree of openness of a country to the rest of the world is associated with positive effect on corporate investment (see also, Serven, 2003, P.12. On the basis of high openness of the economy, study recommends amongst other measures erection of wall of tariff on consumption goods that can be produced domestically with liberal commercial policy on producer goods to spur investment projects.

Regarding our findings on interest rate volatility, inflation uncertainty and the index of the political environment, the study presume that the macroeconomic environment and interest rate policy are relatively stable to spur investment. To achieve a sustainable macroeconomic stability, there should be proper coordination and harmonization of monetary and fiscal policies. This would engender confidence in economic agents and assure investors that government policies are credible and predictable.

Another major finding of the study is the high sensitivity of cash flow to firms' investment in Nigeria. What determines cash flow sensitivity is the health of the financial system. Higher cash flow sensitivity to investment is an indication that the investors are experiencing financial constraints. Capital market imperfection may restrict access of some firms to external finance and could limit investment project of firms. Firms' access to external finance depends in part on their performance in terms of profits. It follows that firms' that underperform would increase their dependence on cash flow for investment expansion. All of these are indications of Nigeria weak financial system. Against the background of weak financial system, the study recommends prompt development of non-depository financial institutions that would act as financial intermediaries and ensure competition with the depository banks to instill the much desired market discipline. By extension, this would check the behaviour of banks that could increase the efficiency of the markets

In general, the study recommends prompt development of non-depository financial institutions that would act as financial intermediaries and ensure competition with the depository banks to check their behaviour and by extension increase the efficiency of the financial system. Also, the study advocates a diligent and disciplined implementation of stable macroeconomic policy measures for a sustained economic development through increased investment.

5.3 Conclusions

Researchers in the social sciences, particularly economists have long been interested in investigating more about what determines investment especially in an environment where information necessary to make decisions about future prospect by firms is difficult to obtain. Various theoretical models on investment determinants have made opposing predictions about what factors determines investment in developing

countries of which Nigeria is a part suggesting the need for empirical verification. Majority of the empirical studies on the issue were based on aggregate data set besides failing to control for potential relevant investment determinants which in many cases resulted in misleading predictions. Against this backdrop, this study empirically examined some factors that could influence firm's investment decisions, using a panel of Nigerian listed firms in the stock exchange over the period of 2001 – 2012 to ascertain the factors that are most relevant to forward looking investors in Nigeria

On the basis of the relationship between corporate investment and market uncertainty, our finding is quite ambiguous on Nigeria firms. The outcome of our regression was imprecise and thus unable to establish a discernible relationship as posited in the real options theory of investment. Under certain circumstances, the relationship is positive whereas the relationship turns otherwise at other circumstances.

It is found also that irreversibility increases the negative association of corporate investment with the market uncertainty variable but this result is reversed when the sample firms are competitive. This is in line with earlier empirical verification by Lensink and Murinde, 2005.

On the basis of comparative analysis, our conclusion is that macroeconomic uncertainty indicators of exchange rate and degree of openness of the country to outside world have significant negative effect on corporate investment and are therefore more informative to a rational investor in Nigeria. In turn, variables of inflation rate uncertainty, interest rate volatility and the index of the country political environment exhibit positive effect on corporate investment in Nigeria.

Finally, the study reveals that cash flow on all the models explored has significantly positive effect on investment, suggesting the importance of financing for

firms' investment decisions. Also, Tobin's Q, one of the market variables exhibit considerable positive effect on corporate investment.

5.4 Contributions to Knowledge

Investment has tended to be the most volatile than any other components of aggregate demand, and has in fact proved difficult to predict particularly in developing country like Nigeria where information required to predict future outcomes is difficult to obtain. There is therefore the need to have a proper understanding of the proximate determinants of corporate investment in Nigeria.

Upon the aforementioned, we present in specific terms, the study contributions to knowledge as follows:

- i. The work has contributed towards explaining the proximate determinants of corporate investment in Nigeria, focussing on issues with serious attention in real option theory (irreversibility, market structure and degree of openness of the country to trade).
- ii. The study adopted a dynamic estimation technique suggested by the real option theory of investment as opposed to the use of static estimation technique by previous investment empirical study in Nigeria
- iii. The study reveals that exchange rate uncertainty is an important factor that influences firm's investment decisions in Nigeria.
- iv. That the degree of openness of the economy to the trade with the rest of the world over the study period has been identified to be detrimental to firm's investment decisions in Nigeria.
- v. That investors in Nigeria have a waiting behaviour towards investment in the presence of higher uncertainty implying that corporate investment grows at a diminishing rate during periods of higher uncertainty.

- vi. The study exposes the influence of irreversibility and the nature of market structure on investment decisions of firms in Nigeria.
- vii. That investment in Nigeria is highly sensitive to cash flow and Tobin's Q (current market value of capital stock);
- viii. That index of Nigeria political environment, interest and inflation rates volatility are not detrimental to firms' investment decision.

5.5 Suggestions for further Research

Our study has contributed to the mirage of empirical work on the determinants of corporate investment in Nigeria, focusing on burning issues of instability of the political environment, openness of the economy as well as serious issues of irreversibility and market structure in the theoretical literature. Despite these, we are aware from the literature that technical progress of firms and the risk behaviour of the investors may influence the investment decisions/behaviour of firms in a developing country of which Nigeria is a part. Against that backdrop, further research is precipitated particularly on the mixed sign of the investment – uncertainty relationship which has remained unresolved in economic literature.

REFERENCES

- Abel, A.B. (1983). Optimal investment under uncertainty, *American Economic Review*, 73, pp. 228-233
- Abel, A.B. (1986). Optimal investment with costly reversibility, *Review of Economic Studies*, vol. 6 pp. 581-593
- Abel, A.B. and Eberly. (1994). A unified model of investment under uncertainty. *American Economic review, series 84 vol. 5 pp. 1369 – 1384.*
- Abel, A.B and J.C. Eberly (1999). The effects of irreversibility and uncertainty on capital accumulation, *Journal of Monetary Economics*, 44, pp, 339-377.
- Abel, A.B. and Blanchard, O.J. (1986). The present value of profits and cyclical movement of Investment, *Econometrica*, vol. 54 pp. 249 - 272
- Adelegan O.J and Ariyo A. (2008). Capital market imperfection and corporate investment behaviour: A switching Regression Approach Using Panel Data for Nigerian Manufacturing Firms *journal of money, investment and Banking issue 2 – 2008.*
- Aizenman, J. and Marion, N. (1993). Volatility, investment and disappointment aversion. *NBER Working Paper No. 5386.*
- Aizenman, J. (1992). Trade reforms, credibility and development. *Journal of Development Economics* vol.39 no. 1, pp. 163- 187.
- Ajide and Lawanson, (2012). Modelling the long run determinants of domestic Private investment in Nigeria: *Asian Social Science* vol. 8 no. 13, 2012.
- Akelof, G. (1970). The market for lemon: Quality uncertainty and the market mechanism: *The Quarterly Journal of Economics* vol. 84 no 3 (August) 1970), pp.488 - 500
- Amran, M. Kulatilaka, N, and Copeland, P (1999). *Real option*: Boston M.A, Harvard Business School Press.
- Anyanwu, O. (1994). *The Macroeconomic theory and application*: Onitsha Jounce Education Publishers Limited.
- Arelleno M.S. and Bover O. (1995). Another look at the instrumental variable estimation of error components model. *Journal of Econometrics* vol. 6 Pp29 – 51
- Arrow, K. (1968). Optimal policy with irreversible investment in Wolfe J.N. (ed.) Value, capital and growth, *paper in honour of Sir John Hicks Chicago Aldine Publishing Company* pp. 1-19.

- Bakare, A.S. (2011). The determinants of private domestic investment in Nigeria: *Far East Journal of Psychology and Business*. Vol. 4 No 2 August.
- Baltagi, B.H. (2001). Economic analysis of panel data (*second ed.*) John Wiley and sons Chichester.
- Baro, A.B. (1990). The stock market and investment: A review of financial studies vol. 3 pp. 115 – 131.
- Barro. R (1997) Determinants of Economic Growth: A cross – country Empirical Study MIT Press, Cambridge. Pp 145
- Bernake, B.S, (1983). Irreversibility, uncertainty and cyclical investment, *Quarterly journal of economics*, 98, pp. 88- 106.
- Bertola, G. N S Caballero, R. (1994). Irreversibility and aggregate investment .*Review of Economic Studies* 61: 223- 246.
- Bialowolski, P. and Weziak-Bialowolski, (2013). External factors affecting investment decisions of companies. *Economics Discussion Paper* No. 2013-44 Kiel Institute for the World Economy.
- Bischoff, C. W. (1969). Plant and equipment spending: A comparism of models. *Brookings Papers on Economic Activity* vol. pp. 127- 233.
- Bloom, N. (2000). The real options effects of uncertainty on investment and labour demand. *Institute for Fiscal Studies working paper* 00/15.
- Bloom, N, Blundel, R. Griffith, R. and Howitt, P. (2007). Competition and innovation an inverted- u relationship. *Quarterly Journal of Economics*, may 2005 pp.701- 727.
- Bo, H and R. Lensink (2001). Uncertainty and investment of Dutch firms: *An Empirical Analysis Using Stock Market Data, University of Groningen, mimeo.*
- Bo, H., Lensink, R. and E. Sterken (2001). Uncertainty and financing constraints, *European Finance Review*, 7, pp. 297-321.
- Bond, S. and Cummins, (2001). Noisy shares price and the q model of investment. *Workingpaper, IFS.*
- Bond, S.R and Lombardi D. (2006). Aggregation and investment dynamics *Nuffield College, Oxford and IMF.*
- Bond, S.R, and Cummis J.C. (2001). Uncertainty and investment: An empirical investigation using data on analysing profit forecast, *Working paper FEDS.*
- Bond,S.R, Moessner, H. Mumtaz, M and Syed, M.(2005). Micro econometric evidence on uncertainty and investment. *Discussion paper, institute for fiscal studies.*

- Bulan, L.C., Mayer and T, Somerville (2003). Irreversibility investment, real option and competition: Evidence from real estate development. *Working paper, WhartonSchool*.
- Bulan, L. (2004). Real options, Irreversible investment and firm uncertainty: New Evidence from U.S. Firms. *Review of Financial Economics*, vol. 14 pp. 255-279.
- Busari, T.D. and O. Olaniyan (1998). Policy uncertainty and private investment in Nigeria. *In: Rekindling Investment for Economic Development in Nigeria (Selected papers from the 1998 Nigerian Economic Society Conference)*.
- Caballero. R. (1991). On the sign of the investment – uncertainty relationship *American economic review* vol. 81 pp. 279 – 288.
- Caballero, R and Pindyck, (1996). Uncertainty, investment and industry evolution. *International Economic review*, 37, 641-662.
- Chenery, H.B. (1982). Over capacity and the accelerator principle. *Journal of Economics and Social Studies*, vol. 10, pp. 24-30.
- Chhibber, A.M. Dailami and Shafik, N. (1992). Reviving private investment in developing countries. Empirical studies and Policy. *Elservier Science Publishers*.
- Chirinko, R. Fazzari, S.M. and Meyer, A. (1999). How Responsive is business capital formation to its user cost? An exploration with micro data. *Journal of public Economics* (forthcoming).
- Clark, T.M, (1917). Business acceleration and the law of demand: Technical factor in economic cycles. *Journal of political economy*, vol. 25 no. 1 pp. 2177- 235.
- Collier, P. and J.W. Gunning (1999). Why has African grown slowly? *The Journal of Economic Perspectives*, vol. 13, 3 pp. 3 -22.
- Collier, P. and Partillo, C. (2000). Investment and risk in Africa, *Basingstoke: Macmillan*.
- Corden, W. (1974). Trade policy and economic welfare: *Oxford Clarendon Press*.
- De Long, B. and summer, H. (1991). Equipment investment and economic growth: *Quarterly Journal of Economics* 106 no. 2 pp.445-502`
- Dixit, A.K. and R.S. Pindyck (1994). Investment under uncertainty *Princeton, NJ: PrincetonUniversity press*). *New Jersey 1994*.
- Dollar, D. (1992). Outward oriented developing economies really do grow more rapidly: evidence from 95 LDCs. *Economic Development and Culture Change* vol. 40No.3.

- Donwa P. and Agbontaen O.O. (2010). The trend and dynamics of determinants of investment in Nigeria, *International Review of Business Research Paper* vol.6 No. 6 December 2010 pp. 153 – 163.
- Doshi, H. Kumar, P. and Yerramilli (2013). Uncertainty and capital investment: real option or financial frictions? *C.T. Bauer College of Business, University of Houston*.
- Driver, C and Moreton. D. (1991). The influence of uncertainty on U.K. manufacturing investment, *Economic Journal* vol. 101 pp. 1452- 1459.
- Edo, S.E (2005). Recent evidence on stock market inefficiency in a developing economy: *International Journal of Economic Research*, Vol. 2, No. 1, pp1-16
- Ejedegba .R.U. (2009). The relationship between corporate investment and uncertainty evidence from Nigerian firms .*Ethnographer* vol. 11 No. 3 pp 89 – 108
- Ejedegba R.U. (2006). The relationship between corporate investment and uncertainty: *Evidence from SSA firms. Unpublished Ph.D. thesis, University of Benin, Benin-city*.
- Erickson, T. and Whited T, (2000). Measurement error and the relationship between investment and q, *Journal of Political Economy*, 108, 1027- 1057.
- Eisner,R and Strotz, R.H, (1963). Determinants of business investment. Impact of monetary policy, *Englewood cliffs prentice – hall*.
- Farla, k.D. De Combrugghe and Vertspagen, B. (2013). Institutions, foreign direct investment, and domestic investment: crowding out or crowding In. *World development report*.
- Folta, T.B, (1998). Governance and Uncertainty: The Trade-off between Administrative control and commitment. *Strategic Management Journal* vol. 19, no. 11 pp. 1007-1028.
- Grayburn, J. (2012). Real Option and Investment Decision Making. *Promoting Choice and Value for all Gas and Electricity Customers* vol. 32 no. 12.
- Green, J, and Villanura (1991). An empirical analysis: *IMF Staff Paper* vol. 38 pp. 11-30.
- Grenadier, S.R. (2002). Option exercise games: An application to the equilibrium investment strategies of firms. *The Review of Financial Studies*, 15, pp. 691-721.
- Grossman, G.M. and Helpman, E. (1991). Trade innovation and growth. *The American Economic Review*, Vol, 80, No, 2, Paper and Proceedings pp. 86- 91

- Gui, H.K. (2011). Real option in sportswear retail investment valuation. *Portland State University*.
- Guiso, L. and G. Parigi (1999). Investment and demand uncertainty: *Quarterly Journal of Economics*, 114, 185-227.
- Hadhek Z and Mohammed K.K.(2012). Interaction between political instability and investment *Journal of Economics and International Finance vol. 4,(2) pp 49 – 54 January, 2012*.
- Hall, R.E (1977). Investment, interest rates and the effects of stabilisation policies. *Brookings Papers, Washington Vol. 1. pp. 61- 103*.
- Hall, R. E. and Jorgenson D.W. (1967). Tax policy and investment behaviour. *American Economic Review*, vol.57 pp. 391- 414.
- Hartman, R. (1972). The effects of price and cost uncertainty on investment. *Journal of Economic Theory*, 5, 258- 266.
- Hayashi, R. (1982). Tobin's marginal q and average a neoclassical interpretation, *Econometrical*, 50, 215-224.
- Hayashi, R and Inoue, F (1991). The relationship between firm growth and Q with multiple capital goods. Theory and evidence from panel data on Japanese firms *Econometrica* 59, 731 – 754.
- Houston. J. and James. C. M. (2001). Where do merger gain comes from. The perspective of insiders and outsiders. *Journal of financial economics vol. 60 pp 285- 331 2001*.
- Ibarra, L. (1995). Credibility of trade policy reform and investment: The Mexican experience. *Journal of Development Economics vol. 47, pp. 39- 60*.
- Iyoha, M.A (1999). External debt and economic growth in Sub-Saharan African countries: An Econometric Study. *African Economic Research Consortium (AERC), Nairobi, Research Paper 90, March*.
- Jangilli, R and Kumar, S. (2014). Determinants of corporate sector investment in India *Reserve Bank of India issue of 2014*.
- Jong –A-Pin R (2009) On the measurement of political instability and its impact on economic growth *Eur. Journal of political econ*, 25: 15-29.
- Jorgenson, D. (1963). Capital theory and investment behaviour. *American Economic Review paper and proceedings vol. 53. pp. 247- 259*.
- Jorgenson. D.W and Hall, Robert E. (1967). Tax Policy and Investment Behavior. *The American Economic Review*, 57, No. 3 (June): 391-414.
- Jorgenson, D.W. (1971). Econometric studies of Investment behaviour, *a survey of economic literature vol. 9 pp 1- 47*.
- Jorgenson D.W and Siebert C.D (1968), A comparison of alternative theories of corporate investment behaviour, *American Economic Review*, 58 (4), 681-712.

