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**EFFECT OF PRICE LEVEL CHANGES ON THE PRICING  
DECISION OF MANUFACTURING COMPANY  
EVIDENCE FROM CHICASON PLC, NNEWI IN  
ANAMBRA STATE**

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**ABSTRACT**

*This is a study of how the price level changes affect the pricing decisions of manufacturing companies. The study focused on ascertaining if price of the competitors from other different companies affect the pricing decision of manufacturing company, the inflation rate if it has negative effect on the pricing decision of the manufacturing companies. The period of inflation rate cover was from 2005 – 2017. The study makes use of secondary data which were analyzed using Ordinary Least Square (OLS) regression model. Also, the Rimco Plc Company was selected as the sample of the study. The instruments used in the collection of data were inflation rate (INFR) and exchange rate (EXCR). Three hypotheses were formulated and tested using regression Model. The outcome of those test confirmed that high rate of inflation due to change in monetary policy in price level has significant impact on the firms. The interest rate affects pricing decision of the manufacturing companies. Even the exchange rate in the currency use to purchase the product has significant impact on pricing decision of manufacturing companies. The recommendations were in a situation of price changes, manufacturing company should consider high rate of inflation due to change in monetary policy affect the pricing decision of manufacturing companies. The interest rate which affects most of the manufacturing companies in their price level of their product and decision. In the situation of general rises in price and increase in the exchange rate of currency, manufacturing companies should consider demand of people concerning their product so that their price level changes and pricing decision will not be affected positively.*

**KEYWORDS:** Price Level Changes, pricing decision, Inflation (INFR), interest rate (INTR), Exchange Rate (EXCR), Ordinary Least Square (OLS)

**1.1 INTRODUCTION**

Companies often change the price of the products in the hope that small reduction in price may lead to a substantial increase in the quantity demanded and consequently a sizable gain in the profit. Whether or not the price reduction may boost the profit depends upon

the price elasticity of demand of the product under consideration. Profit-maximizing optimum price policy depends upon the effect of price elasticity on the marginal revenue and marginal cost. In price level change many factors can result to the such as exchange rate in the currency used in purchase of products,

demand of people concerning the products produced, inflation in the economy, marketing strategies, type and method of pricing used like mark-up pricing, types and method of pricing, going rate pricing etc these above also affect and help to determine the pricing decision of a manufacturing companies.

The increasing changes in inflation level of manufacturing organization make the function of financial manager difficult. He should anticipate the effect of inflation changes on working capital requirement of firms or government sector. One may asked why the changes in attitude? The obvious answer is the high rate of inflation, which was a feature of the UK economy of the period.

Generally, rising inflation will require a firm to maintain higher amount of working capital. Accounting for inflation is approach based on current cost asset valuation with either the operating or financial capital maintenance concept using the nominal pound as the unit of measurement. The current cost basis of assets valuation which includes the control taxation consumption and valuation needs to consider in selection of the nominal pound as the unit of measurement.

Also inflation does not exist as a quantifiable phenomenon independent of the price movement in any specific group of goods and services or of the spending pattern of any specific group of individual or entities and is not a phenomenon capable of independent and objectives measurement affecting all individual and entities in the same way. The rate of inflation will vary far different individuals and entities in the country according to the selection of goods and services which they buy.

Furthermore, effect of inflation will be different for different companies while others may be aggregated. However prices of goods and services are large extent set by manufacturer are influences buy environment variable including government economic policies in effect of a changes in pricing decision. Variable as changes interest rate on business ownership is likely to exist which will force the management of manufacturing companies to make changes in prices? This study will attempt to diagnoses and document these interest rate changes and how they affect pricing decision in manufacturing companies

## 1.2 STATEMENT OF THE PROBLEM

- i. Manufacturing companies suffer from high rate of inflation due to change in monetary policy which leads to increase in the prices of products.
- ii. Companies are also affected due to interest rate which can equal effect the quality and quantity of products by manufacturing company
- iii. Exchange rate in the currency use to purchase the product can affect companies and also lead to increase or decrease in import and export of product.