- Kalckreuth, U.V. (2000). Exploring the role of uncertainty for corporate investment decisions in Germany. *Discussion paper, economic research group of the Deutsche bundesbank, September 2000 issue.*
- Kalckreuth .U. (2001). Monetary transmission in Germany, New perspectives on financial constraints and investment spending *ECB working paper no, 109.*
- Kalu I.E and James O.E (2012). Private investment in Nigeria and manufacturing sector: A VECM approach. *Journal of Economics and Sustainable Development* vol. 3 No. 11,2012.
- Kerlinger F.N (1986). Foundation of behavioural research (3rded.) *Fort worth, TX: Holt Rinehart and Wilston.*
- Keynes, J.M, (1936). The general theory of employment, interest and money, *Macmillan.*
- Khan M.S. and Reinhert C.M. (1990). Private investment and economic growth in developing countries: *World Development* vol.18 No. 1 Pp 19 – 27.
- Kim, B and Jung, K. (2011). Corporate cash holdings and tax- induced debt financing- Asia *Pacific Journal of Financing Studies* vol. 37 pp, 983- 1023.
- Knudsen, O.K., and Scandizzo, P.L. (2002). An option approach to sustainable development? *Working Paper, World Bank and CEIS.*
- Knudsen, O.K., and Scandizzo, P.L. (2001). The cost benefit analysis of biotechnology projects. *Working paper, World Bank and CEIS.*
- Leahy, J. V and T.M. Whited (1996). The effect of uncertainty on investment: *The European Journal of Finance*, vol. 00, 0, pp 1-11.
- Lensink, R. (2002). Is the Uncertainty-investment link non-linear? Empirical evidence for developed economies *Weltwirtschaftliches Archive*, 138, pp. 131-147.
- Lensink, R. and V. Murinde (2005). The inverted-u hypothesis for the effect of uncertainty on investment: Evidence from U.K firms. *The European Journal of Finance*, Vol. 00,pp 1-11.
- Lensink, R., Bo, H. and E. Sterken (2001). *Investment, capital market imperfections and uncertainty: Theory and empirical results.* Edward Elgar, Cheltenham, UK.
- Loncar, D. (2011). Applicative model for appraisal of investment projects based on real option methodology. *Serbian Journal of Management* vol. 6 No. 2 pp. 269-282.
- Luehran T.A., (1998a). Investment Opportunities as real options: getting started on number, *Harvard Business Review* 76, 51-67.
- Luehran. T.A (1998b) Strategy as a portfolio of real options: *Harvard Business Review* 76, 89 - 99

- McDonald, R. and D. Siegel (1986). The value of waiting to invest, *Quarterly Journal of Economics*, 101, pp. 707-727.
- McDonald, R. and D. Siegel (1985). Investment and valuation of firms when there is an option to shut down. *International Economic Review*, 26, 331- 349.
- McKinnon, R. and Shaw. (1973). Money and capital in economic development. *Washington, D.C: Brookings Institution.*
- Mlambo, K. and Oshikoya, T.W. (2001). Macroeconomic factors and investment in Africa *Journal of Africa Economics*, 10 supplement 2. Pp. 12-47.
- Mun, J, (2006). Real options analysis versus traditional discounted Cash Flow Valuation in *Layman's Terms*.JohnathanMun@cs.com
- Myers, S.C. (1977). Determinants of corporate borrowing. *Journal OF Financial Economics*, 5, pp 147 – 175.
- Ngugi, R.W., Murinde,V. and C.J. Green (2002). Does the revitalization process really enhance stock market microstructure? Evidence from the Nairobi stock exchange. *Africa Finance Journal* vol.4 No.1 pp32-61
- Ninh, L.K., Hermes, N. and G. Lanjouw (2000). Irreversible investment and uncertainty: An Empirical Study of RiceMills in the Mekong River Delta, Vietnam.
- Nnanna, O. J. (2002). Monetary policy and exchange rate stability in Nigeria. *Nigerian Economic Society (NES) Seminar paper, May 23, Lagos.*
- Obadan, M. I. (2002). Towards exchange rate stability in Nigeria. *Nigerian Economic Society (NES) Seminar paper on Monetary Policy and Exchange Rate Stability, May 23, Lagos.*
- Ogwaza, k. and Suzuki, K. (2000). Uncertainty and Investment: Some Evidence from panel data of Japanese manufacturing firms. *Japanese Economic Review* vol 2 pp 170 -192.
- Olaniyan, O. (2000). The effects of instability on aggregate investment in Nigeria: *The Nigerian journal of social and economic Studies*, vol. 42 No. 1 pp.23-26.
- Oriavwote V.E and Oyovwi D.O. (2013). Modelling private investment behaviour in Nigeria: A co-integrated approach, *Accounting and Finance Research* vol.2.No3,2013.
- Oyejide, T. A. (2002). Monetary policy and its effects on the Nigerian economy. *Nigerian Economic Society (NES) Seminar paper on Monetary Policy and Exchange Rate Stability, May 23, Lagos*
- Partillo, C. (1997). The impact of uncertainty on the investment behaviour of Ghanaian manufacturing sector firms *IMF working paper 1997.*

- Pattillo, C. (1998). Investment, uncertainty and irreversibility in Ghana, *IMF Staff Papers*, 45,522-553.
- Pindyck, R. (1991). Irreversibility, uncertainty and investment. *Journal of Economic Literature*, 29(3), pp. 1110-1148.
- Pindyck, R. (1993). A note on competitive investment under uncertainty. *The American economic review* vol. 83 pp 273- 277.
- Pindyck, R. and A. Solimano (1993). Economic instability and aggregate investment, *NBER macroeconomic Annual*, 8, pp. 259 – 303. Policy research working paper (WPS2823). *The World Bank, Washington D.C.*
- Roderik, D. (1994). The limits of trade policy reforms in developing countries. *Journal of Economic Perspectives* vol. 6. No.1 pp. 87- 105.
- Romer, D. (1994). Openness and inflation: theory and evidence. *Quarterly Journals of Economics*, Vol. CVIII issue 4 pp.869- 903.
- Sachs, J. and Warner, (1995). Source of Slow Growth in African Economies. *Journal of African Economies*.
- Saman. P. Masoud. R. and Seyed A.T. (2011). A robust optimisation approach to closed loop supply network designed under uncertainty. *Applied mathematics modelling* 35 pp 637- 649, 2011.
- Samuel, C. (1996). The investment decision: A re-examination of theories using panel data. *World Bank policy research working paper, 1656, The World Bank Washington, D.C.*
- Sarkar, S. (2000). On the investment – uncertainty relationship in a real options model, *Journal of Economic Dynamic and Control*, 24, pp.219-225.
- Serven, L. (2003). Real exchange rate uncertainty and private investment in LDCs, *Review of Economics and Statistics*, 75, pp. 212-217.
- Serven, L. and Solimano. A, (1998). Debt crises, adjustment policies and capital formation in developing countries: where do we stand? *World Development*, Vol.21, pp.127140.
- Solymani, M.S and Akbari, A. (2011). The Relationship between exchange rate uncertainty and Investment in some of Sub- Saharan African countries. *International Journal of Business and Public Management* vol. 1 No. pp. 51-57.
- Summer. P. (1981). Investment in Finished Goods Inventories: An Analysis of Adjustment Speeds” (with R. Rosanna), *The American Economic Review: Papers and proceedings* (May 1981), pp. 17-22.
- Tito, N. T. and Filho S. (2007). Is the investment- uncertainty link really elusive? The harmful effects of inflation uncertainty in Brazil. *Working Paper series* 157.
- Tobins, J, (1961). Investment and production: A study in theory of capital- using enterprise,

Harvard University press, Cambridge, Massachusetts.

- Trigeorgis, L. (1996). Real option: managerial flexibility and strategy in resource allocation: *Cambridge and London, MIT press* pp. 13, 427.
- Vermeulen, P. (2001). The impact of uncertainty on investment plans, *Research Series 200205-5, National Bank of Belgium*
- Vermeulen, p. and P. Mizen (2004). Corporate investment and financial constraints: What Drives the Relationship? European Central Bank. *Working Paper series no 485 may 2005.*
- Whited. T.N. (2001). Is it inefficient investment that causes the diversification discount? *The Journal of Finance vol. LVI no.5 Oct. 2001.*
- Zarnowitz, V. (1992). Business Cycles, Theory, History, Indicators, and Forecasting. *Studies in Business Cycle vol. 27, NBER.*
- Zeufack, A. G. (1997). Structure de Propriété et Comportement d'Investissement en Environnement Incertain: Estimation sur Données de Panel du Secteur Manufacturier Camerounais. *Revue d'économie du Développement, 0(1), 29-59.*

Appendix 1
Investment Data: percentage growth of
Investment in elected SSA Countries 1980 -
2013

YEAR	S.Africa	Nigeria	Ghana	Kenya	YEAR	S.Africa	Nigeria	Ghana	Kenya
1980	16244	10163.4	0.26	12451	1980				
1981	19947	17599.59	0.34	14508	1981	22.8	73.2	30.8	16.5
1982	22674	15957.82	0.31	13364	1982	13.7	-9.3	-8.8	-7.9
1983	24576	12679.33	0.69	14349	1983	8.4	-20.5	122.6	7.4
1984	26518	7989.76	1.85	16143	1984	7.9	-37.0	168.1	12.5
1985	29099	8352.48	3.27	17631	1985	9.7	4.5	76.8	9.2
1986	29350	11762.46	4.75	23064	1986	0.9	40.8	45.3	30.8
1987	31168	14172.58	7.73	25735	1987	6.2	20.5	62.7	11.6
1988	40701	14569.71	11.41	30359	1988	30.6	2.8	47.6	18.0
1989	50856	26835.51	19.1	33156	1989	25.0	84.2	67.4	9.2
1990	55485	40621.31	24.77	40560	1990	9.1	51.4	29.7	22.3
1991	56954	45390.23	32.64	42670.8	1991	2.6	11.7	31.8	5.2
1992	58255	71109.16	38.61	43776.8	1992	2.3	56.7	18.3	2.6
1993	62601	97365.51	92.13	56505.2	1993	7.5	36.9	138.6	29.1
1994	73045	105868	117.45	75616.2	1994	16.7	8.7	27.5	33.8
1995	87042	142271.2	163.8	99497.2	1995	19.2	34.4	39.5	31.6
1996	100632	204433.7	233.2	110142	1996	15.6	43.7	42.4	10.7
1997	113221	243346.8	333.82	118535	1997	12.5	19.0	43.1	7.6
1998	126913	242770.3	258.48	133366	1998	12.1	-0.2	-22.6	12.5
1999	125754	232240	284.408	141403	1999	-0.9	-4.3	10.0	6.0
2000	139647	331678.5	310.336	161714	2000	11.0	42.8	9.1	14.4
2001	153525	372819.5	336.264	185186	2001	9.9	12.4	8.4	14.5
2002	175594	500423.6	362.192	178466	2002	14.4	34.2	7.7	-3.6
2003	200507	866703.8	388.12	179254	2003	14.2	73.2	7.2	0.4
2004	225410	864000.3	414.048	207196	2004	12.4	-0.3	6.7	15.6
2005	263754	805582.4	439.976	264728	2005	17.0	-6.8	6.3	27.8
2006	324083	1547995	4047	309592	2006	22.9	92.2	819.8	16.9
2007	406257	1938379	4656	355090	2007	25.4	25.2	15.0	14.7
2008	524678	2054570	6474	409597	2008	29.1	6.0	39.0	15.4
2009	531957	3052202	7216	452549	2009	1.4	48.6	11.5	10.5
2010	521613	4014967	8638	508453	2010	-1.9	31.5	19.7	12.4
2011	631913	3908280	9728.8	537912	2011	21.1	-2.7	12.6	5.8
2012	689971	3357398	10903	581829	2012	9.2	-14.1	12.1	8.2

Source: International Financial Statistics, 2013

Appendix 2 Gross Domestic Product (GDP) and Macroeconomic Variables in

Year	DOP	EXR	INF	INT	GDP	INV' Nb	INV N'm	INV/GDP	NGDP
1983	0.27	0.7486	23.2	10	230400	13.3	13300	5.77	58
1984	0.23	0.8083	39.6	12.5	227300	9.1	9100	4.00	6
1985	0.25	0.9996	5.5	9.25	253000	8.8	8800	3.48	73
1986	0.22	3.3166	5.4	10.5	257800	11.4	11400	4.42	74
1987	0.43	4.1916	10.2	17.5	256000	15.2	15200	5.94	111
1988	0.35	5.353	38.3	16.5	275400	17.6	17600	6.39	147
1989	0.41	7.65	40.9	26.8	295100	26.8	26800	9.08	228
1990	0.58	9.0001	7.5	25.5	328600	40.1	40100	12.20	281
1991	0.68	9.7545	13	20.01	328600	45.2	45200	13.76	329
1992	1.03	19.6609	44.2	29.8	337300	70.8	70800	20.99	554
1993	1.12	22.6309	57.2	18.32	342500	96.9	96900	28.29	715
1994	1.07	21.8861	57	21	345200	105.6	105600	30.59	945
1995	4.84	218861	72.8	20.18	352600	141.9	141900	40.24	2008
1996	5.1	21.8861	29.3	19.74	367200	204	204000	55.56	2799
1997	5.53	21.8861	8.5	13.54	377800	242.9	242900	64.29	2906
1998	4.09	21.8861	10	18.29	388500	242.3	242300	62.37	2816
1999	5.22	92.5284	6.6	21.32	393100	231.7	231700	58.94	3312
2000	7.11	109.55	6.9	17.98	412300	331.1	331100	80.31	4727
2001	7.47	113.45	18.9	18.29	431800	372.1	372100	86.17	4909
2002	7.21	126.9	12.9	24.85	451800	499.7	499700	110.60	7128
2003	10.44	137	14	20.71	495000	865.9	865900	174.93	8742
2004	12.49	132.8	15	19.18	527600	863.1	863100	163.59	11673
2005	17.88	129	17.9	17.95	561900	804.4	804400	143.16	14735
2006	17.51	127	8.2	17.26	595800	1546.5	1546500	259.57	18709
2007	19.27	116.8	5.6	16.94	634300	1937	1937000	305.38	20940
2008	22.84	131.25	11.6	15.14	672200	2053	2053000	305.42	24665
2009	18.8	148.1	27.8	18.99	719000	3050.6	3050600	424.28	25236
2010	24.89	148.2127	13.72	17.59	776300	4012.9	4012900	516.93	34494
2011	30.05	156.7	5.4	15.78	834000	3908.3	3908300	468.62	38017
2012	26.8	155.92	8.2	16.79	888900	3357.4	3357400	377.70	41177
2013	24.89	157.311	10.25	16.72	950100	2532.8	2532800	266.58	3866

Nigeria

Source: International Financial Statistics (IFS) 2013

Appendix 3
Stock Market and Macroeconomics Variables 1995 - 2012

AUTOMOBILE	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
DUNLOP										4.42
1995	#DIV/0!	#DIV/0!	#DIV/0!	3.6442556	13.280599	4.84	49.1133121	15.71362	2.9413027	4.33
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.9455028	8.6759865	5.10	45.7353322	7.145999	3.0144953	3.75
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.1348152	4.5574358	5.52	40.814013	5.965291	3.0951766	4.50
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.6312083	2.6608406	4.09	33.1395427	6.100733	3.1888952	5.08
1999	#DIV/0!	#DIV/0!	#DIV/0!	1.4919276	2.2258479	5.22	18.3776358	6.299982	3.3015577	5.00
2000	#DIV/0!	#DIV/0!	#DIV/0!	1.4941556	2.2325009	7.11	15.4063485	6.327983	3.0917044	7.00
2001	0.203993701	1.617667	0.1656461	1.5004166	2.2512499	7.47	14.2639374	6.346684	3.2282442	7.00
2002	1.303977201	1.316843	0.0977811	1.5654273	2.4505626	7.21	13.1114045	6.391287	3.3821231	6.67
2003	0.675369397	0.862753	-0.1042414	1.6751673	2.8061856	10.44	13.3391396	6.736821	2.05732	4.75
2004	1.304500853	0.818492	-0.0662276	1.7900434	3.2042552	12.49	14.1402717	7.13008	2.0702113	4.83
2005	0.388797114	0.462068	-0.0186064	1.965979	3.8650735	17.88	14.9477281	7.561522	2.2131486	5.83
2006	0.030849854	0.222273	-0.0423479	2.2116007	4.8911775	17.51	15.5291734	7.793462	2.3185186	7.50
2007	-1	0.982702	-0.1329456	1.9502076	3.8033098	19.27	15.6979531	8.38691	2.2805526	9.58
2008	-0.3245	0.02106	-0.0013668	0.8889519	0.7902355	22.84	10.2350802	8.685141	1.9309764	10.50
2009	-0.044423326	0.264247	-2.2342287	0.0923047	0.0085202	18.80	4.71849407	9.965353	0.6418982	10.17
2010	-1	0.202817	-0.0814352	0.0899394	0.0080891	24.68	4.69121759	4.233454	0.7663115	8.50
2011	-0.5192	0.033696	-0.0021869	0.0875723	0.0076689	29.35	0.55154329	1.979899	0.9687363	8.33
2012	-0.5841	0.037908	-0.0024602	0.079695	0.0063513	27.13	0.98358553	1.449569	4.9992449	6.88
R.T BRIS										
1995	#DIV/0!	#DIV/0!	#DIV/0!	6.2464548	39.018198	4.84	49.1133121	15.71362	2.9413027	7.92
1996	#DIV/0!	#DIV/0!	#DIV/0!	6.4083383	41.0668	5.10	45.7353322	7.145999	3.0144953	7.00
1997	#DIV/0!	#DIV/0!	#DIV/0!	6.599915	43.558878	5.52	40.814013	5.965291	3.0951766	7.00
1998	#DIV/0!	#DIV/0!	#DIV/0!	6.8099606	46.375563	4.09	33.1395427	6.100733	3.1888952	7.96
1999	#DIV/0!	#DIV/0!	#DIV/0!	7.0097543	49.136655	5.22	18.3776358	6.299982	3.3015577	7.54
2000	#DIV/0!	#DIV/0!	#DIV/0!	7.1657253	51.347619	7.11	15.4063485	6.327983	3.0917044	8
2001	0.030806463	0.520319	0.905393	7.2642146	52.768814	7.47	14.2639374	6.346684	3.2282442	4.42
2002	-0.158907502	0.695447	0.7384809	7.4274519	55.167042	7.21	13.1114045	6.391287	3.3821231	4.33
2003	0.02341441	1.839695	2.2935723	7.6043026	57.825418	10.44	13.3391396	6.736821	2.05732	3.75
2004	1.10781021	8.278348	0.8313189	8.0581485	64.933757	12.49	14.1402717	7.13008	2.0702113	4.50
2005	0.014419064	2.534483	0.5066513	8.6367167	74.592876	17.88	14.9477281	7.561522	2.2131486	5.08
2006	0.567266279	3.309545	1.3300585	9.2717451	85.965257	17.51	15.5291734	7.793462	2.3185186	5.00
2007	0.252705409	7.450451	0.9733936	9.7578008	95.214676	19.27	15.6979531	8.38691	2.2805526	7.00
2008	0.121930432	8.559555	0.8000583	6.8097268	46.372379	22.84	10.2350802	8.685141	1.9309764	7.00
2009	0.006978738	4.450318	0.4910676	2.4485816	5.9955519	18.80	4.71849407	9.965353	0.6418982	6.67
2010	-1	2.11839	0.1713581	2.4285445	5.8978285	24.68	4.69121759	4.233454	0.7663115	4.75
2011	-0.1432	0.002563	-4.588E-05	2.4086394	5.8015436	29.35	0.55154329	1.979899	0.9687363	4.83
2012	-0.1611	0.002884	-5.162E-05			27.13	0.98358553	1.449569	4.9992449	5.83
										7.50
BREWERIES										9.58
CBRE										10.50
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.6124984	2.6001512	4.84	49.1133121	15.71362	2.9413027	10.17
1996	#DIV/0!	#DIV/0!	#DIV/0!	0.174656	0.0305047	5.10	45.7353322	7.145999	3.0144953	8.50
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.626745	2.6462992	5.52	40.814013	5.965291	3.0951766	8.33
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.6214964	2.6292504	4.09	33.1395427	6.100733	3.1888952	6.88
1999	#DIV/0!	#DIV/0!	#DIV/0!	1.6010163	2.5632533	5.22	18.3776358	6.299982	3.3015577	7.92
2000	#DIV/0!	#DIV/0!	#DIV/0!	1.5552878	2.4189201	7.11	15.4063485	6.327983	3.0917044	7.92
2001	0.076992868	0.004983	-0.3240686	1.4662501	2.1498894	7.47	14.2639374	6.346684	3.2282442	7.00
2002	0.409282368	0.011168	0.1530269	1.2978617	1.684445	7.21	13.1114045	6.391287	3.3821231	7.00

	V/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2003	0.160910567	0.415794	0.1773635	1.0435775	1.089054	10.44	13.3391396	6.736821	2.05732	7.96
2004	2.384393106	2.654898	0.2079976	0.8005832	0.6409335	12.49	14.1402717	7.13008	2.0702113	7.54
2005	0.287051799	0.581142	-0.0417927	0.7321913	0.536104	17.88	14.9477281	7.561522	2.2131486	8
2006	0.1284399	0.332272	-0.1414986	0.6669869	0.4448715	17.51	15.5291734	7.793462	2.3185186	8.50
2007	-0.134730903	0.406093	-0.0981487	0.6252992	0.3909991	19.27	15.6979531	8.38691	2.2805526	8.33
2008	-0.143291043	0.510847	-0.291873	0.6917655	0.4785395	22.84	10.2350802	8.685141	1.9309764	6.88
2009	-0.168843657	0.596087	-0.4066496	0.8052669	0.6484548	18.80	4.71849407	9.965353	0.6418982	7.92
2010	-1	0.568756	-0.5958996	0.8953844	0.8017132	24.68	4.69121759	4.233454	0.7663115	7.92
2011	-0.3384	0.014314	-0.0006055	0.2003068	0.0401228	29.35	0.55154329	1.979899	0.9687363	7.00
2012	-0.3807	0.016104	-0.0006812			27.13	0.98358553	1.449569	4.9992449	7.00
GUNIG										
1995	#DIV/0!	#DIV/0!	#DIV/0!	61.83858	3824.01	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.6225736	2.632745	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	60.861521	3704.1247	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	59.245797	3510.0645	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	56.96755	3245.3017	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	54.240933	2942.0788	7.11	15.4063485	6.327983	3.0917044	
2001	0.59989819	1.592735	0.5155641	51.347719	2636.5882	7.47	14.2639374	6.346684	3.2282442	
2002	0.258151837	1.203744	0.3256744	47.348547	2241.8849	7.21	13.1114045	6.391287	3.3821231	
2003	0.549593502	1.552446	0.41398	43.057992	1853.9906	10.44	13.3391396	6.736821	2.05732	
2004	0.174659786	2.69719	0.3185679	43.234438	1869.2166	12.49	14.1402717	7.13008	2.0702113	
2005	0.012077117	1.599927	0.1665213	44.479631	1978.4375	17.88	14.9477281	7.561522	2.2131486	
2006	0.020075803	1.990914	0.2519338	44.980976	2023.2882	17.51	15.5291734	7.793462	2.3185186	
2007	0.219369181	2.845393	0.3548918	46.154218	2130.2118	19.27	15.6979531	8.38691	2.2805526	
2008	-0.022740967	2.403156	0.3228917	49.199627	2420.6033	22.84	10.2350802	8.685141	1.9309764	
2009	0.065368117	2.035378	0.3772133	41.031941	1683.6202	18.80	4.71849407	9.965353	0.6418982	
2010	0.205363061	3.038819	0.3591718	26.491593	701.80448	24.68	4.69121759	4.233454	0.7663115	
2011	-1	3.460063	0.3889045	16.353398	267.43364	29.35	0.55154329	1.979899	0.9687363	
2012	-0.7212	0.130032	-0.0234448		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
NBRE										
1995	#DIV/0!	#DIV/0!	#DIV/0!	22.072	487.1732	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	0.5861806	0.3436077	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	22.075148	487.31216	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	21.642222	468.38579	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	21.247209	451.4439	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	20.602826	424.47643	7.11	15.4063485	6.327983	3.0917044	
2001	1.421845734	1.829861	0.2966601	20.262224	410.55772	7.47	14.2639374	6.346684	3.2282442	
2002	0.351653333	1.795563	0.19708	20.554493	422.48718	7.21	13.1114045	6.391287	3.3821231	
2003	0.088047864	1.546948	0.1469225	20.660586	426.85982	10.44	13.3391396	6.736821	2.05732	
2004	-0.037083933	4.764172	0.0934176	19.610191	384.5596	12.49	14.1402717	7.13008	2.0702113	
2005	-0.052470375	2.535933	0.1574429	19.056921	363.16623	17.88	14.9477281	7.561522	2.2131486	
2006	0.010401543	2.883163	0.2194239	18.832935	354.67944	17.51	15.5291734	7.793462	2.3185186	
2007	0.266224082	2.873557	0.377388	18.436938	339.92069	19.27	15.6979531	8.38691	2.2805526	
2008	0.085675832	2.824007	0.4043665	18.725763	350.65419	22.84	10.2350802	8.685141	1.9309764	
2009	0.069520635	2.287463	0.4044764	14.338904	205.60417	18.80	4.71849407	9.965353	0.6418982	
2010	-1	3.478289	0.4110034	8.130215	66.100397	24.68	4.69121759	4.233454	0.7663115	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2011	-0.2968	4.6952	0.56592	5.1816179	26.849164	29.35	0.55154329	1.979899	0.9687363	
2012	-0.3339	5.2821	0.63666		0	27.13	0.98358553	1.449569	4.9992449	
					0					
JOSB					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.9133258	3.6608155	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	22.176783	491.80971	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.9253568	3.7069988	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.9016217	3.6161651	4.09	33.1395427	6.100733	3.1888952	
1999	0.028144822	0.573093	0.0816862	1.8679556	3.489258	5.22	18.3776358	6.299982	3.3015577	
2000	-0.63110214	0.707206	0.1161594	1.7989912	3.2363694	7.11	15.4063485	6.327983	3.0917044	
2001	0.490755785	1.984676	1.1766579	1.6721805	2.7961877	7.47	14.2639374	6.346684	3.2282442	
2002	0.021515681	1.554475	0.274743	1.48152	2.1949015	7.21	13.1114045	6.391287	3.3821231	
2003	-0.021062507	2.346573	0.1788688	1.3643868	1.8615513	10.44	13.3391396	6.736821	2.05732	
2004	0.021515681	2.965995	31.859512	1.4213023	2.0201003	12.49	14.1402717	7.13008	2.0702113	
2005	-0.282084299	2.955306	50.614749	1.5446195	2.3858495	17.88	14.9477281	7.561522	2.2131486	
2006	0.277412412	2.614756	-3.8673408	1.7004861	2.8916531	17.51	15.5291734	7.793462	2.3185186	
2007	-0.062281863	6.316682	-2.8591688	1.8093797	3.2738551	19.27	15.6979531	8.38691	2.2805526	
2008	-1	13.51602	-4.2564547	1.4024767	1.9669408	22.84	10.2350802	8.685141	1.9309764	
2009	#DIV/0!	#DIV/0!	#DIV/0!	0.6924426	0.4794767	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	0.4361043	0.190187	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.1327949	0.0176345	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
BUILDING					0					
NROPES					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.7372378	3.0179951	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.7648494	3.1146932	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.794686	3.2208979	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.8491802	3.4194673	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	1.9091422	3.644824	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	1.9705	3.8828703	7.11	15.4063485	6.327983	3.0917044	
2001	0.450745024	-0.25171	0.3321663	2.0408447	4.1650471	7.47	14.2639374	6.346684	3.2282442	
2002	1.218404344	-0.23729	0.1408337	2.1255528	4.5179745	7.21	13.1114045	6.391287	3.3821231	
2003	0.068373135	1.128644	0.169654	2.2263242	4.9565196	10.44	13.3391396	6.736821	2.05732	
2004	-0.100823681	1.33944	0.0870047	2.3376379	5.4645511	12.49	14.1402717	7.13008	2.0702113	
2005	0.018839818	1.124763	0.0959651	2.3987562	5.7540314	17.88	14.9477281	7.561522	2.2131486	
2006	-0.207243088	1.873357	0.1505382	2.3960691	5.7411472	17.51	15.5291734	7.793462	2.3185186	
2007	0.229549513	3.228923	0.183708	2.4617133	6.0600325	19.27	15.6979531	8.38691	2.2805526	
2008	-0.097487308	4.248804	0.2017281	2.6884417	7.2277187	22.84	10.2350802	8.685141	1.9309764	
2009	-0.174288744	2.439002	-0.9658116	2.9885957	8.9317045	18.80	4.71849407	9.965353	0.6418982	
2010	-1	3.062323	-0.0161484	2.6310592	6.9224723	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.1519059	0.0230754	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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NWIR					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	3.0921138	9.5611677	4.84	49.1133121	15.71362	2.9413027	
1996	0.007263682	0.888045	0.0482587	3.1840802	10.138367	5.10	45.7353322	7.145999	3.0144953	
1997	0.491850242	1.083584	0.0686061	3.2901148	10.824856	5.52	40.814013	5.965291	3.0951766	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
1998	-0.131869951	0.573878	0.1031651	3.4119702	11.64154	4.09	33.1395427	6.100733	3.1888952	
1999	-0.027802143	0.66105	-0.6395256	3.4599761	11.971434	5.22	18.3776358	6.299982	3.3015577	
2000	-0.211517339	0.750235	0.1526361	3.5250677	12.426102	7.11	15.4063485	6.327983	3.0917044	
2001	0.007263682	0.951493	0.0482587	3.6637084	13.42276	7.47	14.2639374	6.346684	3.2282442	
2002	0.491850242	0.898229	0.0686061	3.8144423	14.54997	7.21	13.1114045	6.391287	3.3821231	
2003	-0.131869951	0.561284	0.1031651	3.9615186	15.693629	10.44	13.3391396	6.736821	2.05732	
2004	-0.027802143	0.640708	-0.6395256	4.1001906	16.811563	12.49	14.1402717	7.13008	2.0702113	
2005	12.26482818	0.65903	0.1526361	4.2083272	17.710018	17.88	14.9477281	7.561522	2.2131486	
2006	0.165135281	0.049683	-0.0560969	4.2055542	17.686686	17.51	15.5291734	7.793462	2.3185186	
2007	-0.032460462	0.122859	-0.0367246	4.0512247	16.412421	19.27	15.6979531	8.38691	2.2805526	
2008	0.054719595	0.198561	0.0072718	3.7464581	14.035949	22.84	10.2350802	8.685141	1.9309764	
2009	-1	0.204617	-0.0040019	3.4102442	11.629766	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	2.7798929	7.7278045	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	2.373E-15	5.632E-30	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
WAPC					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	16.411655	269.34242	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	16.694711	278.71336	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	16.070728	258.26829	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	15.34377	235.43129	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	15.832974	250.68306	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	16.526833	273.13621	7.11	15.4063485	6.327983	3.0917044	
2001	0.596098095	0.449158	0.0614472	17.305512	299.48076	7.47	14.2639374	6.346684	3.2282442	
2002	0.221837455	0.165253	-0.0538798	18.194337	331.03389	7.21	13.1114045	6.391287	3.3821231	
2003	0.002116536	0.050072	-0.1011943	19.032472	362.235	10.44	13.3391396	6.736821	2.05732	
2004	-0.016670582	-0.20859	-0.1081741	20.017291	400.69195	12.49	14.1402717	7.13008	2.0702113	
2005	0.046706338	0.253274	0.0893733	20.38915	415.71745	17.88	14.9477281	7.561522	2.2131486	
2006	0.030744688	1.853986	0.3382515	20.99121	440.63091	17.51	15.5291734	7.793462	2.3185186	
2007	0.292751052	3.033856	0.3201412	20.150816	406.05539	19.27	15.6979531	8.38691	2.2805526	
2008	0.615933289	0.498825	0.2609403	14.838749	220.18848	22.84	10.2350802	8.685141	1.9309764	
2009	0.445904043	0.777122	0.0725508	7.1779187	51.522516	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.572448	0.0484494	3.0100525	9.0604162	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	2.8529618	8.139391	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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ASHAKA					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	13.69239	187.48155	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	13.911835	193.53915	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	14.303348	204.58577	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	14.52502	210.9762	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	14.471561	209.42607	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	14.208926	201.89356	7.11	15.4063485	6.327983	3.0917044	
2001	0.014819184	2.603228	1.2240011	13.871159	192.40904	7.47	14.2639374	6.346684	3.2282442	
2002	0.222133023	5.618157	0.9919525	14.369518	206.48306	7.21	13.1114045	6.391287	3.3821231	
2003	0.332514544	3.56222	1.1320355	14.688398	215.74904	10.44	13.3391396	6.736821	2.05732	
2004	0.631344744	3.740022	1.3527132	15.178168	230.37677	12.49	14.1402717	7.13008	2.0702113	
2005	0.966809304	4.873884	1.0865506	16.16438	261.28719	17.88	14.9477281	7.561522	2.2131486	

	I/K?	Q?	CF/K?	UM?	UM²?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2006	0.584066795	3.884424	0.4211999	17.492217	305.97766	17.51	15.5291734	7.793462	2.3185186	
2007	0.305854028	4.057926	0.1262347	15.045527	226.36787	19.27	15.6979531	8.38691	2.2805526	
2008	0.14944666	1.969198	0.1247978	7.8746306	62.009807	22.84	10.2350802	8.685141	1.9309764	
2009	-0.019144304	0.585129	0.049492	5.2524204	27.58792	18.80	4.71849407	9.965353	0.6418982	
2010	-1	1.069758	0.1606695	4.4185346	19.523448	24.68	4.69121759	4.233454	0.7663115	
2011	-0.0472	3.5552	0.4192	3.2166408	10.346778	29.35	0.55154329	1.979899	0.9687363	
2012	-0.0531	3.9996	0.4716			27.13	0.98358553	1.449569	4.9992449	
BENUE										
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.43136	5.9115114	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	4.54572	20.66357	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	5.4069323	29.234917	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	4.2428	18.001352	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.5680237	6.5947458	5.22	18.3776358	6.299982	3.3015577	
2000	-0.055046935	-0.04195	-0.3158167	4.440241	19.71574	7.11	15.4063485	6.327983	3.0917044	
2001	-0.052110698	0.16429	-0.6704625	4.7608765	22.665945	7.47	14.2639374	6.346684	3.2282442	
2002	0.007166737	0.390486	-0.2393495	4.7899197	22.943331	7.21	13.1114045	6.391287	3.3821231	
2003	4.832453377	0.385978	-0.2984111	4.7685484	22.739054	10.44	13.3391396	6.736821	2.05732	
2004	0	0.023709	0.1258233	4.8509091	23.531319	12.49	14.1402717	7.13008	2.0702113	
2005	6.318505168	0.082643	0.1258233	5.9549798	35.461784	17.88	14.9477281	7.561522	2.2131486	
2006	0.039098196	-0.52742	0.0890456	16.748595	280.51544	17.51	15.5291734	7.793462	2.3185186	
2007	0.049894872	-0.22729	0.132428	52.128434	2717.3736	19.27	15.6979531	8.38691	2.2805526	
2008	0.309047753	-0.19333	0.3318479	44.18476	1952.293	22.84	10.2350802	8.685141	1.9309764	
2009	0.531401137	-0.19501	0.3293692	26.541901	704.47253	18.80	4.71849407	9.965353	0.6418982	
2010	-1	1.313672	0.3734736	61.095941	3732.714	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!			0	27.13	0.98358553	1.449569	4.9992449
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CCN										
1995	#DIV/0!	#DIV/0!	#DIV/0!	5.83718	34.072671	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	5.9427448	35.316216	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	6.0440787	36.530887	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	6.1210514	37.46727	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	6.1678974	38.042958	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	6.1351682	37.640289	7.11	15.4063485	6.327983	3.0917044	
2001	0.158063767	0.778653	-1.1709613	6.0571703	36.689312	7.47	14.2639374	6.346684	3.2282442	
2002	0.951979892	1.709235	-0.5348668	6.0838009	37.012633	7.21	13.1114045	6.391287	3.3821231	
2003	0.041546284	1.007524	-0.0522352	6.1814134	38.209871	10.44	13.3391396	6.736821	2.05732	
2004	-0.009392872	1.235601	0.3828249	6.1860678	38.267434	12.49	14.1402717	7.13008	2.0702113	
2005	0.286417699	1.797049	0.1047961	6.2037499	38.486513	17.88	14.9477281	7.561522	2.2131486	
2006	0.45895751	2.122345	-0.0126963	6.1897991	38.313613	17.51	15.5291734	7.793462	2.3185186	
2007	0.158822747	4.027168	0.0345215	5.8216163	33.891216	19.27	15.6979531	8.38691	2.2805526	
2008	0.06354921	1.91233	0.3288132	4.6809845	21.911616	22.84	10.2350802	8.685141	1.9309764	
2009	0.09361288	0.879432	0.3660847	4.6219002	21.361962	18.80	4.71849407	9.965353	0.6418982	
2010	-1	1.814835	0.2344019	3.8461815	14.793112	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	1.6689386	2.785356	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!			0	27.13	0.98358553	1.449569	4.9992449