## 1.3 OBJECTIVE OF THE STUDY

The main objective of this study is to analyze the effect of price level change in pricing decision of manufacturing organization.

Other specific objectives are:

- i. To determine the effect of inflation rate on the pricing decision of manufacturing company.
- ii. To ascertain the effect of interest rate on pricing decision of manufacturing company.
- iii. To ascertain the effect of exchange rate on the pricing decision of manufacturing company.

## 1.4 RESEARCH HYPOTHESES

Ho: The high rate of inflation does not affect the pricing decision of manufacturing companies.

Ho: Interest does not affect the pricing decision of manufacturing companies.

Ho: The exchange rate does not affect the pricing decision of manufacturing companies.

d. Management of an organization may use this information to carrying decision of their firm on annual bases.

## 1.5 SCOPE OF THE STUDY

This study covers the effect of price level change in the pricing decision of a manufacturing Company. Chicason Group LTD Nnewi served as the case study. This Sub-division will prove adequate in achieving the afore - mentioned objectives.

## REVIEW OF RELATED LITERATURE

### 2.1 Conceptual Framework

An interest rate is a fee that you are charged for borrowing money, expressed as a percentage of the total amount of the loan. So if you borrow money, either in a home, car or personal loan, you pay interest on it. If you've got your money put away in a bank, either in a savings account, term deposit or bank account, that more or less amounts to lending the bank your money, and so you will be paid interest as a lender. It's not as simple as just searching for a high or low interest rate when comparing all the products out there on the market. Interest is basically the cost of money. You're paying for the ability to use money you haven't yet accumulated, so interest is an incentive for the bank to lend you money and a premium for the risk they take in lending to you. Charging interest is one of the ways lenders make their profit.

An exchange rate is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in relation to another currency. Exchange rates are determined in the foreign exchange market, which is open to a wide range of different types of buyers and sellers, and where currency trading is continuous: 24 hours a day except weekends, i.e. trading from 20:15GMT on Sunday until 22:00 GMT Friday. The spot exchange rate refers to the current exchange rate. The forward exchange rate refers to an exchange rate that is quoted and traded today but for delivery and payment on a specific future date. Thus, an exchange rate has two components, the domestic currency and a foreign currency, and can be quoted either directly or indirectly.

In economics, inflation is a sustained increase in the price level of goods and services in an economy over a period of time. Blachard (2000), believe that when the price level rises, each unit of currency buys fewer goods and services; consequently, inflation reflects a reduction in the purchasing power per unit of money – a loss of real value in the medium of exchange and unit of

account within the economy. A chief measure of price inflation is the inflation rate, the annualized percentage change in a general price index, usually the consumer price index, over time

Inflation is generally measured in terms of a consumer price index (CPI), which tracks the prices of a basket of core goods and services over time. Viewed another way, this tool measures the "real" — that is, adjusted for inflation — value of earnings over time. It is important to note that the components of the CPI do not change in price at the same rates or even necessarily move the same direction. Inflation affects economies in various positive and negative ways. The negative effects of inflation include an increase in the opportunity cost of holding money, uncertainty over future inflation which may discourage investment and savings, and if inflation were rapid enough, shortages of goods as consumers begin hoarding out of concern that prices will increase in the future. Positive effects include reducing unemployment due to nominal wage rigidity. The term "inflation" originally referred a rise in the general price level caused by an imbalance between the quantity of money and trade needs ((Bryan, 1997).