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
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1995	#DIV/0!	#DIV/0!	#DIV/0!	1.2518471	1.5671211	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.2554044	1.5760402	5.10	45.7353322	7.145999	3.0144953	
1997	-1	66584.86	0	1.2917674	1.6686631	5.52	40.814013	5.965291	3.0951766	
1998	0.077267134	27604.2	-0.411129	1.3269191	1.7607144	4.09	33.1395427	6.100733	3.1888952	
1999	-0.57303946	23263.83	0.0126874	1.3549439	1.8358729	5.22	18.3776358	6.299982	3.3015577	
2000	0.044571646	20408.43	-0.4676381	1.3756585	1.8924364	7.11	15.4063485	6.327983	3.0917044	
2001	0.032410031	42016.93	-0.2925329	1.400909	1.9625459	7.47	14.2639374	6.346684	3.2282442	
2002	#DIV/0!	#DIV/0!	#DIV/0!	1.4423066	2.0802482	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	1.466291	2.1500093	10.44	13.3391396	6.736821	2.05732	
2004	#DIV/0!	#DIV/0!	#DIV/0!	1.4525646	2.1099438	12.49	14.1402717	7.13008	2.0702113	
2005	-1	30938.27	-0.2193901	1.3676248	1.8703976	17.88	14.9477281	7.561522	2.2131486	
2006	0.053035924	25629.29	-0.0769602	1.1571626	1.3390253	17.51	15.5291734	7.793462	2.3185186	
2007	0.048876903	26822.28	-0.0594617	0.6036158	0.364352	19.27	15.6979531	8.38691	2.2805526	
2008	-0.246999528	226850	-0.1684734	0.1540002	0.023716	22.84	10.2350802	8.685141	1.9309764	
2009	0.018532195	453700	-0.087794	0.1547831	0.0239578	18.80	4.71849407	9.965353	0.6418982	
2010	0.033873639	441531.6	-0.0413022	0.1245455	0.0155116	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.102192	0.0104432	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
BPANT					0					
1995	#REF!	#DIV/0!	#DIV/0!	3.139715	9.8578102	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	3.2069261	10.284375	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	3.3166501	11.000168	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	3.418973	11.689377	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	3.5390329	12.524754	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	3.6703574	13.471524	7.11	15.4063485	6.327983	3.0917044	
2001	-1	309277.4	0.4153946	3.7703918	14.215854	7.47	14.2639374	6.346684	3.2282442	
2002	-0.149044718	268126.5	0.3430751	3.826478	14.641934	7.21	13.1114045	6.391287	3.3821231	
2003	0.063373137	296212.1	0.4607234	3.833106	14.692702	10.44	13.3391396	6.736821	2.05732	
2004	-0.157376838	456008.9	0.3632065	3.8933404	15.158099	12.49	14.1402717	7.13008	2.0702113	
2005	-0.781403619	449819.8	-0.3996428	4.019728	16.158214	17.88	14.9477281	7.561522	2.2131486	
2006	0.02229251	368295	0.0652877	3.9286955	15.434648	17.51	15.5291734	7.793462	2.3185186	
2007	-0.030214143	616447.8	0.0872999	3.6825084	13.560868	19.27	15.6979531	8.38691	2.2805526	
2008	0.180251032	1477120	0.1360831	2.7949135	7.8115416	22.84	10.2350802	8.685141	1.9309764	
2009	0.030302716	680476.6	0.1821877	2.361346	5.5759548	18.80	4.71849407	9.965353	0.6418982	
2010	0.007811795	711880.2	0.4203369	1.5810342	2.4996691	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.7452604	0.5554131	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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CAPL					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	15.808479	249.90801	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	16.255728	264.24869	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	16.703487	279.00649	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	17.085603	291.91783	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	17.455551	304.69625	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	17.706222	313.51032	7.11	15.4063485	6.327983	3.0917044	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2009	0.119462405	835115.4	-0.0203085	0.5589875	0.312467	18.80	4.71849407	9.965353	0.6418982	
2010	0.222888768	287574.9	-0.3339414	0.0603792	0.0036456	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.0140243	0.0001967	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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NGERC					0					
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1996	#DIV/0!	#DIV/0!	#DIV/0!	6.0091568	36.109965	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	6.221134	38.702509	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	6.4637185	41.779656	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	6.734836	45.358016	5.22	18.3776358	6.299982	3.3015577	
2000	-1	280712.5	0.0035137	6.9903156	48.864512	7.11	15.4063485	6.327983	3.0917044	
2001	0.078870162	328927.4	0.0086162	7.2217092	52.153084	7.47	14.2639374	6.346684	3.2282442	
2002	-0.09320162	158640.4	0.0140301	7.3370716	53.83262	7.21	13.1114045	6.391287	3.3821231	
2003	0.019803765	150313.4	0.0274807	7.2554424	52.641445	10.44	13.3391396	6.736821	2.05732	
2004	-0.217872938	261408.8	0.0681267	7.1052375	50.4844	12.49	14.1402717	7.13008	2.0702113	
2005	-0.018441427	309779.1	0.1663058	6.786262	46.053352	17.88	14.9477281	7.561522	2.2131486	
2006	0.048734081	391620.2	0.2145869	6.0015291	36.018351	17.51	15.5291734	7.793462	2.3185186	
2007	0.052249718	931534.8	0.2078073	5.3177587	28.278557	19.27	15.6979531	8.38691	2.2805526	
2008	-0.587707633	1758149	0.0111822	3.9356051	15.488988	22.84	10.2350802	8.685141	1.9309764	
2009	#DIV/0!	#DIV/0!	#DIV/0!	2.6391933	6.9653411	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	1.5838412	2.508553	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.5258872	0.2765573	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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1996	#DIV/0!	#DIV/0!	#DIV/0!	5.4795074	30.025002	5.10	45.7353322	7.145999	3.0144953	
1997	-1	28583.67	-0.5449643	5.6262181	31.65433	5.52	40.814013	5.965291	3.0951766	
1998	0.095352959	28135	0.2387516	5.7782315	33.387959	4.09	33.1395427	6.100733	3.1888952	
1999	0.221233618	29372.53	0.4949501	5.9353764	35.228693	5.22	18.3776358	6.299982	3.3015577	
2000	-0.019395154	27137.3	0.2725343	6.0978955	37.18433	7.11	15.4063485	6.327983	3.0917044	
2001	-0.289329256	26634.71	0.3173991	6.252931	39.099146	7.47	14.2639374	6.346684	3.2282442	
2002	#DIV/0!	#DIV/0!	#DIV/0!	6.4082362	41.065491	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	6.5458526	42.848187	10.44	13.3391396	6.736821	2.05732	
2004	#DIV/0!	#DIV/0!	#DIV/0!	6.6152104	43.761009	12.49	14.1402717	7.13008	2.0702113	
2005	-1	20937.5	0.0446332	6.4452387	41.541102	17.88	14.9477281	7.561522	2.2131486	
2006	-0.114250157	20937.5	-0.1507408	5.6186793	31.569557	17.51	15.5291734	7.793462	2.3185186	
2007	-0.018885581	21344.13	0.0990624	4.0639836	16.515962	19.27	15.6979531	8.38691	2.2805526	
2008	-0.327039687	426816	0.0145865	2.0399814	4.1615241	22.84	10.2350802	8.685141	1.9309764	
2009	0.106026031	556489.4	-0.1191607	1.3224226	1.7488016	18.80	4.71849407	9.965353	0.6418982	
2010	0.059539624	502499.9	-0.6120682	1.1211741	1.2570314	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.0553778	0.0030667	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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TRNAT					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.4416279	5.9615466	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.4876488	6.1883968	5.10	45.7353322	7.145999	3.0144953	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2001	-1	135630.7	5.6172168	17.792717	316.58078	7.47	14.2639374	6.346684	3.2282442	
2002	-0.442019003	270635.2	1.1020616	17.805794	317.04631	7.21	13.1114045	6.391287	3.3821231	
2003	-0.127865227	300442.3	1.0360688	17.59319	309.52035	10.44	13.3391396	6.736821	2.05732	
2004	-0.175806061	677582	0.9083416	17.09322	292.17817	12.49	14.1402717	7.13008	2.0702113	
2005	0.102867815	772111.3	1.2506887	15.962197	254.79172	17.88	14.9477281	7.561522	2.2131486	
2006	-0.064863328	1603189	1.8146414	13.649643	186.31275	17.51	15.5291734	7.793462	2.3185186	
2007	0.190537703	3516905	2.4282833	13.124031	172.24019	19.27	15.6979531	8.38691	2.2805526	
2008	-0.389114418	5835144	3.1043152	9.1052214	82.905056	22.84	10.2350802	8.685141	1.9309764	
2009	-0.033366782	3762527	1.3908849	5.5248297	30.523743	18.80	4.71849407	9.965353	0.6418982	
2010	-0.010977307	4302013	3.5616984	6.4883458	42.098632	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	5.1393414	26.41283	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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DNMEY					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	3.3588601	11.281941	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	3.3811732	11.432332	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	3.4825903	12.128435	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	3.5766181	12.792197	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	3.628393	13.165236	5.22	18.3776358	6.299982	3.3015577	
2000	-1	121807.5	0.3030883	3.6544449	13.354967	7.11	15.4063485	6.327983	3.0917044	
2001	-0.02681807	738954	0.4651604	3.5898401	12.886952	7.47	14.2639374	6.346684	3.2282442	
2002	-0.430973182	558878.5	0.2764118	3.4869538	12.158847	7.21	13.1114045	6.391287	3.3821231	
2003	-0.016044306	437088	0.2411556	3.6481288	13.308844	10.44	13.3391396	6.736821	2.05732	
2004	0.008292532	587194.8	0.228172	3.8796908	15.052001	12.49	14.1402717	7.13008	2.0702113	
2005	0.093405456	538365.8	-0.8310566	4.1871819	17.532492	17.88	14.9477281	7.561522	2.2131486	
2006	-0.03711823	418498.8	0.2328388	4.4750939	20.026465	17.51	15.5291734	7.793462	2.3185186	
2007	-0.659092631	849588	0.0833288	4.6657665	21.769377	19.27	15.6979531	8.38691	2.2805526	
2008	-0.631278005	1867110	-0.1427993	3.9469046	15.578056	22.84	10.2350802	8.685141	1.9309764	
2009	0.036971113	1596357	-0.3132601	2.3322642	5.4394562	18.80	4.71849407	9.965353	0.6418982	
2010	0.048655909	730842.1	-0.123829	1.3633976	1.8588529	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.2806063	0.0787399	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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1996	#DIV/0!	#DIV/0!	#DIV/0!	1.4658151	2.1486139	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.5182458	2.3050703	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.5786099	2.4920094	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	1.6449433	2.7058384	5.22	18.3776358	6.299982	3.3015577	
2000	-1	50465.22	-0.7505103	1.7196465	2.9571841	7.11	15.4063485	6.327983	3.0917044	
2001	-0.652179635	50453.81	-0.2493271	1.8057904	3.2608788	7.47	14.2639374	6.346684	3.2282442	
2002	0.128351653	50475.6	-0.2417604	1.9066976	3.6354958	7.21	13.1114045	6.391287	3.3821231	
2003	0.070760665	177566.6	-0.1733585	2.0257494	4.1036606	10.44	13.3391396	6.736821	2.05732	
2004	0.079667267	139423.1	-0.0842665	2.1623675	4.6758334	12.49	14.1402717	7.13008	2.0702113	
2005	0.067270742	84090.03	-0.0880874	2.2801044	5.1988762	17.88	14.9477281	7.561522	2.2131486	
2006	0.545409586	57139.21	-0.2001643	2.369527	5.614658	17.51	15.5291734	7.793462	2.3185186	
2007	0.031093729	181236.4	0.2817723	2.3930581	5.7267269	19.27	15.6979531	8.38691	2.2805526	
2008	-0.005996689	1580384	0.0879269	1.713205	2.9350712	22.84	10.2350802	8.685141	1.9309764	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
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1998	#DIV/0!	#DIV/0!	#DIV/0!	2.6259999	6.8958755	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.7133252	7.3621337	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	2.8080455	7.8851194	7.11	15.4063485	6.327983	3.0917044	
2001	-1	49703.87	0.1791672	2.8983933	8.4006837	7.47	14.2639374	6.346684	3.2282442	
2002	0.042669647	47209.09	-0.1670679	2.9765234	8.8596915	7.21	13.1114045	6.391287	3.3821231	
2003	0.061798266	46542.53	-0.2771337	3.0399503	9.2412981	10.44	13.3391396	6.736821	2.05732	
2004	-0.249057466	46391.1	0.1755741	3.0704496	9.4276605	12.49	14.1402717	7.13008	2.0702113	
2005	-0.041229435	44226.9	0.4778846	3.0092681	9.0556946	17.88	14.9477281	7.561522	2.2131486	
2006	-0.131558921	52166.71	0.5437198	2.656025	7.0544689	17.51	15.5291734	7.793462	2.3185186	
2007	-0.065365056	42502.55	0.8127956	1.866624	3.4842853	19.27	15.6979531	8.38691	2.2805526	
2008	-0.291579014	528073.9	0.5982994	1.296323	1.6804534	22.84	10.2350802	8.685141	1.9309764	
2009	-0.69375434	488352.7	0.2150413	1.1307218	1.2785318	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	1.1870815	1.4091626	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.6595256	0.434974	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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1996	#DIV/0!	#DIV/0!	#DIV/0!	3.064444	9.3908173	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.9056643	8.4428851	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.6004316	6.7622445	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.5372674	6.437726	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	2.650561	7.0254735	7.11	15.4063485	6.327983	3.0917044	
2001	-1	118978.6	0.2858351	2.7733852	7.6916654	7.47	14.2639374	6.346684	3.2282442	
2002	0.090696626	78798.8	1.089036	2.89229	8.3653415	7.21	13.1114045	6.391287	3.3821231	
2003	0.111166796	44182.02	0.8674883	2.9477294	8.6891084	10.44	13.3391396	6.736821	2.05732	
2004	-0.079899392	84713.83	0.5757493	2.9668174	8.8020057	12.49	14.1402717	7.13008	2.0702113	
2005	0.235818267	51188.5	0.8096928	2.9455121	8.6760417	17.88	14.9477281	7.561522	2.2131486	
2006	0.740577096	125075.5	-28.091704	2.7639709	7.6395352	17.51	15.5291734	7.793462	2.3185186	
2007	-0.31335521	192818.9	-0.9850783	2.7491186	7.557653	19.27	15.6979531	8.38691	2.2805526	
2008	-0.286175197	120628.1	1.7730929	2.4355699	5.9320008	22.84	10.2350802	8.685141	1.9309764	
2009	0.177027519	518197.9	24.576367	1.5912703	2.5321413	18.80	4.71849407	9.965353	0.6418982	
2010	-0.248808128	410513.7	14.098984	1.4287116	2.0412168	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	1.6201195	2.6247871	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
TWYAT					0					
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1996	#DIV/0!	#DIV/0!	#DIV/0!	1.467454	2.1534211	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	0.823147	0.677571	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	0.6387716	0.4080291	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	0.5227982	0.2733179	5.22	18.3776358	6.299982	3.3015577	
2000	-1	36429.98	-0.3511103	0.5148842	0.2651057	7.11	15.4063485	6.327983	3.0917044	
2001	0.361540133	26214.24	-0.5123555	0.5404764	0.2921148	7.47	14.2639374	6.346684	3.2282442	
2002	0.034927948	21324	-0.2234548	0.5673884	0.3219296	7.21	13.1114045	6.391287	3.3821231	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2003	0.034501165	19107.94	-0.2135687	0.5928454	0.3514657	10.44	13.3391396	6.736821	2.05732	
2004	0.035476421	14783.11	-0.4572297	0.6092192	0.3711481	12.49	14.1402717	7.13008	2.0702113	
2005	-0.002213845	13605.61	-0.4562175	0.6009746	0.3611705	17.88	14.9477281	7.561522	2.2131486	
2006	-0.334465031	21648.33	0.0049104	0.5509572	0.3035538	17.51	15.5291734	7.793462	2.3185186	
2007	0.007355116	54061.86	0.000721	0.5190374	0.2693998	19.27	15.6979531	8.38691	2.2805526	
2008	-0.05828867	74957.59	0.0050313	0.4939927	0.2440288	22.84	10.2350802	8.685141	1.9309764	
2009	-0.034264359	246546.5	0.0023466	0.2476329	0.061322	18.80	4.71849407	9.965353	0.6418982	
2010	0.022204381	166598.1	-0.0135696	0.0320536	0.0010274	24.68	4.69121759	4.233454	0.7663115	
2011	0.022372325	151799.3	-0.0756537	1.902E-15	3.616E-30	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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TGEE					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.1471802	4.6103829	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.1121561	4.4612033	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.0493002	4.1996313	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.0332532	4.1341187	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.0951797	4.3897778	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	2.1858485	4.7779338	7.11	15.4063485	6.327983	3.0917044	
2001	-1	164105	0.0504863	2.2926513	5.2562502	7.47	14.2639374	6.346684	3.2282442	
2002	-0.238666621	101079.8	0.027055	2.3950824	5.7364199	7.21	13.1114045	6.391287	3.3821231	
2003	-0.07756577	72551.71	0.0088884	2.475938	6.1302687	10.44	13.3391396	6.736821	2.05732	
2004	-0.183544952	97190.1	0.0255423	2.5454403	6.4792661	12.49	14.1402717	7.13008	2.0702113	
2005	0.012128112	114290.5	0.0379131	2.6266448	6.8992627	17.88	14.9477281	7.561522	2.2131486	
2006	0.020514402	190353.7	0.0183889	2.4235815	5.8737471	17.51	15.5291734	7.793462	2.3185186	
2007	0.0116897	784772.5	0.0468388	2.0679846	4.2765603	19.27	15.6979531	8.38691	2.2805526	
2008	0.163550385	211577.2	0.1061064	1.9437269	3.7780744	22.84	10.2350802	8.685141	1.9309764	
2009	-0.054746269	1845360	0.1417169	1.1583848	1.3418554	18.80	4.71849407	9.965353	0.6418982	
2010	0.101912758	1028473	-0.0554241	0.3221368	0.1037721	24.68	4.69121759	4.233454	0.7663115	
2011	-0.009603105	822082	-0.0531344	0.1166096	0.0135978	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
CONGLOMERATES					0					
AGLEV					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	3.8057023	14.48337	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	3.9024479	15.2291	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	4.0219904	16.176407	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	4.1309173	17.064478	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	4.2200385	17.808725	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	4.2838658	18.351506	7.11	15.4063485	6.327983	3.0917044	
2001	0.019561786	510725.2	0.0195618	4.4120587	19.466262	7.47	14.2639374	6.346684	3.2282442	
2002	0.031734387	337105.6	0.0317344	4.5920006	21.086469	7.21	13.1114045	6.391287	3.3821231	
2003	0.063745036	350954.1	0.063745	4.779248	22.841212	10.44	13.3391396	6.736821	2.05732	
2004	0.083509801	1180503	0.0835098	4.9971717	24.971725	12.49	14.1402717	7.13008	2.0702113	
2005	0.137497218	1109736	0.1374972	4.9700452	24.701349	17.88	14.9477281	7.561522	2.2131486	
2006	0.161884278	1471050	0.1618843	4.4464415	19.770842	17.51	15.5291734	7.793462	2.3185186	
2007	0.140230945	3627397	0.1402309	3.4656981	12.011063	19.27	15.6979531	8.38691	2.2805526	
2008	0.14439641	13742930	0.1443964	2.4687637	6.0947944	22.84	10.2350802	8.685141	1.9309764	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2009	0.123479796	8006095	0.1234798	1.5088339	2.2765797	18.80	4.71849407	9.965353	0.6418982	
2010	0.066708509	4365939	0.0667085	1.0265735	1.0538532	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.4224242	0.1784422	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
					0					
					0					
JHOLT					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	4.5006664	20.255998	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	4.5630899	20.82179	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	4.3894132	19.266948	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	4.3898118	19.270447	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	4.5109025	20.348241	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	4.7114246	22.197522	7.11	15.4063485	6.327983	3.0917044	
2001	0.064453125	357.2229	0.0644531	4.8855387	23.868488	7.47	14.2639374	6.346684	3.2282442	
2002	0.066489362	293.197	0.0664894	5.0486516	25.488883	7.21	13.1114045	6.391287	3.3821231	
2003	-0.076359833	171.081	-0.0763598	5.1913401	26.950012	10.44	13.3391396	6.736821	2.05732	
2004	0.020126509	195.817	0.0201265	5.2425683	27.484523	12.49	14.1402717	7.13008	2.0702113	
2005	-0.008555784	227.5105	-0.0085558	5.2283745	27.3359	17.88	14.9477281	7.561522	2.2131486	
2006	-0.13541963	230.7366	-0.1354196	5.0657523	25.661846	17.51	15.5291734	7.793462	2.3185186	
2007	0.009275079	476.4813	0.0092751	4.4321703	19.644134	19.27	15.6979531	8.38691	2.2805526	
2008	0.074427481	2675.306	0.0744275	2.9626107	8.7770624	22.84	10.2350802	8.685141	1.9309764	
2009	-0.302269844	2353.403	-0.3022698	2.5221459	6.3612199	18.80	4.71849407	9.965353	0.6418982	
2010	-0.001261193	1808.874	-0.0012612	1.5851964	2.5128477	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
LEVBR					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.694587	7.260799	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.6945483	7.2605907	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.6945483	7.2605907	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.6945483	7.2605907	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.6945483	7.2605907	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	2.6945483	7.2605907	7.11	15.4063485	6.327983	3.0917044	
2001	0.601471081	14393398	0.6014711	2.6945483	7.2605907	7.47	14.2639374	6.346684	3.2282442	
2002	0.349454272	35775347	0.3494543	2.6945483	7.2605907	7.21	13.1114045	6.391287	3.3821231	
2003	0.387790152	23651162	0.3877902	2.6945483	7.2605907	10.44	13.3391396	6.736821	2.05732	
2004	0.350707232	26273910	0.3507072	2.6945483	7.2605907	12.49	14.1402717	7.13008	2.0702113	
2005	0.21143462	25729731	0.2114346	2.6945483	7.2605907	17.88	14.9477281	7.561522	2.2131486	
2006	-0.176824462	30979817	-0.1768245	2.686149	7.2153964	17.51	15.5291734	7.793462	2.3185186	
2007	0.150044827	27145391	0.1500448	1.8770108	3.5231697	19.27	15.6979531	8.38691	2.2805526	
2008	0.286713618	40059602	0.2867136	0.5671664	0.3216778	22.84	10.2350802	8.685141	1.9309764	
2009	0.410398264	18153969	0.4103983	0.2481795	0.0615931	18.80	4.71849407	9.965353	0.6418982	
2010	0.356113312	48044898	0.3561133	0.2799485	0.0783712	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.1654956	0.0273888	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
PZ					0					
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1996	#DIV/0!	#DIV/0!	#DIV/0!	9.1712277	84.111418	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	8.7767647	77.031599	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	8.9283404	79.715261	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	8.9128005	79.438012	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	8.7122678	75.903611	7.11	15.4063485	6.327983	3.0917044	
2001	0.194020688	9150957	0.1940207	8.7179443	76.002553	7.47	14.2639374	6.346684	3.2282442	
2002	0.23694118	7119876	0.2369412	8.7470478	76.510845	7.21	13.1114045	6.391287	3.3821231	
2003	0.241061346	7555127	0.2410613	8.2501588	68.06512	10.44	13.3391396	6.736821	2.05732	
2004	0.279485147	12716809	0.2794851	7.7716653	60.398781	12.49	14.1402717	7.13008	2.0702113	
2005	0.270090123	14993945	0.2700901	7.087375	50.230884	17.88	14.9477281	7.561522	2.2131486	
2006	0.225164197	26649272	0.2251642	6.4771601	41.953603	17.51	15.5291734	7.793462	2.3185186	
2007	0.21460863	32771236	0.2146086	6.8061229	46.323309	19.27	15.6979531	8.38691	2.2805526	
2008	0.217764748	38350429	0.2177647	7.427933	55.174189	22.84	10.2350802	8.685141	1.9309764	
2009	0.223998305	26639220	0.2239983	5.4690422	29.910423	18.80	4.71849407	9.965353	0.6418982	
2010	0.214318368	48714512	0.2143184	3.290778	10.82922	24.68	4.69121759	4.233454	0.7663115	
2011	0.20840991	52477189	0.2084099	3.2038343	10.264554	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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SCOA										
1995	#DIV/0!	#DIV/0!	#DIV/0!	8.5447447	73.012661	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	8.5447447	73.012661	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	8.5447447	73.012661	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	8.5447447	73.012661	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	8.5447447	73.012661	5.22	18.3776358	6.299982	3.3015577	
2000	0.794258373	242.7099	0.7942584	8.5447447	73.012661	7.11	15.4063485	6.327983	3.0917044	
2001	0.686046512	611.4451	0.6860465	8.5447447	73.012661	7.47	14.2639374	6.346684	3.2282442	
2002	0.367491166	614.2826	0.3674912	8.5447447	73.012661	7.21	13.1114045	6.391287	3.3821231	
2003	0.181818182	637.4384	0.1818182	8.5447447	73.012661	10.44	13.3391396	6.736821	2.05732	
2004	-1.252873563	707.352	-1.2528736	8.5817976	73.64725	12.49	14.1402717	7.13008	2.0702113	
2005	#DIV/0!	#DIV/0!	#DIV/0!	8.2354299	67.822305	17.88	14.9477281	7.561522	2.2131486	
2006	1.563192905	209.9205	1.5631929	7.4997085	56.245627	17.51	15.5291734	7.793462	2.3185186	
2007	0.960280374	473.6386	0.9602804	6.3969521	40.920996	19.27	15.6979531	8.38691	2.2805526	
2008	0.263038549	4146.259	0.2630385	3.8017834	14.453557	22.84	10.2350802	8.685141	1.9309764	
2009	0.888059701	3825.96	0.8880597	0.9715202	0.9438516	18.80	4.71849407	9.965353	0.6418982	
2010	0.276983095	2828.842	0.2769831	0.2561292	0.0656022	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!		0	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
UACN										
1995	#DIV/0!	#DIV/0!	#DIV/0!	14.628052	213.97989	4.84	49.1133121	15.71362	2.9413027	
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1997	#DIV/0!	#DIV/0!	#DIV/0!	15.290553	233.80102	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	15.767413	248.61131	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	16.139967	260.49852	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	16.064509	258.06845	7.11	15.4063485	6.327983	3.0917044	
2001	0.149037037	19260.26	0.149037	15.771374	248.73625	7.47	14.2639374	6.346684	3.2282442	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2002	0.128117789	24599.41	0.1281178	15.13512	229.07187	7.21	13.1114045	6.391287	3.3821231	
2003	0.227808491	49351.66	0.2278085	13.931355	194.08264	10.44	13.3391396	6.736821	2.05732	
2004	0.159812704	158327.4	0.1598127	12.18087	148.37358	12.49	14.1402717	7.13008	2.0702113	
2005	0.145032051	193126.9	0.1450321	11.128816	123.85055	17.88	14.9477281	7.561522	2.2131486	
2006	0.252920745	389396.3	0.2529207	8.688276	75.486139	17.51	15.5291734	7.793462	2.3185186	
2007	0.05588961	935757.3	0.0558896	6.0289986	36.348825	19.27	15.6979531	8.38691	2.2805526	
2008	0.060092101	1907257	0.0600921	6.4390819	41.461776	22.84	10.2350802	8.685141	1.9309764	
2009	0.073781025	1193124	0.073781	5.4276341	29.459212	18.80	4.71849407	9.965353	0.6418982	
2010	0.061874661	1552744	0.0618747	4.3379743	18.818021	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
					0					
					0					
					0					
					0					
AGRICULTURE					0					
ELLAH	#DIV/0!	#DIV/0!	#DIV/0!	1.6151094	2.6085784					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.6428711	2.6990255	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.668449	2.7837222	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.7096874	2.9230308	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	3.4819004	12.12363	4.09	33.1395427	6.100733	3.1888952	
1999	0.005139369	47298667	0.0051394	1.7933198	3.215996	5.22	18.3776358	6.299982	3.3015577	
2000	0.000871892	46759196	0.0008719	1.8275986	3.3401167	7.11	15.4063485	6.327983	3.0917044	
2001	0.000970401	46698782	0.0009704	1.8413068	3.3904107	7.47	14.2639374	6.346684	3.2282442	
2002	0.001147947	57298667	0.0011479	1.8492515	3.4197312	7.21	13.1114045	6.391287	3.3821231	
2003	0.001576871	57298667	0.0015769	1.8392318	3.3827735	10.44	13.3391396	6.736821	2.05732	
2004	0.001576871	57298.5	0.0015769	1.7499246	3.062236	12.49	14.1402717	7.13008	2.0702113	
2005	0.000992629	57298.5	0.0009926	1.426035	2.0335757	17.88	14.9477281	7.561522	2.2131486	
2006	-0.00533945	30000000	-0.0053395	0.7402414	0.5479573	17.51	15.5291734	7.793462	2.3185186	
2007	-0.006165811	37521952	-0.0061658	0.0371196	0.0013779	19.27	15.6979531	8.38691	2.2805526	
2008	-0.004323299	2.41E+08	-0.0043233	1.976E-14	3.904E-28	22.84	10.2350802	8.685141	1.9309764	
2009	-0.012856705	2.56E+08	-0.0128567	7.595E-15	5.768E-29	18.80	4.71849407	9.965353	0.6418982	
2010	-0.023983295	2.56E+08	-0.0239833	4.908E-15	2.409E-29	24.68	4.69121759	4.233454	0.7663115	
2011	-0.023983295	2.56E+08	-0.0239833		0	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
OKOMU					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	9.2114231	84.850316	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	8.9030279	79.263906	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	8.9554748	80.200529	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	9.2498749	85.560186	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	4.6960453	22.052842	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	9.6662664	93.436706	7.11	15.4063485	6.327983	3.0917044	
2001	0.097643702	1649625	0.0976437	9.9072831	98.154258	7.47	14.2639374	6.346684	3.2282442	
2002	0.047890009	1309736	0.04789	9.9204923	98.416168	7.21	13.1114045	6.391287	3.3821231	
2003	0.121476793	1161783	0.1214768	9.2581921	85.714122	10.44	13.3391396	6.736821	2.05732	
2004	0.147688182	2341252	0.1476882	8.9463389	80.03698	12.49	14.1402717	7.13008	2.0702113	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2005	0.173535492	2627836	0.1735355	9.0429814	81.775512	17.88	14.9477281	7.561522	2.2131486	
2006	0.077649734	4322973	0.0776497	9.3489453	87.402779	17.51	15.5291734	7.793462	2.3185186	
2007	0.024509556	10103422	0.0245096	8.841617	78.174191	19.27	15.6979531	8.38691	2.2805526	
2008	0.20541434	7633719	0.2054143	6.9619218	48.468356	22.84	10.2350802	8.685141	1.9309764	
2009	0.087871932	6737104	0.0878719	4.6440487	21.567188	18.80	4.71849407	9.965353	0.6418982	
2010	0.253990819	3823044	0.2539908	2.8841624	8.3183927	24.68	4.69121759	4.233454	0.7663115	
2011	0.011619673	4104879	0.0116197	2.1084927	4.4457416	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
LIVST					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.6211478	2.6281202	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.6288553	2.6531697	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.5976807	2.5525837	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.5836532	2.5079574	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	3.9143149	15.321861	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	1.555729	2.4202926	7.11	15.4063485	6.327983	3.0917044	
2001	#DIV/0!	#DIV/0!	#DIV/0!	1.5761088	2.4841189	7.47	14.2639374	6.346684	3.2282442	
2002	#DIV/0!	#DIV/0!	#DIV/0!	1.6208516	2.62716	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	1.6850069	2.8392482	10.44	13.3391396	6.736821	2.05732	
2004	#DIV/0!	#DIV/0!	#DIV/0!	1.7924936	3.2130332	12.49	14.1402717	7.13008	2.0702113	
2005	#DIV/0!	#DIV/0!	#DIV/0!	1.922872	3.6974367	17.88	14.9477281	7.561522	2.2131486	
2006	0.039814988	12454.69	0.039815	2.0885496	4.3620396	17.51	15.5291734	7.793462	2.3185186	
2007	0.133228298	1303301	0.1332283	2.2232143	4.9426818	19.27	15.6979531	8.38691	2.2805526	
2008	0.150107311	3108696	0.1501073	1.2683435	1.6086952	22.84	10.2350802	8.685141	1.9309764	
2009	0.102983807	793225.4	0.1029838	0.2937274	0.0862758	18.80	4.71849407	9.965353	0.6418982	
2010	0.079950737	420097.2	0.0799507	0.0938554	0.0088088	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.0675342	0.0045609	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
					0					
PRES					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	3.9755199	15.804759	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	3.9754842	15.804474	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	3.9754842	15.804474	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	3.9754842	15.804474	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.2790365	5.1940074	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	3.9754842	15.804474	7.11	15.4063485	6.327983	3.0917044	
2001	0.077355203	#DIV/0!	0.0773552	3.9754842	15.804474	7.47	14.2639374	6.346684	3.2282442	
2002	0.048608113	1270312	0.0486081	3.9740722	15.79325	7.21	13.1114045	6.391287	3.3821231	
2003	0.116290271	1589889	0.1162903	3.8952646	15.173086	10.44	13.3391396	6.736821	2.05732	
2004	0.181938587	3020069	0.1819386	3.9528194	15.624781	12.49	14.1402717	7.13008	2.0702113	
2005	0.101840459	2804210	0.1018405	4.2524996	18.083752	17.88	14.9477281	7.561522	2.2131486	
2006	0.059155474	2888925	0.0591555	4.6103211	21.255061	17.51	15.5291734	7.793462	2.3185186	
2007	0.009539414	2718735	0.0095394	4.9123277	24.130963	19.27	15.6979531	8.38691	2.2805526	
2008	0.192897008	7794340	0.192897	3.3287414	11.080519	22.84	10.2350802	8.685141	1.9309764	
2009	0.050365689	3360563	0.0503657	0.9657608	0.932694	18.80	4.71849407	9.965353	0.6418982	
2010	0.185148207	3068582	0.1851482	0.7218829	0.5211149	24.68	4.69121759	4.233454	0.7663115	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.42105	0.1772831	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
					0					
FTN					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	0.5825945	0.3394163	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	0.5825889	0.3394098	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	0.5825889	0.3394098	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	0.5825889	0.3394098	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	0.5825889	0.3394098	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	0.5825889	0.3394098	7.11	15.4063485	6.327983	3.0917044	
2001	#DIV/0!	#DIV/0!	#DIV/0!	0.5825889	0.3394098	7.47	14.2639374	6.346684	3.2282442	
2002	#DIV/0!	#DIV/0!	#DIV/0!	0.5825889	0.3394098	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	0.5825889	0.3394098	10.44	13.3391396	6.736821	2.05732	
2004	#DIV/0!	#DIV/0!	#DIV/0!	0.5825889	0.3394098	12.49	14.1402717	7.13008	2.0702113	
2005	-0.059251814	#DIV/0!	-0.0592518	0.5825889	0.3394098	17.88	14.9477281	7.561522	2.2131486	
2006	0.019198354	#DIV/0!	0.0191984	0.5825889	0.3394098	17.51	15.5291734	7.793462	2.3185186	
2007	0.08719604	#DIV/0!	0.087196	0.5825889	0.3394098	19.27	15.6979531	8.38691	2.2805526	
2008	0.095794656	2464946	0.0957947	0.5146695	0.2648847	22.84	10.2350802	8.685141	1.9309764	
2009	0.133377474	1284754	0.1333775	0.2218135	0.0492012	18.80	4.71849407	9.965353	0.6418982	
2010	0.022209986	874299.4	0.02221	0.1120883	0.0125638	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.0094126	8.86E-05	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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ALUMN						0				
1995	#DIV/0!	#DIV/0!	#DIV/0!	9.488648	90.03444	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	9.826224	96.554677	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	10.00185	100.03701	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	10.00185	100.03701	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	10.178901	103.61003	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	2.009224	-0.3330928	10.571052	111.74714	7.11	15.4063485	6.327983	3.0917044	
2001	0.100052649	1.783651	0.0428761	11.000895	121.0197	7.47	14.2639374	6.346684	3.2282442	
2002	0.073308142	1.738603	-0.1202567	11.481508	131.82503	7.21	13.1114045	6.391287	3.3821231	
2003	0.142908711	1.309302	-0.1787601	12.004206	144.10097	10.44	13.3391396	6.736821	2.05732	
2004	-0.024137662	1.481588	-0.0118273	12.425448	154.39175	12.49	14.1402717	7.13008	2.0702113	
2005	0.100290526	-0.23685	0.0320949	12.805407	163.97845	17.88	14.9477281	7.561522	2.2131486	
2006	0.110452441	-0.02879	0.0716105	12.793988	163.68612	17.51	15.5291734	7.793462	2.3185186	
2007	0.576471798	-0.00741	0.1611179	12.281764	150.84173	19.27	15.6979531	8.38691	2.2805526	
2008	0.057114278	6.216269	0.1412398	11.412424	130.24342	22.84	10.2350802	8.685141	1.9309764	
2009	0.14227824	6.259619	0.1452983	7.8720711	61.969503	18.80	4.71849407	9.965353	0.6418982	
2010	-1	1.760536	0.0987462	0.5503719	0.3029092	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0	0	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
					0					
BOCG					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	5.0562941	25.56611	4.84	49.1133121	15.71362	2.9413027	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
1996	#DIV/0!	#DIV/0!	#DIV/0!	5.2108235	27.152681	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	5.2509437	27.572409	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	5.3318572	28.428701	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	5.5611032	30.925869	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	5.8145941	33.809505	7.11	15.4063485	6.327983	3.0917044	
2001	0.090026789	4.29228	0.2836351	6.1092105	37.322453	7.47	14.2639374	6.346684	3.2282442	
2002	0.261723697	2.183579	0.3645574	6.3880146	40.806731	7.21	13.1114045	6.391287	3.3821231	
2003	1.057429697	1.437453	0.2877874	6.5843269	43.353361	10.44	13.3391396	6.736821	2.05732	
2004	0.126763521	0.738191	0.1405134	6.7403242	45.431971	12.49	14.1402717	7.13008	2.0702113	
2005	0.092192725	0.555585	0.1531851	6.7559716	45.643152	17.88	14.9477281	7.561522	2.2131486	
2006	0.127019058	0.560813	0.1321447	6.3904615	40.837998	17.51	15.5291734	7.793462	2.3185186	
2007	-0.020266987	0.885269	0.2070248	5.7947729	33.579393	19.27	15.6979531	8.38691	2.2805526	
2008	0.027698847	3.624504	0.2049137	5.052618	25.528949	22.84	10.2350802	8.685141	1.9309764	
2009	-0.075422503	2.8577	0.2246181	2.6520561	7.0334014	18.80	4.71849407	9.965353	0.6418982	
2010	-1	2.018241	0.3375884	1.2242195	1.4987133	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.4257767	0.1812858	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
FALUM					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.605198	2.5766606	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.5012063	2.2536203	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.4016325	1.9645737	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.3926414	1.9394499	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	1.4138179	1.998881	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	1.4474292	2.0950513	7.11	15.4063485	6.327983	3.0917044	
2001	-0.018070253	0.428547	-0.1019167	1.4594896	2.1301099	7.47	14.2639374	6.346684	3.2282442	
2002	-0.049920274	0.222613	-0.1421031	1.5384699	2.3668896	7.21	13.1114045	6.391287	3.3821231	
2003	0.252671144	0.467394	0.1308174	1.6361298	2.6769209	10.44	13.3391396	6.736821	2.05732	
2004	0.028226774	0.505785	0.0505653	1.7460203	3.048587	12.49	14.1402717	7.13008	2.0702113	
2005	0.268900513	0.377722	0.0847454	1.8761405	3.5199032	17.88	14.9477281	7.561522	2.2131486	
2006	-0.034426199	0.368594	0.002293	2.008585	4.0344138	17.51	15.5291734	7.793462	2.3185186	
2007	-0.050731938	1.064412	-0.213733	2.1084152	4.4454148	19.27	15.6979531	8.38691	2.2805526	
2008	-1	2.611046	-0.1367888	1.6644452	2.7703779	22.84	10.2350802	8.685141	1.9309764	
2009	#DIV/0!	#DIV/0!	#DIV/0!	0.3964518	0.157174	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	0.1512628	0.0228804	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.0244223	0.0005965	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
NENAMEL					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	22.405212	501.99353	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	22.934112	525.97349	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	23.570525	555.56964	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	24.293021	590.15085	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	25.049059	627.45538	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.970064	0.1505489	25.82039	666.69255	7.11	15.4063485	6.327983	3.0917044	
2001	-0.086455288	0.830563	0.2853759	26.585654	706.79701	7.47	14.2639374	6.346684	3.2282442	
2002	-0.184170797	0.802718	0.262004	27.303843	745.49982	7.21	13.1114045	6.391287	3.3821231	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2003	-0.319802876	0.818323	0.2887056	27.865794	776.50248	10.44	13.3391396	6.736821	2.05732	
2004	-0.432310149	1.211035	0.4722617	28.078478	788.40094	12.49	14.1402717	7.13008	2.0702113	
2005	-0.46267646	2.474719	1.2473824	27.508501	756.71763	17.88	14.9477281	7.561522	2.2131486	
2006	-0.155889481	5.534432	2.0109549	24.82843	616.45093	17.51	15.5291734	7.793462	2.3185186	
2007	-0.055357758	8.098046	2.8183071	20.100478	404.02923	19.27	15.6979531	8.38691	2.2805526	
2008	4.079635258	118.4299	2.405228	13.390958	179.31775	22.84	10.2350802	8.685141	1.9309764	
2009	-0.040689325	21.11145	1.5194112	6.4126568	41.122168	18.80	4.71849407	9.965353	0.6418982	
2010	1.351721557	36.24635	1.8688872	2.3205163	5.3847957	24.68	4.69121759	4.233454	0.7663115	
2011	-1	13.92481	0.9349757	1.9426496	3.7738873	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
VITAF					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.0426136	4.1722705	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.9723973	3.8903509	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.0254183	4.1023195	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.0692422	4.2817633	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.0713921	4.2906652	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	2.0828917	4.338438	7.11	15.4063485	6.327983	3.0917044	
2001	0.243441765	2.014474	0.5656417	2.1485982	4.6164743	7.47	14.2639374	6.346684	3.2282442	
2002	0.037812712	1.588568	0.4568803	2.2455525	5.042506	7.21	13.1114045	6.391287	3.3821231	
2003	-0.046863261	2.398236	0.522791	2.355141	5.5466893	10.44	13.3391396	6.736821	2.05732	
2004	-0.103396871	2.183084	0.4866048	2.4746378	6.1238324	12.49	14.1402717	7.13008	2.0702113	
2005	0.056308686	2.489754	0.2225773	2.5338276	6.4202822	17.88	14.9477281	7.561522	2.2131486	
2006	0.188953582	3.031404	0.5192326	2.6198071	6.863389	17.51	15.5291734	7.793462	2.3185186	
2007	1.131594529	2.958202	0.6973537	2.6632387	7.0928405	19.27	15.6979531	8.38691	2.2805526	
2008	0.229570457	2.845999	0.5200116	1.9517517	3.8093349	22.84	10.2350802	8.685141	1.9309764	
2009	0.025013854	0.741998	0.3104138	1.253441	1.5711144	18.80	4.71849407	9.965353	0.6418982	
2010	0.517879068	1.448662	0.3038065	0.4520744	0.2043712	24.68	4.69121759	4.233454	0.7663115	
2011	-1	0.799035	0.2206923	0.3241509	0.1050738	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
VONO					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.2424907	1.5437833	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.2835854	1.6475916	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.3240167	1.7530202	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.3623357	1.8559586	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	1.4190261	2.0136351	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.281878	0.0918178	1.4866422	2.2101049	7.11	15.4063485	6.327983	3.0917044	
2001	0.090944737	0.245906	0.010224	1.5610624	2.4369159	7.47	14.2639374	6.346684	3.2282442	
2002	-0.085074539	0.242474	0.0808527	1.6434617	2.7009664	7.21	13.1114045	6.391287	3.3821231	
2003	-0.258668809	0.219022	0.1413042	1.7389231	3.0238536	10.44	13.3391396	6.736821	2.05732	
2004	0.620277292	0.345249	-0.0482691	1.8452393	3.404908	12.49	14.1402717	7.13008	2.0702113	
2005	0.091480648	1.409908	-0.2175356	1.9959809	3.9839398	17.88	14.9477281	7.561522	2.2131486	
2006	2.493059158	0.892147	0.0005993	2.1425004	4.5903078	17.51	15.5291734	7.793462	2.3185186	
2007	-0.048964103	0.542149	-0.7017906	2.2510631	5.0672852	19.27	15.6979531	8.38691	2.2805526	
2008	1.425490497	1.129658	-0.1617704	1.5191052	2.3076806	22.84	10.2350802	8.685141	1.9309764	
2009	-0.043001102	0.162546	-0.1407544	1.1268921	1.2698859	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.067326	-0.2302336	0.9358376	0.8757921	24.68	4.69121759	4.233454	0.7663115	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.0795663	0.0063308	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
MACHINERY (MARKETING)					0					
STOKV					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	0.0060543	3.666E-05	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	0.0062605	3.919E-05	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	0.0064916	4.214E-05	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	0.0067505	4.557E-05	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	0.0070442	4.962E-05	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.107846	-0.6985216	0.0073807	5.447E-05	7.11	15.4063485	6.327983	3.0917044	
2001	2.610518834	0.145174	-1.6204691	0.0077656	6.03E-05	7.47	14.2639374	6.346684	3.2282442	
2002	0.253937008	0.040209	6.3728346	0.0082198	6.756E-05	7.21	13.1114045	6.391287	3.3821231	
2003	2.548037677	0.032066	0.2139717	0.0087608	7.675E-05	10.44	13.3391396	6.736821	2.05732	
2004	0.011857882	0.009038	0.0267245	0.0094315	8.895E-05	12.49	14.1402717	7.13008	2.0702113	
2005	-0.011718921	0.009211	-0.2112467	0.0102072	0.0001042	17.88	14.9477281	7.561522	2.2131486	
2006	-0.023627273	0.009038	0.0267245	0.0110103	0.0001212	17.51	15.5291734	7.793462	2.3185186	
2007	30.54334527	0.009256	-0.032356	0.011937	0.0001425	19.27	15.6979531	8.38691	2.2805526	
2008	-0.001787184	0.000293	-0.0327727	0.0132499	0.0001756	22.84	10.2350802	8.685141	1.9309764	
2009	-1	0.000294	-0.0715808	0.015418	0.0002377	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	0.0112827	0.0001273	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	2.042E-16	4.168E-32	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
PACKAGING					0					
					0					
AVON					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	3.0374903	9.2263474	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	3.124588	9.7630502	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	3.2320829	10.44636	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	3.3543542	11.251692	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	3.4729525	12.061399	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	3.5803927	12.819212	7.11	15.4063485	6.327983	3.0917044	
2001	0.171127039	0.756511	0.0777873	3.7148122	13.79983	7.47	14.2639374	6.346684	3.2282442	
2002	0.392997422	0.299239	0.0897891	3.7927553	14.384993	7.21	13.1114045	6.391287	3.3821231	
2003	0.032348125	0.205135	0.0494586	3.8046781	14.475575	10.44	13.3391396	6.736821	2.05732	
2004	0.126889506	0.365192	0.0730386	3.7839612	14.318363	12.49	14.1402717	7.13008	2.0702113	
2005	0.204681188	0.284828	0.1025807	3.6404775	13.253076	17.88	14.9477281	7.561522	2.2131486	
2006	0.146437712	0.252801	0.0471344	3.0605615	9.3670366	17.51	15.5291734	7.793462	2.3185186	
2007	-0.048314744	0.554341	0.1245294	2.1153649	4.4747689	19.27	15.6979531	8.38691	2.2805526	
2008	-0.142775394	2.636587	0.1903263	1.3501585	1.8229281	22.84	10.2350802	8.685141	1.9309764	
2009	0.098887438	2.712349	0.2091507	0.7581477	0.5747879	18.80	4.71849407	9.965353	0.6418982	
2010	-0.13939432	2.047054	0.066782	0.4114523	0.169293	24.68	4.69121759	4.233454	0.7663115	
2011	-1	2.10081	0.0982264	0.2310637	0.0533904	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
DELTA					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	5.3953034	29.109299	4.84	49.1133121	15.71362	2.9413027	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
1996	#DIV/0!	#DIV/0!	#DIV/0!	5.5483641	30.784344	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	5.7276457	32.805925	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	5.9527625	35.435382	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	6.1751631	38.132639	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	6.3697118	40.573228	7.11	15.4063485	6.327983	3.0917044	
2001	0.111581143	0.361467	0.2291072	6.5770374	43.257421	7.47	14.2639374	6.346684	3.2282442	
2002	0.290013624	0.284685	0.1706388	6.7414789	45.447537	7.21	13.1114045	6.391287	3.3821231	
2003	0.043083257	0.203104	0.1003385	6.7892273	46.093607	10.44	13.3391396	6.736821	2.05732	
2004	0.017125645	0.236475	0.0288713	6.8454546	46.860249	12.49	14.1402717	7.13008	2.0702113	
2005	0.076476947	0.208632	0.0381713	6.5338621	42.691354	17.88	14.9477281	7.561522	2.2131486	
2006	0.432908541	0.208936	0.0618016	5.8255569	33.937113	17.51	15.5291734	7.793462	2.3185186	
2007	-0.007205149	0.223297	0.0980393	4.4651493	19.937558	19.27	15.6979531	8.38691	2.2805526	
2008	-0.093269332	0.650347	0.135964	3.6108756	13.038423	22.84	10.2350802	8.685141	1.9309764	
2009	0.100248141	0.659133	0.1740995	2.3275089	5.4172976	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.432382	0.1682543	1.2302171	1.513434	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.2737261	0.074926	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
GRIEF					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.8214789	7.9607433	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.8214789	7.9607433	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.8214789	7.9607433	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.8214789	7.9607433	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.8214789	7.9607433	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	2.8214789	7.9607433	7.11	15.4063485	6.327983	3.0917044	
2001	0.160493781	#DIV/0!	0.0250726	2.8214789	7.9607433	7.47	14.2639374	6.346684	3.2282442	
2002	0.020713069	#DIV/0!	-0.1158777	2.8214789	7.9607433	7.21	13.1114045	6.391287	3.3821231	
2003	0.000528146	#DIV/0!	-0.32917	2.8214789	7.9607433	10.44	13.3391396	6.736821	2.05732	
2004	-0.000336201	#DIV/0!	-0.3904927	2.8214789	7.9607433	12.49	14.1402717	7.13008	2.0702113	
2005	-0.002957678	#DIV/0!	-0.0139146	2.8214789	7.9607433	17.88	14.9477281	7.561522	2.2131486	
2006	-0.024705719	#DIV/0!	0.0952543	2.8214789	7.9607433	17.51	15.5291734	7.793462	2.3185186	
2007	-0.179538233	0.146784	-0.0504239	2.8214789	7.9607433	19.27	15.6979531	8.38691	2.2805526	
2008	0	0.37851	0.2686619	0.8384664	0.7030259	22.84	10.2350802	8.685141	1.9309764	
2009	0.085060197	0.382196	-0.0679899	0.5671841	0.3216978	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.338703	0.1584218	0.6384495	0.4076178	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.3688275	0.1360337	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
					0					
					0					
					0					
POLYPR					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.8675555	3.4877635	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.9257997	3.7087043	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.9918071	3.9672956	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.0689335	4.2804858	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.1446256	4.5994191	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	2.2216026	4.9355183	7.11	15.4063485	6.327983	3.0917044	
2001	0.001886783	0.162666	-0.026729	2.2908474	5.247982	7.47	14.2639374	6.346684	3.2282442	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2002	0.064016848	0.118797	0.0545359	2.3507359	5.5259593	7.21	13.1114045	6.391287	3.3821231	
2003	0.098465741	0.128321	0.056399	2.3958237	5.7399711	10.44	13.3391396	6.736821	2.05732	
2004	-0.038369049	0.123834	0.0270591	2.4231978	5.8718877	12.49	14.1402717	7.13008	2.0702113	
2005	0	0.177621	-0.0144923	2.4076372	5.7967171	17.88	14.9477281	7.561522	2.2131486	
2006	-0.140885258	0.40012	0.0016709	2.3644104	5.5904364	17.51	15.5291734	7.793462	2.3185186	
2007	-0.161893673	0.318867	0.0366861	2.4543334	6.0237526	19.27	15.6979531	8.38691	2.2805526	
2008	0.667072117	2.538594	0.0421529	2.1620455	4.6744409	22.84	10.2350802	8.685141	1.9309764	
2009	0.501392062	1.294882	0.1119429	1.4883688	2.2152418	18.80	4.71849407	9.965353	0.6418982	
2010	-1	-0.00712	0.0775865	0.6114955	0.3739267	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.0985161	0.0097054	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
STUDIOP					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	0.8448384	0.7137519	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	0.8666994	0.7511678	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	0.8718049	0.7600439	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	0.848326	0.719657	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	0.8001424	0.6402279	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	0.7580891	0.5746991	7.11	15.4063485	6.327983	3.0917044	
2001	0.137332879	-0.06567	-0.0948671	0.7521282	0.5656968	7.47	14.2639374	6.346684	3.2282442	
2002	0.444978751	-0.02678	-0.1113991	0.7693757	0.591939	7.21	13.1114045	6.391287	3.3821231	
2003	0.404820291	-0.27649	0.0370262	0.7991016	0.6385634	10.44	13.3391396	6.736821	2.05732	
2004	-0.141705601	-0.39267	0.0346167	0.8319699	0.6921739	12.49	14.1402717	7.13008	2.0702113	
2005	1.267993256	-0.2631	0.0191122	0.8543845	0.7299728	17.88	14.9477281	7.561522	2.2131486	
2006	0.6823132	-0.76759	0.0061688	0.7262459	0.5274331	17.51	15.5291734	7.793462	2.3185186	
2007	0.490067609	-0.35132	0.0124361	0.3575493	0.1278415	19.27	15.6979531	8.38691	2.2805526	
2008	-0.015978158	-0.30475	-0.0502551	0.0941476	0.0088638	22.84	10.2350802	8.685141	1.9309764	
2009	-0.109841449	-0.27234	0.0910956	0.0227329	0.0005168	18.80	4.71849407	9.965353	0.6418982	
2010	-1	-0.81345	0.0067882	0.0277674	0.000771	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.04519	0.0020421	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
					0					
					0					
					0					
					0					
PETROLEUM (N	I/K	Q	CF/K			0				
AP						0				
1995	#DIV/0!	#DIV/0!	#DIV/0!	69.381185	4813.7489	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	71.175918	5066.0113	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	73.643627	5423.3838	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	76.321742	5825.0084	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	78.945237	6232.3505	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.866689	-7.7528976	81.576123	6654.6639	7.11	15.4063485	6.327983	3.0917044	
2001	0.17451307	-1.06555	-1.1747699	84.432402	7128.8306	7.47	14.2639374	6.346684	3.2282442	
2002	0.062965368	-0.75869	0.7719654	87.45098	7647.674	7.21	13.1114045	6.391287	3.3821231	
2003	1.620973382	-0.51403	0.2056772	90.446214	8180.5176	10.44	13.3391396	6.736821	2.05732	
2004	-1	0.322319	0.11435	95.374388	9096.2738	12.49	14.1402717	7.13008	2.0702113	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2005	#DIV/0!	#DIV/0!	#DIV/0!	102.44458	10494.892	17.88	14.9477281	7.561522	2.2131486	
2006	#DIV/0!	#DIV/0!	#DIV/0!	109.50974	11992.383	17.51	15.5291734	7.793462	2.3185186	
2007	0.101054248	2.598472	0.5947347	115.00803	13226.846	19.27	15.6979531	8.38691	2.2805526	
2008	0.149916147	10.83829	0.4742483	99.884485	9976.9104	22.84	10.2350802	8.685141	1.9309764	
2009	-0.232697314	5.045249	-0.7814088	38.154026	1455.7297	18.80	4.71849407	9.965353	0.6418982	
2010	-1	1.742118	-0.2949949	39.32052	1546.1033	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	52.858051	2793.9736	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
					0					
					0					
					0					
					0					
					0					
EOG					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	49.187743	2419.434	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	49.291778	2429.6794	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	49.291778	2429.6794	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	49.435792	2443.8975	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	50.835943	2584.2931	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	52.618086	2768.6629	7.11	15.4063485	6.327983	3.0917044	
2001	1.097438231	0.344335	0.1533794	54.532855	2973.8323	7.47	14.2639374	6.346684	3.2282442	
2002	-0.497113115	0.158345	0.0472431	56.627056	3206.6235	7.21	13.1114045	6.391287	3.3821231	
2003	-0.093108484	0.309678	-1.4757154	58.798855	3457.3053	10.44	13.3391396	6.736821	2.05732	
2004	0.032063266	0.587166	-0.5011849	61.059396	3728.2499	12.49	14.1402717	7.13008	2.0702113	
2005	-0.082155226	1.618944	-0.6962405	63.121927	3984.3777	17.88	14.9477281	7.561522	2.2131486	
2006	0.749287658	1.98466	0.0751397	64.093357	4107.9584	17.51	15.5291734	7.793462	2.3185186	
2007	1.093197379	5.488572	-0.2493558	63.415566	4021.534	19.27	15.6979531	8.38691	2.2805526	
2008	0.038914037	10.88687	-0.3575614	64.221222	4124.3654	22.84	10.2350802	8.685141	1.9309764	
2009	-0.062523063	15.09205	-1.6606981	62.281713	3879.0118	18.80	4.71849407	9.965353	0.6418982	
2010	-1	78.39905	1.04701	56.760636	3221.7698	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	50.699407	2570.4299	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
MOBILE					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	69.901065	4886.1589	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	69.336347	4807.5291	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	69.973355	4896.2704	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	71.263058	5078.4235	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	71.758423	5149.2713	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	71.786196	5153.2579	7.11	15.4063485	6.327983	3.0917044	
2001	0.189381362	1.541684	0.3420002	72.09985	5198.3884	7.47	14.2639374	6.346684	3.2282442	
2002	0.09857894	1.305934	0.0997099	71.950393	5176.859	7.21	13.1114045	6.391287	3.3821231	
2003	0.102445039	1.942574	0.2789463	71.019733	5043.8025	10.44	13.3391396	6.736821	2.05732	
2004	0.026554203	3.412161	0.3054516	74.175877	5502.0607	12.49	14.1402717	7.13008	2.0702113	
2005	0.206621281	3.33575	0.4096834	80.576515	6492.5748	17.88	14.9477281	7.561522	2.2131486	
2006	0.219022268	2.89153	0.2405349	89.087673	7936.6135	17.51	15.5291734	7.793462	2.3185186	
2007	0.160262507	2.497584	0.1300465	95.756639	9169.3339	19.27	15.6979531	8.38691	2.2805526	
2008	0.15631934	3.97209	0.1702981	93.26993	8699.2798	22.84	10.2350802	8.685141	1.9309764	
2009	0.189065518	2.097034	0.243546	24.981613	624.08099	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.872322	0.207967	18.188375	330.81697	24.68	4.69121759	4.233454	0.7663115	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2011	#DIV/0!	#DIV/0!	#DIV/0!	26.38356	696.09226	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
TOT					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	76.351551	5829.5593	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	75.097696	5639.6639	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	75.116844	5642.5402	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	74.276786	5517.0409	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	71.237096	5074.7238	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	65.790941	4328.4479	7.11	15.4063485	6.327983	3.0917044	
2001	0.204298527	2.499806	0.6765964	60.630006	3675.9976	7.47	14.2639374	6.346684	3.2282442	
2002	0.221169245	1.962836	0.5766786	52.363077	2741.8918	7.21	13.1114045	6.391287	3.3821231	
2003	0.213957606	2.426304	0.5041986	36.85252	1358.1082	10.44	13.3391396	6.736821	2.05732	
2004	0.198093233	4.99655	0.4299795	31.124232	968.7178	12.49	14.1402717	7.13008	2.0702113	
2005	0.134316003	3.526722	0.4668708	32.550452	1059.532	17.88	14.9477281	7.561522	2.2131486	
2006	0.132121787	3.873342	0.2865364	34.817178	1212.2359	17.51	15.5291734	7.793462	2.3185186	
2007	0.130064464	3.329168	0.3273875	37.238557	1386.7102	19.27	15.6979531	8.38691	2.2805526	
2008	0.125534522	3.615877	0.3909582	38.378178	1472.8846	22.84	10.2350802	8.685141	1.9309764	
2009	0.165265563	2.180267	0.3137426	35.54534	1263.4712	18.80	4.71849407	9.965353	0.6418982	
2010	-1	2.544347	0.3688925	20.207262	408.33343	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	5.6268071	31.660958	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
TEX					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	76.721282	5886.1552	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	77.114705	5946.6777	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	78.401967	6146.8685	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	79.834742	6373.586	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	80.616608	6499.0376	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	80.9084	6546.1693	7.11	15.4063485	6.327983	3.0917044	
2001	0.201414802	2.724562	0.4004948	82.920441	6875.7996	7.47	14.2639374	6.346684	3.2282442	
2002	0.016009466	2.022955	0.3958123	85.564585	7321.2982	7.21	13.1114045	6.391287	3.3821231	
2003	0.237890181	2.783575	0.1731662	87.822758	7712.8368	10.44	13.3391396	6.736821	2.05732	
2004	0.124556316	6.613889	0.2560681	92.587704	8572.4829	12.49	14.1402717	7.13008	2.0702113	
2005	0.091343517	4.621805	0.2887941	100.02879	10005.758	17.88	14.9477281	7.561522	2.2131486	
2006	-0.028681075	3.599615	0.3321991	110.52176	12215.059	17.51	15.5291734	7.793462	2.3185186	
2007	-0.108529162	5.240223	0.5104975	119.38412	14252.568	19.27	15.6979531	8.38691	2.2805526	
2008	-0.112670264	11.33457	-0.0658846	95.36772	9095.0021	22.84	10.2350802	8.685141	1.9309764	
2009	4.997731234	4.093687	0.3461482	20.547852	422.21421	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.32026	0	11.587396	134.26775	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	12.79101	163.60994	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
PHARMACEUTICALS & ANIMAL FEEDS					0					
EKOCORP					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.725903	7.4305473	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.7672696	7.6577813	5.10	45.7353322	7.145999	3.0144953	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.7241796	7.4211545	5.52	40.814013	5.965291	3.0951766	
1998	-0.002188057	1.140522	0.1010295	2.5867364	6.6912054	4.09	33.1395427	6.100733	3.1888952	
1999	0.00869422	0.908811	0.1047742	2.4856013	6.178214	5.22	18.3776358	6.299982	3.3015577	
2000	-0.029353677	0.84923	0.1211219	2.5042168	6.271102	7.11	15.4063485	6.327983	3.0917044	
2001	-0.031074923	0.859724	0.1371602	2.5144301	6.3223589	7.47	14.2639374	6.346684	3.2282442	
2002	-1	0.883492	0.158065	2.4942535	6.2213003	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	2.5583258	6.545031	10.44	13.3391396	6.736821	2.05732	
2004	0.256105298	0.579586	0.1293859	2.7247928	7.424496	12.49	14.1402717	7.13008	2.0702113	
2005	1.090172447	0.249286	0.1114465	2.902697	8.4256498	17.88	14.9477281	7.561522	2.2131486	
2006	-0.09624335	0.12299	0.0561351	3.0678848	9.411917	17.51	15.5291734	7.793462	2.3185186	
2007	0.066869982	0.770345	0.0683115	3.1716064	10.059087	19.27	15.6979531	8.38691	2.2805526	
2008	0.094897092	1.901789	0.0513649	1.906278	3.6338957	22.84	10.2350802	8.685141	1.9309764	
2009	-0.042439772	1.201385	0.0510896	0.6705629	0.4496546	18.80	4.71849407	9.965353	0.6418982	
2010	-1	1.176687	0.0549811	0.4716868	0.2224885	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.245991	0.0605116	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
EVANS										
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.8689826	3.4930961	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.9205283	3.688429	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.9397715	3.7627135	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.0061547	4.0246569	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.088829	4.3632064	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.067973	0.0417331	2.1584093	4.6587306	7.11	15.4063485	6.327983	3.0917044	
2001	-0.025574816	0.071132	0.0535696	2.2120069	4.8929745	7.47	14.2639374	6.346684	3.2282442	
2002	-0.029834164	0.062565	0.0895683	2.2569847	5.09398	7.21	13.1114045	6.391287	3.3821231	
2003	0.052830153	0.330158	0.0839154	2.3198971	5.3819224	10.44	13.3391396	6.736821	2.05732	
2004	0.167584422	0.593	-0.0113479	2.4687695	6.0948227	12.49	14.1402717	7.13008	2.0702113	
2005	0.076690934	0.500941	0.0607053	2.6858652	7.2138719	17.88	14.9477281	7.561522	2.2131486	
2006	0.13840263	0.523083	0.0941451	2.9450669	8.6734193	17.51	15.5291734	7.793462	2.3185186	
2007	0.085635592	1.054051	-0.198309	3.0617469	9.3742943	19.27	15.6979531	8.38691	2.2805526	
2008	-0.029855794	0.990677	-0.2939184	1.6893632	2.8539479	22.84	10.2350802	8.685141	1.9309764	
2009	-0.04042421	0.411951	-0.5283567	0.5844249	0.3415525	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.203434	0.0054239	0.2225142	0.0495126	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.1366131	0.0186632	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
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MAY & B					0					
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1996	#DIV/0!	#DIV/0!	#DIV/0!	3.0437604	9.2644774	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	3.1514082	9.9313736	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	3.2713757	10.701899	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	3.4126873	11.646435	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	3.5753517	12.78314	7.11	15.4063485	6.327983	3.0917044	
2001	0.024147399	0.952087	0.3845992	3.7590376	14.130363	7.47	14.2639374	6.346684	3.2282442	
2002	0.041480388	0.636321	0.1341369	3.9687746	15.751172	7.21	13.1114045	6.391287	3.3821231	
2003	-0.051116428	0.377245	0.2482354	4.1887882	17.545946	10.44	13.3391396	6.736821	2.05732	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2004	0.279491899	-0.16599	0.3011695	4.3170626	18.63703	12.49	14.1402717	7.13008	2.0702113	
2005	1.429371688	-1.1964	0.26281	4.3756199	19.146049	17.88	14.9477281	7.561522	2.2131486	
2006	0.152522264	0.055464	0.2248143	4.2603499	18.150581	17.51	15.5291734	7.793462	2.3185186	
2007	0.52263696	0.138357	0.1921554	3.9483316	15.589322	19.27	15.6979531	8.38691	2.2805526	
2008	0.92341715	2.242278	0.2532015	2.2762029	5.1810997	22.84	10.2350802	8.685141	1.9309764	
2009	0.211270733	0.462296	0.0730963	1.3750706	1.8908192	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.619851	0.0501788	1.0216381	1.0437444	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.6163929	0.3799402	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
					0					
					0					
MORIS					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	4.3183455	18.648108	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	4.4398956	19.712673	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	4.506617	20.309597	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	4.5630207	20.821157	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	4.6325973	21.460958	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	2.537808	0.0718202	4.6637708	21.750758	7.11	15.4063485	6.327983	3.0917044	
2001	-0.146948003	3.869814	0.2817658	4.714392	22.225492	7.47	14.2639374	6.346684	3.2282442	
2002	-0.046050382	3.454732	0.1806965	4.7050858	22.137833	7.21	13.1114045	6.391287	3.3821231	
2003	0.129286653	3.406138	0.2844127	4.403376	19.38972	10.44	13.3391396	6.736821	2.05732	
2004	0.107739922	6.900685	0.2557137	4.2815497	18.331668	12.49	14.1402717	7.13008	2.0702113	
2005	0.588986795	5.484993	0.2569907	4.1168395	16.948368	17.88	14.9477281	7.561522	2.2131486	
2006	0.019776983	4.158461	0.122434	3.5330621	12.482528	17.51	15.5291734	7.793462	2.3185186	
2007	5.07355065	13.39509	0.0809042	3.2274697	10.416561	19.27	15.6979531	8.38691	2.2805526	
2008	-0.042881164	2.703327	0.0350586	2.4075064	5.7960871	22.84	10.2350802	8.685141	1.9309764	
2009	-0.065620358	2.844082	-0.052874	1.5026717	2.2580224	18.80	4.71849407	9.965353	0.6418982	
2010	-1	2.403676	-0.0898771	0.7955897	0.632963	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.2374262	0.0563712	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
					0					
NEIMET					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.725903	7.4305473	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.7672696	7.6577813	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.7241796	7.4211545	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.5867364	6.6912054	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.4856013	6.178214	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	2.5042168	6.271102	7.11	15.4063485	6.327983	3.0917044	
2001	-0.21142454	3.189705	0.2184585	2.5144301	6.3223589	7.47	14.2639374	6.346684	3.2282442	
2002	-0.219155374	3.826029	0.469162	2.4942535	6.2213003	7.21	13.1114045	6.391287	3.3821231	
2003	-0.076694972	2.674979	0.8775441	2.5583258	6.545031	10.44	13.3391396	6.736821	2.05732	
2004	0.31790146	2.027822	1.0798358	2.7247928	7.424496	12.49	14.1402717	7.13008	2.0702113	
2005	-0.323271625	1.326974	1.3628584	2.902697	8.4256498	17.88	14.9477281	7.561522	2.2131486	
2006	0.949093588	6.230849	1.6824487	3.0678848	9.411917	17.51	15.5291734	7.793462	2.3185186	
2007	0.928385471	3.827243	1.2220764	3.1716064	10.059087	19.27	15.6979531	8.38691	2.2805526	
2008	0.033756492	14.33508	0.5349378	1.906278	3.6338957	22.84	10.2350802	8.685141	1.9309764	
2009	0.80527017	5.338819	-2.3970953	0.6705629	0.4496546	18.80	4.71849407	9.965353	0.6418982	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2010	0.149769995	2.567877	-0.3679288	0.4716868	0.2224885	24.68	4.69121759	4.233454	0.7663115	
2011	-1	1.491462	0.2868788	0.245991	0.0605116	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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PHARM					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.6236391	6.8834822	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.6732316	7.146167	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.7650227	7.6453507	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.8749429	8.265297	4.09	33.1395427	6.100733	3.1888952	
1999	0	0.429036	-0.5740219	2.9974085	8.9844577	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.361727	-0.4422237	3.116573	9.7130272	7.11	15.4063485	6.327983	3.0917044	
2001	-0.032240306	0.317891	-0.0287578	3.2300853	10.433451	7.47	14.2639374	6.346684	3.2282442	
2002	0.322848911	0.3237	-0.2615685	3.3426087	11.173033	7.21	13.1114045	6.391287	3.3821231	
2003	0.722384516	0.385754	0.2972605	3.4279792	11.751041	10.44	13.3391396	6.736821	2.05732	
2004	0.353227553	0.32822	0.0830911	3.5005039	12.253527	12.49	14.1402717	7.13008	2.0702113	
2005	0.236337968	0.301229	0.0164761	3.59245	12.905697	17.88	14.9477281	7.561522	2.2131486	
2006	0.058014715	0.247331	-0.5471553	3.6596256	13.392859	17.51	15.5291734	7.793462	2.3185186	
2007	-0.045573777	0.347456	-0.37144	3.6693322	13.463998	19.27	15.6979531	8.38691	2.2805526	
2008	-1	0.940024	-0.3179987	3.0999488	9.6096823	22.84	10.2350802	8.685141	1.9309764	
2009	#DIV/0!	#DIV/0!	#DIV/0!	1.7565208	3.0853653	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	0.3897219	0.1518832	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.1649614	0.0272123	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
UDC					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	0.70838	0.5018023	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	0.7083641	0.5017797	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	0.7083641	0.5017797	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	0.7083641	0.5017797	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	0.7083641	0.5017797	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	0.7083641	0.5017797	7.11	15.4063485	6.327983	3.0917044	
2001	#DIV/0!	#DIV/0!	#DIV/0!	0.7083641	0.5017797	7.47	14.2639374	6.346684	3.2282442	
2002	#DIV/0!	#DIV/0!	#DIV/0!	0.7083641	0.5017797	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	0.7083641	0.5017797	10.44	13.3391396	6.736821	2.05732	
2004	#DIV/0!	#DIV/0!	#DIV/0!	0.7083641	0.5017797	12.49	14.1402717	7.13008	2.0702113	
2005	-0.162938943	#DIV/0!	0.0453689	0.7083641	0.5017797	17.88	14.9477281	7.561522	2.2131486	
2006	-0.137395858	#DIV/0!	0.2911209	0.7083641	0.5017797	17.51	15.5291734	7.793462	2.3185186	
2007	8.925484623	#DIV/0!	1.4500483	0.7083641	0.5017797	19.27	15.6979531	8.38691	2.2805526	
2008	0.028898185	2.281382	0.2119649	0.6237941	0.3891191	22.84	10.2350802	8.685141	1.9309764	
2009	-0.157220805	0.844285	0.0614284	0.1727326	0.0298365	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.717687	-0.1049591	0.0415693	0.001728	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0	0	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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2012					0					
					0					
					0					
PRINTING & PUBLISHING					0					