However, it is common for economists today to use the term "inflation" to refer to a rise in the price level. An increase in the money supply may be called monetary inflation, to distinguish it from rising prices, which may also for clarity be called "price inflation". According to Bryan (1997), economists generally agree that in the long run, inflation is caused by increases in the money supply (Bryan, 1997). Conceptually, inflation refers to the general trend of prices, not changes in any specific price. For example, if people choose to buy more cucumbers than tomatoes, cucumbers consequently become more expensive and tomatoes cheaper. These changes are not related to inflation, they reflect a shift in tastes. Inflation is related to the value of currency itself. When currency was linked with gold, if new gold deposits were found, the price of gold and the value of currency would fall, and consequently prices of all other goods would become higher (Bryan, 1997).

The way in which a consumer facing the usual offer reacts to a fall in price splits naturally into two parts. On the transport axis, the substitution effect is the move from a relatively lower price to a higher price, the substitution effect is the move from the start to the free point, the income effect being the move from the free point to finish<sup>3</sup>. The real point is that the increase in transport for example bought after a fall in price depends on two features of consumer's indifference map (Donald, 1985). It depends, first on how sensitive he is at a given real income to changes in price, the substitution effect that is how great the curvature of an indifference curve (Donald, 1985) is. Secondly, depends on how sensitive he is at a given price to changes in real income, the income effect that is how much more transport he buys as he moves up to the higher indifference curve (Donald, 1985).

### Determinants of Pricing Decision

The essential factors that influence pricing decision can be categorized into two main headings; the internal factors and the external factors. The internal

factors includes; cost of production, channels of distribution and the company objective while the external factors includes; market demand, market competition, macroeconomics trends, and market segment and consumer perceptions. The factors are considered as follows;

#### Internal factors

The internal factors are factors that can be control, determine and process by the organization. These factors are mostly in relation with the organization business level strategy and greatly influenced by the nature of business. The internal factors are:

**Cost of Production:** in any pricing decision, the cost of production is major factor that determine the price. This is the cost incurred by the organization in the production of goods or service. The cost includes the fixed cost and variable cost, the cost is mostly refer to as total cost. The cost of production is largely influence by the supplier cost, macroeconomic trends and the nature of business. In an economy with high inflation rate, the cost of production will rise except where the organization has monopoly of its supply.

**Channels of distribution:** The cost of distribution and the channel of distribution is also a good determinant of pricing policy. It must be considered if the product will be supplied directly to the final consumer or has to pass through the various channels of distribution. For a product that has to pass through the wholesaler, to the retailer and then to the final consumer, the profit of these middle men must be considered, so that the final price set by the retailer will not affect demand negatively. For some product, producer may need to set standard cost to control for any form hyper price setting by the whole seller or the retailer.

**Company's Objectives:** The Company's objective is also another determinant of pricing decision. Some organization set a cost plus pricing. In such case, a percentage is added to the cost of production in order to arrive at the price. The argument here is that, the company's objective is profit maximization and therefore a pricing decision must be that will consider that profit maximization objective. When pricing decisions are made, they must be in line with the overall company objectives, as this is what will inform what the pricing objective really is, so that the pricing decisions made will not be against the company objective.

#### External factors

The external factors are those factors that are not within reach of the organization. They are external because there are many parties that determine and control these factors. The business organization is a party to the external factor and cannot control or determine the aggregate indicators of these factors. The external factor includes;

**Demand:** For a new product, there is need to price such product strategically in such a way that it penetrates the market, even if it will be at par with the total cost, while for a highly demanded product, an increase in price may not really have a high effect on the demand for such products, so is the need for management when making pricing decisions to consider the demand for the product. Some companies who

receive order from customers may decide to reduce their price per unit or increase their discount, when it is noted that demand from a customer is high, and this may be on the other way round, depending on other factors considered by the management.

**Inflation:** This is defined as the continued increase in price over time. Inflation also is ultimately a monetary phenomenon. As a number of empirical studies confirm, prolonged periods of high inflation are typically associated with high monetary growth (see the chart below). While other factors (such as variations in aggregate demand, technological changes or commodity price shocks) can influence price developments over shorter horizons, over time their effects can be offset by some degree of adjustment of monetary policy. In this sense, the longer-term trends of prices or inflation can be controlled by central banks.

**Nature of market competition:** The nature of market competition must also be considered when pricing decision is made. For a business that is in a monopolistic market, competition may not really affect the pricing decision, but a business in the oligopolistic market or a free market, where competition is tense, this has to be considered before price is set. In a situation where the market leader dictates the price and others follow, the price of the market leader must also be considered and in a situation where the price of substitute goods will affect the price of the product, this is very important.

**Macroeconomic trends:** This must also be put into consideration when pricing decisions are made. In an unstable economy, where cost of living increases, without a change in the income of the people, an increase in the price of a product may affect demand for that product, so also when there is an increase in the income of the people, increase in the price of a product may not necessarily affect the demand for that product at that point in time.

**Market segment:** When a producer knows his customers, he will be able to set his prices accurately. The market segment must be carefully identified and the amount they will be willing to pay for the product identified. For the producers of cars, there are different models for different set of people, thus producing varieties for different set of people. There are some products which are mainly for the elites, while some are for the masses.

**Consumer behavior and perception:**

Consumers attitude and perception about the product must be considered, when making pricing decisions. The company should consider if an increase in price will lead to an increase or a decrease in demand, and vice versa.

## 2.2 Theoretical framework

**Price theory:** this theory is concerned with explaining economic activity in terms of the creation and transfer of value, which includes the trade of goods and services between different economic agents (Tellis 1986). According to Friedman (1990), it is the explanation of how relative prices are determined and how prices function to coordinate economic activity. According to Nagle and Holden (1995), a market economy is coordinated through the price system. ... The theory states that the only thing determining tomorrow's

price is today's price. Naive price theory is a perfectly natural way of dealing with prices if you do not understand what determines them (Friedman 1990). The use of this theory is least plausible because prices change.

One must understand the causal relations involved. According to Friedman (1990), although the theory may have errors, the alternative to correct economic theory is not doing without theory (sometimes referred to as just using common sense) but the alternative to correct theory is an incorrect theory.

**Solution Pricing:** Many large companies are acknowledging that the traditional structures and capabilities have to be changed and adjusted on an ongoing basis when entering the markets of solutions. This includes changing the entire company mindset towards customers (Davies, Brady and Hobday, 2006). Studies under the topics of solutions can be thought of as small and emerging research streams (Tapio Salminen, et al., 2014), which occasionally lack coherence (Nordin & Kowalkowski, 2016). Despite this scarceness, we describe some common ground in many of the studies relating to solutions and the subarea of solution pricing.

**Value-based pricing:** Many companies are starting to recognize the down-falls of the traditional pricing strategies, such as cost-plus pricing. The problem with most of the traditional pricing strategies is that they do not reflect market conditions in a good way (Nagle, et al., 2014). Liozu and Hinterhuber (2012) confirm this difference between pricing strategies through a minor case study where companies operating on value-based principles rely on formal market research, scientific pricing and expert recommendations. The experience from companies using other pricing orientations in the case study was that they rather relied on experience and intuition. Consequently, a pricing responsibility shift is occurring from the financial managers to the product managers. This shift is in line with value-based pricing, which is based on the notion of perceived customer value and that sales and marketing surely lies closer to the customer. Unfortunately, this shift may in practice increase the focus on short-time profits and sales objectives rather than the perceived customer value (Nagle, et al., 2014).

**Key Elements for Pricing Decisions:**

Hinterhuber (2004) states that the pricing decisions are best made based on the strategic triangle by Ohmae (1982). The strategic triangle is composed of three components; customers, company and competition. Thus, the pricing decisions should be analyzed on the basis of each of those three components, in order to make informed pricing decisions. The first component, i.e. customers, takes into account the different sources of economic value of a product. The second component, i.e. company, is a means of capturing the internal perspective of the company in regards to the price structure. The third and last component, i.e. competition, is about knowing the trends of competition concerning pricing, product offerings and strategies and the resulting effect on profits.