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
ACP					0					
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1996	#DIV/0!	#DIV/0!	#DIV/0!	4.6736977	21.84345	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	4.8546307	23.567439	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	5.0591792	25.595295	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	5.2873558	27.956131	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.603293	-0.2304986	5.541652	30.709907	7.11	15.4063485	6.327983	3.0917044	
2001	-0.073833257	0.4449	0.0114574	5.8203851	33.876883	7.47	14.2639374	6.346684	3.2282442	
2002	0.214663464	0.406111	0.3002278	6.1346309	37.633696	7.21	13.1114045	6.391287	3.3821231	
2003	0.0381325	0.629387	0.3285692	6.4927032	42.155195	10.44	13.3391396	6.736821	2.05732	
2004	-1	1.593241	0.3855247	7.0054753	49.076685	12.49	14.1402717	7.13008	2.0702113	
2005	#DIV/0!	#DIV/0!	#DIV/0!	7.6802581	58.986365	17.88	14.9477281	7.561522	2.2131486	
2006	-0.011316208	-0.06707	0.1378208	8.4915436	72.106312	17.51	15.5291734	7.793462	2.3185186	
2007	0.030488907	0.477875	0.1802921	9.1636656	83.972767	19.27	15.6979531	8.38691	2.2805526	
2008	0.076244526	2.454572	0.154775	4.3738063	19.130182	22.84	10.2350802	8.685141	1.9309764	
2009	1.262645301	2.131772	0.1227676	1.1008238	1.2118131	18.80	4.71849407	9.965353	0.6418982	
2010	-0.068340321	0.502134	0.1295497	0.7132672	0.5087501	24.68	4.69121759	4.233454	0.7663115	
2011	-1	0.152186	0.1295667	1.104E-16	1.22E-32	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
LMAN					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	6.2630232	39.225459	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	6.3003906	39.694922	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	6.4466458	41.559242	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	6.6267774	43.914178	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	6.7993012	46.230497	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	7.0094521	49.132419	7.11	15.4063485	6.327983	3.0917044	
2001	-0.096417493	1.647339	0.3486274	7.3798777	54.462595	7.47	14.2639374	6.346684	3.2282442	
2002	-0.012864449	1.745997	0.2685542	7.8011145	60.857388	7.21	13.1114045	6.391287	3.3821231	
2003	-0.093942685	1.39672	0.1934756	8.1907424	67.088261	10.44	13.3391396	6.736821	2.05732	
2004	0.240343994	1.343681	0.4124	8.5686299	73.421418	12.49	14.1402717	7.13008	2.0702113	
2005	0.11334833	0.911921	0.6328443	8.7618126	76.769359	17.88	14.9477281	7.561522	2.2131486	
2006	0.131385857	2.263906	0.9663911	8.9336953	79.810912	17.51	15.5291734	7.793462	2.3185186	
2007	0.038530549	2.731891	1.1603728	9.2565815	85.6843	19.27	15.6979531	8.38691	2.2805526	
2008	0.133492647	13.36621	2.7019687	8.349536	69.714751	22.84	10.2350802	8.685141	1.9309764	
2009	0.119918518	11.40455	2.5266685	1.6661741	2.776136	18.80	4.71849407	9.965353	0.6418982	
2010	-1	9.702743	0.7109377	0.6537936	0.4274461	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.1736813	0.0301652	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
UP					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.584385	6.6790459	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.6172385	6.8499375	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.6720552	7.1398792	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.7350589	7.480547	4.09	33.1395427	6.100733	3.1888952	
1999	0.064351615	0.199572	0.1156662	2.7868637	7.7666093	5.22	18.3776358	6.299982	3.3015577	
2000	0.033679319	0.389987	0.1482035	2.8454456	8.0965605	7.11	15.4063485	6.327983	3.0917044	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2008	-0.051244446	0.268494	0.0259673	0	0	22.84	10.2350802	8.685141	1.9309764	
2009	-1	0.282996	0.0880655	0	0	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	0	0	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0	0	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
UNVP					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	0.0476022	0.002266	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	0.0480827	0.0023119	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	0.0484359	0.002346	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	0.0485879	0.0023608	4.09	33.1395427	6.100733	3.1888952	
1999	0	0.454777	0.0417886	0.0484099	0.0023435	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.454055	0.0507398	0.0476801	0.0022734	7.11	15.4063485	6.327983	3.0917044	
2001	0.093824159	0.413845	0.047925	0.0460096	0.0021169	7.47	14.2639374	6.346684	3.2282442	
2002	-0.053391893	0.378347	0.0469362	0.0425578	0.0018112	7.21	13.1114045	6.391287	3.3821231	
2003	-1	0.405424	0.1005087	0.0353546	0.0012499	10.44	13.3391396	6.736821	2.05732	
2004	#DIV/0!	#DIV/0!	#DIV/0!	0.0311281	0.000969	12.49	14.1402717	7.13008	2.0702113	
2005	-0.071477742	0.459385	0.0636186	0.0310436	0.0009637	17.88	14.9477281	7.561522	2.2131486	
2006	-0.023538861	0.494749	-0.0994069	0.0291129	0.0008476	17.51	15.5291734	7.793462	2.3185186	
2007	-0.036001265	0.506675	-0.4310028	0.0252516	0.0006376	19.27	15.6979531	8.38691	2.2805526	
2008	-0.049816225	0.5497	-0.6065897	0.0185396	0.0003437	22.84	10.2350802	8.685141	1.9309764	
2009	-1	0.592873	-0.7432479	0.014984	0.0002245	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	0.0142657	0.0002035	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	7.642E-16	5.84E-31	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
					0					
					0					
CAP					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	3.8589142	14.891218	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	3.9528494	15.625019	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	4.0060687	16.048587	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	4.1450076	17.181088	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	4.2994113	18.484938	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.193817	-0.2747267	4.4713284	19.992778	7.11	15.4063485	6.327983	3.0917044	
2001	-0.023436313	0.273124	-0.2141192	4.6634546	21.747809	7.47	14.2639374	6.346684	3.2282442	
2002	-0.110035336	0.283238	-0.3164689	4.8840603	23.854045	7.21	13.1114045	6.391287	3.3821231	
2003	-0.025243758	0.316052	0.0155125	5.1340184	26.358145	10.44	13.3391396	6.736821	2.05732	
2004	2.220119945	0.310186	-0.1101607	5.4214857	29.392507	12.49	14.1402717	7.13008	2.0702113	
2005	-0.016094043	0.091605	0.0050785	5.7454388	33.010067	17.88	14.9477281	7.561522	2.2131486	
2006	-0.009596134	0.089906	0.0238227	6.0852934	37.030796	17.51	15.5291734	7.793462	2.3185186	
2007	-1	0.161368	0.0036631	6.300837	39.700546	19.27	15.6979531	8.38691	2.2805526	
2008	#DIV/0!	#DIV/0!	#DIV/0!	5.8683636	34.437691	22.84	10.2350802	8.685141	1.9309764	
2009	#DIV/0!	#DIV/0!	#DIV/0!	2.2669192	5.1389228	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	0.0032266	1.041E-05	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0	0	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
JULI					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.2350875	1.5254413	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.2671677	1.6057139	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.2999767	1.6899395	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.3331223	1.7772152	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	1.3676622	1.8704999	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	0.021323	-0.0161019	1.4030918	1.9686667	7.11	15.4063485	6.327983	3.0917044	
2001	-0.045596455	0.024452	0.023948	1.4387276	2.069937	7.47	14.2639374	6.346684	3.2282442	
2002	-0.044601583	0.026444	-0.0303416	1.4731532	2.1701805	7.21	13.1114045	6.391287	3.3821231	
2003	0.207503844	0.490722	-0.2110917	1.5008874	2.2526631	10.44	13.3391396	6.736821	2.05732	
2004	0.095320565	0.803729	0.0092876	1.5100242	2.2801732	12.49	14.1402717	7.13008	2.0702113	
2005	-0.076019222	0.717424	-0.1284297	1.4677616	2.1543242	17.88	14.9477281	7.561522	2.2131486	
2006	-0.090930443	0.769045	-0.3943563	1.2826534	1.6451997	17.51	15.5291734	7.793462	2.3185186	
2007	0	0.952666	-0.1309194	0.9370334	0.8780316	19.27	15.6979531	8.38691	2.2805526	
2008	-0.009670395	5.793261	-0.2192633	0.4483441	0.2010124	22.84	10.2350802	8.685141	1.9309764	
2009	3.491576907	7.118494	-0.4932727	0.264259	0.0698328	18.80	4.71849407	9.965353	0.6418982	
2010	-1	1.330725	-0.1545843	0.1012346	0.0102484	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.0634089	0.0040207	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
					0					
ROKANA					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	0.0483802	0.0023406	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	0.043314	0.0018761	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	0.044461	0.0019768	5.52	40.814013	5.965291	3.0951766	
1998	-0.296312711	0.548174	-0.6932282	0.0456305	0.0020821	4.09	33.1395427	6.100733	3.1888952	
1999	-0.496032246	0.779002	-0.8109334	0.0468597	0.0021958	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	1.545739	-3.1444639	0.0481292	0.0023164	7.11	15.4063485	6.327983	3.0917044	
2001	161.7090395	2.495763	-3.7647296	0.0493832	0.0024387	7.47	14.2639374	6.346684	3.2282442	
2002	-1	0.018602	0.010335	0.0505608	0.0025564	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	0.0514775	0.0026499	10.44	13.3391396	6.736821	2.05732	
2004	#DIV/0!	#DIV/0!	#DIV/0!	0.0517417	0.0026772	12.49	14.1402717	7.13008	2.0702113	
2005	-0.029536264	0.023621	-0.0672581	0.0503226	0.0025324	17.88	14.9477281	7.561522	2.2131486	
2006	-0.034336157	0.023813	-0.061182	0.0423427	0.0017929	17.51	15.5291734	7.793462	2.3185186	
2007	-0.006200639	0.025327	-0.0659788	0.0172046	0.000296	19.27	15.6979531	8.38691	2.2805526	
2008	-0.04012783	0.050517	-0.157488	0.001336	1.785E-06	22.84	10.2350802	8.685141	1.9309764	
2009	-1	0.052847	-0.0392828	0.001286	1.654E-06	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	0.0015377	2.365E-06	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	1.004E-15	1.008E-30	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
CONSTRUCTION					0					
ROAD					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.1781947	1.3881427	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.165937	1.359409	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.137146	1.2931009	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	1.1710961	1.371466	4.09	33.1395427	6.100733	3.1888952	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
1999	#DIV/0!	#DIV/0!	#DIV/0!	1.2161729	1.4790766	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	1.2607588	1.5895127	7.11	15.4063485	6.327983	3.0917044	
2001	-0.259148603	0.038941	-0.0742468	1.2957813	1.6790493	7.47	14.2639374	6.346684	3.2282442	
2002	-0.242933055	0.048868	-0.0938464	1.3320078	1.7742447	7.21	13.1114045	6.391287	3.3821231	
2003	-0.322635633	0.068889	-0.0872298	1.3597755	1.8489894	10.44	13.3391396	6.736821	2.05732	
2004	0.061978998	0.096974	-0.0442522	1.3884345	1.9277504	12.49	14.1402717	7.13008	2.0702113	
2005	0.052951631	0.089734	0.0320254	1.3953343	1.9469577	17.88	14.9477281	7.561522	2.2131486	
2006	0.133342159	0.084028	0.098931	1.3567432	1.8407521	17.51	15.5291734	7.793462	2.3185186	
2007	1.430988918	0.072292	0.1834017	1.1911635	1.4188704	19.27	15.6979531	8.38691	2.2805526	
2008	2.065503075	0.109541	0.1241591	0.2897818	0.0839735	22.84	10.2350802	8.685141	1.9309764	
2009	-0.100904399	0.036411	0.0585793	0.3521939	0.1240405	18.80	4.71849407	9.965353	0.6418982	
2010	-0.009500036	0.034597	0.0873929	0.4673324	0.2183996	24.68	4.69121759	4.233454	0.7663115	
2011	-1	0.042199	0.0805188	#DIV/0!	#DIV/0!	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
JBN					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	23.867528	569.6589	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	23.978896	574.98745	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	24.084084	580.04309	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	24.097531	580.691	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	23.932983	572.78767	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	24.110778	581.3296	7.11	15.4063485	6.327983	3.0917044	
2001	0.064333931	1.014305	0.0875747	24.967982	623.40013	7.47	14.2639374	6.346684	3.2282442	
2002	0.044422434	0.505534	0.0641298	26.04871	678.5353	7.21	13.1114045	6.391287	3.3821231	
2003	0.185294361	0.368771	0.0592377	26.896555	723.42465	10.44	13.3391396	6.736821	2.05732	
2004	0.835717165	0.28975	0.0529053	27.540653	758.48756	12.49	14.1402717	7.13008	2.0702113	
2005	0.482690279	0.192381	0.0466309	27.056472	732.05268	17.88	14.9477281	7.561522	2.2131486	
2006	0.195293892	0.228807	0.0561433	26.01677	676.87231	17.51	15.5291734	7.793462	2.3185186	
2007	0.199352794	0.322169	0.0742197	26.874197	722.22247	19.27	15.6979531	8.38691	2.2805526	
2008	0.703950384	1.944106	0.0877812	18.783035	352.8024	22.84	10.2350802	8.685141	1.9309764	
2009	0.242852212	0.338767	0.0677801	10.431472	108.81562	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.444172	0.0463389	5.9474707	35.372407	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	6.2337958	38.86021	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
ARBICO					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	10.158931	103.20387	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	10.409141	108.35022	5.10	45.7353322	7.145999	3.0144953	
1997	-0.047662726	0.131125	0.0992322	10.674242	113.93944	5.52	40.814013	5.965291	3.0951766	
1998	-0.087825063	0.228412	-0.3836907	10.95959	120.11261	4.09	33.1395427	6.100733	3.1888952	
1999	-0.015955575	-2.26016	-0.9924524	11.23906	126.31647	5.22	18.3776358	6.299982	3.3015577	
2000	0.088582442	-1.08145	0.4444224	11.520487	132.72161	7.11	15.4063485	6.327983	3.0917044	
2001	-1	-5.96574	-0.789172	11.803629	139.32566	7.47	14.2639374	6.346684	3.2282442	
2002	#DIV/0!	#DIV/0!	#DIV/0!	12.064198	145.54488	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	12.250992	150.08679	10.44	13.3391396	6.736821	2.05732	
2004	#DIV/0!	#DIV/0!	#DIV/0!	12.260224	150.31309	12.49	14.1402717	7.13008	2.0702113	
2005	0.528327059	1.330686	0.221079	11.819955	139.71133	17.88	14.9477281	7.561522	2.2131486	
2006	1.964389491	1.209428	-0.2331544	10.100699	102.02411	17.51	15.5291734	7.793462	2.3185186	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2007	-0.05006797	0.524519	-0.0055546	6.9691854	48.569545	19.27	15.6979531	8.38691	2.2805526	
2008	2.785422797	6.848186	-0.1388588	0.9475953	0.8979368	22.84	10.2350802	8.685141	1.9309764	
2009	0.0494911	2.165614	-0.0005945	0	0	18.80	4.71849407	9.965353	0.6418982	
2010	-1	2.06349	-0.1154293	0	0	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0	0	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
CAPPA					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	37.891518	1435.7672	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	38.563061	1487.1097	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	39.467808	1557.7078	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	40.639125	1651.5385	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	41.799333	1747.1843	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	42.933688	1843.3015	7.11	15.4063485	6.327983	3.0917044	
2001	#DIV/0!	#DIV/0!	#DIV/0!	43.926923	1929.5746	7.47	14.2639374	6.346684	3.2282442	
2002	0.039812517	0.764269	0.0520515	44.71333	1999.2819	7.21	13.1114045	6.391287	3.3821231	
2003	-0.07358762	0.75386	0.2185885	45.11321	2035.2017	10.44	13.3391396	6.736821	2.05732	
2004	0.027757772	0.755878	0.2671431	44.598414	1989.0185	12.49	14.1402717	7.13008	2.0702113	
2005	0.01312687	0.960379	0.406797	41.897239	1755.3786	17.88	14.9477281	7.561522	2.2131486	
2006	0.466965174	2.272112	0.2602872	34.777513	1209.4754	17.51	15.5291734	7.793462	2.3185186	
2007	0.227748833	1.964712	-0.2047658	19.582134	383.45998	19.27	15.6979531	8.38691	2.2805526	
2008	-1	11.36095	0	5.5485599	30.786517	22.84	10.2350802	8.685141	1.9309764	
2009	#DIV/0!	#DIV/0!	#DIV/0!	1.707447	2.9153754	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	4.03E-13	1.624E-25	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	1.302E-13	1.696E-26	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!			0	27.13	0.98358553	1.449569	4.9992449
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						0				
COSTAIN					0					
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1996	#DIV/0!	#DIV/0!	#DIV/0!	8.4514965	71.427794	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	8.7438449	76.454824	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	9.079509	82.437484	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	9.44769	89.258846	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	9.8233539	96.498282	7.11	15.4063485	6.327983	3.0917044	
2001	-0.112073234	0.18826	-0.0849652	10.251371	105.09061	7.47	14.2639374	6.346684	3.2282442	
2002	0.339666978	0.118385	0.0519971	10.71913	114.89975	7.21	13.1114045	6.391287	3.3821231	
2003	0.695375996	0.092608	-0.0824844	11.228666	126.08293	10.44	13.3391396	6.736821	2.05732	
2004	0.335317272	0.085408	-0.5355836	11.840787	140.20423	12.49	14.1402717	7.13008	2.0702113	
2005	-0.092704749	-0.77113	-0.2406041	12.545709	157.39481	17.88	14.9477281	7.561522	2.2131486	
2006	0.045100869	0.108436	-1.4031414	13.287714	176.56335	17.51	15.5291734	7.793462	2.3185186	
2007	0.575189713	0.340609	0.0973708	13.850975	191.84951	19.27	15.6979531	8.38691	2.2805526	
2008	1.021872363	1.304258	0.2022379	6.6550236	44.28934	22.84	10.2350802	8.685141	1.9309764	
2009	0.543102582	1.112038	-0.1741927	2.0145243	4.0583083	18.80	4.71849407	9.965353	0.6418982	
2010	-1	0.659724	0.0061298	1.996864	3.9874658	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.6206481	0.385204	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!			0	27.13	0.98358553	1.449569	4.9992449
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FOOD/BEVERAGES AND TOBACCO					0					

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
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1996	#DIV/0!	#DIV/0!	#DIV/0!	18.211619	331.66308	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	18.118251	328.27102	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	17.94992	322.19962	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	17.562717	308.44904	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	16.872693	284.68776	7.11	15.4063485	6.327983	3.0917044	
2001	0.573153088	0.653984	0.2910023	15.88991	252.48924	7.47	14.2639374	6.346684	3.2282442	
2002	0.870922325	0.276377	0.5358913	14.139573	199.92752	7.21	13.1114045	6.391287	3.3821231	
2003	0.250214501	0.461169	0.3438503	11.290663	127.47907	10.44	13.3391396	6.736821	2.05732	
2004	0.449177769	1.088089	0.2276335	9.7645393	95.346227	12.49	14.1402717	7.13008	2.0702113	
2005	0.112009751	0.638029	0.1310309	8.3787591	70.203604	17.88	14.9477281	7.561522	2.2131486	
2006	0.387909265	0.864107	0.1441227	6.6672813	44.452641	17.51	15.5291734	7.793462	2.3185186	
2007	0.266934251	0.685166	0.1084846	6.4741858	41.915082	19.27	15.6979531	8.38691	2.2805526	
2008	0.30560608	0.478684	0.1129793	6.0449136	36.540981	22.84	10.2350802	8.685141	1.9309764	
2009	0.104120005	0.123352	0.0822723	5.6929216	32.409357	18.80	4.71849407	9.965353	0.6418982	
2010	0.088207051	0.208625	0.0921707	3.850305	14.824849	24.68	4.69121759	4.233454	0.7663115	
2011	-1	0.303707	0.1019515	1.4889079	2.2168468	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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1996	#DIV/0!	#DIV/0!	#DIV/0!	17.865058	319.16031	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	18.380859	337.85597	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	18.830804	354.59919	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	18.902781	357.31513	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	18.566085	344.69953	7.11	15.4063485	6.327983	3.0917044	
2001	0.486486727	2.500306	0.7339857	18.550809	344.1325	7.47	14.2639374	6.346684	3.2282442	
2002	0.126644173	3.097471	0.6739335	19.127413	365.85794	7.21	13.1114045	6.391287	3.3821231	
2003	0.657184188	4.024448	0.7140987	20.060049	402.40557	10.44	13.3391396	6.736821	2.05732	
2004	0.278274583	5.51047	0.4514052	18.112234	328.053	12.49	14.1402717	7.13008	2.0702113	
2005	0.876995792	2.882353	0.3403672	16.725539	279.74366	17.88	14.9477281	7.561522	2.2131486	
2006	0.069178918	2.117878	-0.3120771	13.546359	183.50385	17.51	15.5291734	7.793462	2.3185186	
2007	-0.08733524	1.297644	-0.0454819	10.153546	103.09449	19.27	15.6979531	8.38691	2.2805526	
2008	-0.019170006	1.381024	-0.1886673	8.0252414	64.404499	22.84	10.2350802	8.685141	1.9309764	
2009	-0.025729552	1.389476	-0.0863777	6.3680013	40.551441	18.80	4.71849407	9.965353	0.6418982	
2010	-1	2.714993	0.0837988	5.5751203	31.081966	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	2.645346	6.9978553	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
FLMN					0					
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1997	#DIV/0!	#DIV/0!	#DIV/0!	26.389303	696.39531	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	26.967939	727.26974	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	27.306005	745.61792	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	27.369497	749.08935	7.11	15.4063485	6.327983	3.0917044	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
2010	1.045165723	6.144234	0.9854372	7.8605428	61.788132	24.68	4.69121759	4.233454	0.7663115	
2011	-1	3.147848	0.5351571	2.8014182	7.8479438	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
NBC					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	16.716243	279.43279	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	16.807366	282.48755	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	17.12837	293.38107	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	17.629468	310.79815	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	17.697098	313.18727	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	16.552492	273.985	7.11	15.4063485	6.327983	3.0917044	
2001	0.233708908	0.758143	0.2366108	15.027726	225.83255	7.47	14.2639374	6.346684	3.2282442	
2002	0.331046328	0.886919	0.2674046	14.364251	206.33171	7.21	13.1114045	6.391287	3.3821231	
2003	0.087507731	0.980696	0.2120041	14.37128	206.53368	10.44	13.3391396	6.736821	2.05732	
2004	0.240960271	1.945262	0.1343155	12.873336	165.72279	12.49	14.1402717	7.13008	2.0702113	
2005	0.118151198	1.269253	0.0830616	12.198949	148.81436	17.88	14.9477281	7.561522	2.2131486	
2006	0.016346062	1.06436	0.0244603	10.893741	118.67359	17.51	15.5291734	7.793462	2.3185186	
2007	0.114287056	0.776593	0.0996369	11.232635	126.17208	19.27	15.6979531	8.38691	2.2805526	
2008	0.244694634	0.958229	0.0614961	8.4760145	71.842823	22.84	10.2350802	8.685141	1.9309764	
2009	-1	0.362992	0.065404	5.9688998	35.627764	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	3.6735865	13.495238	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
					0					
					0					
NTC					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	2.1371302	4.5673256	4.84	49.1133121	15.71362	2.9413027	
1996	#DIV/0!	#DIV/0!	#DIV/0!	2.1371185	4.5672756	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	2.1371185	4.5672756	5.52	40.814013	5.965291	3.0951766	
1998	#DIV/0!	#DIV/0!	#DIV/0!	2.1371185	4.5672756	4.09	33.1395427	6.100733	3.1888952	
1999	#DIV/0!	#DIV/0!	#DIV/0!	2.1371185	4.5672756	5.22	18.3776358	6.299982	3.3015577	
2000	#DIV/0!	#DIV/0!	#DIV/0!	2.1371185	4.5672756	7.11	15.4063485	6.327983	3.0917044	
2001	#DIV/0!	#DIV/0!	#DIV/0!	2.1371185	4.5672756	7.47	14.2639374	6.346684	3.2282442	
2002	#DIV/0!	#DIV/0!	#DIV/0!	2.1371185	4.5672756	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	2.1371185	4.5672756	10.44	13.3391396	6.736821	2.05732	
2004	-0.662279464	#DIV/0!	-0.0562264	2.1371185	4.5672756	12.49	14.1402717	7.13008	2.0702113	
2005	0.975523792	#DIV/0!	-0.3745471	2.1371185	4.5672756	17.88	14.9477281	7.561522	2.2131486	
2006	1.169823228	#DIV/0!	0.0597666	2.1922897	4.8061342	17.51	15.5291734	7.793462	2.3185186	
2007	0.065736483	#DIV/0!	0.0196858	2.2967432	5.2750293	19.27	15.6979531	8.38691	2.2805526	
2008	-0.017817094	#DIV/0!	0.0227973	1.6989659	2.8864852	22.84	10.2350802	8.685141	1.9309764	
2009	0.015939474	#DIV/0!	0.0374321	0.6060455	0.3672912	18.80	4.71849407	9.965353	0.6418982	
2010	-1	#DIV/0!	0.0393255	0.2001418	0.0400567	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	0.0568956	0.0032371	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	
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					0					
FOOTWEAR					0					
LENN					0					
1995	#DIV/0!	#DIV/0!	#DIV/0!	1.4810474	2.1935014	4.84	49.1133121	15.71362	2.9413027	