### 2.3. Empirical Literature Review

Kajisa and Akiyama (2004) examine rice pricing policies in Thailand, Indonesia, and the Philippines from 1960-1990. The findings of this study confirm that price stabilization has been a major policy achievement; it also reveals that stabilization was not necessarily enjoyed or experienced on the study period. The study reveals that political factors such as entry into the GATT, increase in per capita GDP and achievement of rice self-sufficiency are the major determinants of rice pricing policy, but the ways in which these determinants have impacted policy differs among these countries.

Katta and Sethuraman (2005) studied the problem of designing a profit maximizing pricing-scheduling policy for a capacity-constrained firm with a heterogeneous customer base by considering the problem of pricing policy develop the customers arriving at a service facility, with the objective of profit maximizing, when the value of service and time-sensitivity of a customer are his private information. The main conclusion they arrive at is that under certain conditions it might be beneficial to pool customers of different characteristics together and treat them equally; this happens because customers themselves select their service class.

Avlonitis and Indounas (2005) explored the pricing that services companies pursue along with the different pricing methods adopt by 170 companies in 6 different sectors in Nigeria. The data were collected with interview and analyzed strictly using qualitative technique. The study reveal that the pricing method adopted by vast majority of the sample are cost-plus and the pricing is base on market average price and the study also reveals that pricing objectives and pricing method are highly related.

Balaji and Ragavhan (2007) examined the influence of pricing policy on price rigidity of the retail sector in USA from 2005-2017. The company makes use of 10 brand which were analyzed using Anova. The finding shows a significant difference in the pricing strategies that various brands adopt. The study was concluded that brand drives pricing strategy and that differential pricing strategies is not followed by the stores at the individual level. This observation indicates that pricing strategy is not driven by the store level demand and is determined at a more aggregate level.

Cabrales and Martin (2007) examined price determination in pharmaceutical markets using data from countries and thirteen years period from 2005-2017. The study revealed that market power and the quality of the product has a significantly positive impact on prices. The study shows that the U.S. companies prices are not significantly higher than those of countries with similar income levels.

Ros (2010) examine the main determinants of pricing in the Mexican domestic airline sector using 10 airlines. The data were analysed using ordinary least square (OLS) was used for analysis. The results of the study reveals that the existence of at least one low-cost carrier on a route is associated with prices that are approximately 30 percent lower.

Moura and Junior (2010) studies the frequency of price changes from a survey data on Brazilian

companies. 281 Brazilian firms were surveyed for this work in 2007 and the analysis was carried out using OLS regression. They find that wage duration, the degree of competition, product specialization, the elasticity of demand and economic sector dummies mostly explained price change duration. The empirical results do not refute time dependent models since those are consistent with different price durations across firms; however they refute somewhat commonly used macroeconomic modeling for monetary policy evaluation.

Obigbemi (2010) investigate the impact of change in price on the sales turnover of selected SMEs in Ogun and Lagos in Nigeria. A qualitative technique were adopted with 200 respondents. The data were analysed using student t-test was used and the Student t-test. The study revealed that there is a relationship between change in cost of sales and turnover and further suggest that frequent and adequate monitoring of SMEs and that the service of price expert should be employed when making pricing decisions by SMEs.

Breitenfellner, Cuaresma and Keppel (2010) examines some thirty potential determinants of crude oil prices for a thirteen years period which ranges from 2005-2017. The findings of the study suggest that the significance of individual factors varies over time. i.e. no single factor dominates or remain unchanged during the entire period under review.

Volpe (2011) Evaluating the Performance of U.S. Supermarkets by considering Pricing Strategies, Competition from Hypermarkets, and Private Labels. The ordinary least square was used in this study as the method of data analysis. The findings of the researcher is that Performance is significantly improved for stores operating near competitors with similar pricing strategies.