	I/K?	Q?	CF/K?	UM?	UM ² ?	OPN?	UEXR?	UINF?	UINTR?	POL ST
1996	#DIV/0!	#DIV/0!	#DIV/0!	1.5298199	2.3403488	5.10	45.7353322	7.145999	3.0144953	
1997	#DIV/0!	#DIV/0!	#DIV/0!	1.577995	2.4900682	5.52	40.814013	5.965291	3.0951766	
1998	-0.034537942	0.230433	-0.3849094	1.6250742	2.6408662	4.09	33.1395427	6.100733	3.1888952	
1999	-0.032520225	0.185041	-0.1609436	1.6714346	2.7936935	5.22	18.3776358	6.299982	3.3015577	
2000	-0.032232493	0.150848	-0.2235306	1.7066914	2.9127957	7.11	15.4063485	6.327983	3.0917044	
2001	-0.042540823	0.125491	-0.3056466	1.7341999	3.0074493	7.47	14.2639374	6.346684	3.2282442	
2002	-1	0.194583	-0.2024644	1.7516095	3.0681357	7.21	13.1114045	6.391287	3.3821231	
2003	#DIV/0!	#DIV/0!	#DIV/0!	1.7536785	3.0753882	10.44	13.3391396	6.736821	2.05732	
2004	-0.013759366	0.275386	-0.1766482	1.7246251	2.9743317	12.49	14.1402717	7.13008	2.0702113	
2005	-0.022833172	0.330768	-0.2452892	1.6886438	2.8515178	17.88	14.9477281	7.561522	2.2131486	
2006	-0.025296454	0.298156	-0.1123028	1.4770129	2.181567	17.51	15.5291734	7.793462	2.3185186	
2007	2.764931208	0.299619	-0.3011348	1.0617015	1.12721	19.27	15.6979531	8.38691	2.2805526	
2008	0.014525944	0.55187	0.0505931	0.5480047	0.3003091	22.84	10.2350802	8.685141	1.9309764	
2009	-1	0.590528	-0.0884619	0.3343562	0.111794	18.80	4.71849407	9.965353	0.6418982	
2010	#DIV/0!	#DIV/0!	#DIV/0!	0.0600953	0.0036114	24.68	4.69121759	4.233454	0.7663115	
2011	#DIV/0!	#DIV/0!	#DIV/0!	4.957E-15	2.457E-29	29.35	0.55154329	1.979899	0.9687363	
2012	#DIV/0!	#DIV/0!	#DIV/0!		0	27.13	0.98358553	1.449569	4.9992449	

Sources: Authors Construction 2016

- IFS 2013
- CBN Statistical Bulletin 2013