Stevens (2012) presents the dynamic price-setting problem of a firm that cannot observe market conditions for free. The finding of the study is that the firm optimally selects to only infrequently accept policy reviews, and that between the reviews, the firms implements a simple pricing policy that consists of a small set of prices.

Yazdani, Khorsand, Mahdizade and Sharami (2013) assess Pricing Strategies and Goals in Industrial Marketing by define pricing, also the price setting procedure in industrial marketing is expressed, Identifying barriers and factors influencing pricing and pricing strategy. He classified the factors affecting price into internal and external factors and also highlight four adjusting prices policies as follows; geographical pricing, Price discounts and cost deductions, advance pricing and Discriminatory pricing.

Sarumathi (2013) focuses on Economic Concepts in Pricing, the factors determining the E- pricing policies and Strategies where he express that the only element in the marketing mix that produces revenue is price, and that is the aggregate of all the values that customers exchange for the utility that they enjoy from using the product or service. The managerial tasks involved in pricing product include establishing the pricing objectives, identifying the price governing factors, ascertaining their relevance and importance, determining

product value in monetary terms and formulating price policies and strategies and also that the demand and competitive ability of firms are affected by price of the product. The study revealed the factors determining the price of company product and categorizes them into internal factors (The desirable market positioning of the firm, the characteristics of the product, cost of sales, marketing cost and turn around rate of the product etc) and external factors (Bargaining power of the customers, bargaining power of the major suppliers, competitors' pricing policy, government Controls, social considerations etc).

Sije and Oloko (2013) citing Donald (1985) posited that, when the relative price of something goes up the quantity demanded of that thing will go down. It does not mean that the cheaper goods will be demanded nor does it say that changes in commodity prices change what is demanded (Donald, 1985). The income and prices that consumers face limit their choices, but within these limits the exact amounts of goods (or bads) they choose are a matter of taste (Donald, 1985). A consumer's taste for two goods such as a guitar lessons and beer can be described as a hill of utility (Donald, 1985). It is not always true that subsidies to a price or gifts of goods increase the amount consumed (Donald, 1985)

**3.0 METHODOLOGY**

The study used time series data and is predicated on ex-post-facto research design. The study used ex-post-facto because the event has taken place, therefore the data already existed and the study made no attempt to manipulate its nature or value. The data used in carrying out this study are time series data collected between the period 2005- 2017 obtained mainly from secondary sources. Among these are Central Bank of Nigeria (CBN) statistical bulletin (various issues), The National Bureau of Statistic (NBS). The data were collected on annual basis, and the study relies on data from such official sources. The study used a time series data collected between the period covering 2005- 2017. The study used exchange rate, inflation rate, interest rate as explanatory variables and pricing decision proxy return on asset as dependent variable.

Below are the dependent and independent variables and their proxy.

Variable	Definition
Pricing Decision	Return on asset (ROA) (net profit/ total asset)
Exchange rate	Average Rate of naira to USD for each year (EXRATE)
Interest rate	Commercial bank lending rate (INTRATE)
Inflation rate	Average annual inflation rate

**3.1 Model Specification**

The model for the study is premised on the main objective and anchored on the sub-objective. A linear regression model was design to test each of the Null hypotheses. The model used was adopted from the work of Obilor (2013) and adapted to suite, below is the Obilor model.

$$AGDP = f(INT, INFRAT, GOVEX) - 1$$

This model is modified to suit our variables as follows,

$$ROA = f(INTRATE, EXRATE, INFRATE)$$

This can be econometrically expressed as:

$$ROA_t = d_0 + d_1INTRATE_t + d_2EXRATE_t + d_3INFRATE_t + E_t$$

Where:

- ROA = Return on assets
- INTRATE = Interest rate
- EXRATE = Exchange rate
- INFRATE = Inflation rate
- d<sub>0</sub> = Constant
- d<sub>1</sub>, d<sub>2</sub>, and d<sub>3</sub> = are the coefficient of the regression equation
- E = stochastic error term
- t = is year (time series)

**4.0 DATA PRESENTATION AND DATA ANALYSIS**

**Data Presentation**

**4.1 Descriptive Statistics Analysis**

The detailed result of the descriptive statistics is presented in table 2 under the appendix. However, summary of the result is presented below

**Table 4.1 Descriptive statistics.**

	ROA	EXRATE	INFRATE	INTRATE
Mean	0.292808	166.2838	0.115554	23.16462
Maximum	0.910000	295.0000	0.178500	30.60000
Minimum	0.040000	119.0500	0.054000	18.36000
Std. Dev.	0.160338	51.45351	0.035875	3.696403
Jarque-Bera	26.41445	27.10599	2.075828	2.067706
Probability	0.000002	0.000001	0.354193	0.355634
Observations	52	52	52	52

Source: researcher summary of descriptive statistics result using E-view 8

The descriptive statistics result in Table 4.1 shows the mean average for each of the variables, there maximum values, minimum values, and Jarque-Bera (normality test). The result provides some insight

into the nature of the selected listed manufacturing firms that were used in the study. Firstly, it was observed that over the period under review, the sampled firms have average positive pricing decision of (0.2928). The large difference between the maximum (0.9100) and minimum (0.0400) value of pricing decision, indicates that pricing decision among

the manufacturing firms used for the study differs greatly within the period under review, it shows the non homogeneity among the firms used in the study this justifies the use of hausman effect analysis.

The result also reveals that exchange rate for the period of the study is #166.28 to \$1, with the peak at #295 to \$1 and lowest point at #199 to \$1. This large difference between the value of exchange rate over the period can affect the operating cost of manufacturing companies especially those that are import dependent.

Inflation rate ranges between 17 percent and 6 percent within the period of the study. This high fluctuation in the prices of goods can affect the operating cost and consequently the pricing decision of manufacturing companies. Interest rate which represents the cost of finance is 23.16 on average over the period, this indicates that manufacturing companies will pay about 23.16 percent as interest for every #1 debt/loan used in pricing its operations. Since most of the investment in manufacturing companies is

often a long term in nature, with this high level of interest, their desire for the use of leverage. price of product is part of operating cost, since the interest rate will increase the operating cost is likely to affect the cost of producing their product by manufacturing companies. Lastly, the Jarque -Bera (JB) which test for normality or existence of outlier shows that all the variables are normally distributed at 1% level of significance.

**4.2.2 Correlation Analysis.**

The study explored the relationship that exists among the variables, the correlation analysis is also used to check for the presence of multi-colinearity. The result is presented in table below.

**Table 4.2 Pearson Correlation analysis.**

	<i>ROA</i>	<i>EXRATE</i>	<i>INTRATE</i>	<i>INFRATE</i>
<i>ROA</i>	1.000000			
<i>EXRATE</i>	0.115204	1.000000		
<i>INTRATE</i>	0.080415	0.658991	1.000000	
<i>INFRATE</i>	-0.036487	0.509110	0.311975	1.000000

Source: researcher summary of correlation analysis result using E-view 8

The findings from the correlation analysis show that there exists a positive relationship between pricing decision and exchange rate, interest rate. This reveals that increase in the exchange rate and interest rate will lead to increase in the pricing decision of manufacturing companies. This suggests that manufacturing firm built in interest rate and exchange rate cost into their operating cost in determining their pricing decision. Inflation rate has negative relationship with pricing decision of manufacturing firms. This negative relationship could have arises as the result of the firm inability to incorporate the effect of inflation on the pricing decision because of their inability to predict the actual impact. In checking for multi-colinearity, the

study observed that no two variables were perfectly correlated. This reveals the absent of multi-colinearity problem in our variable.

**4.2. Fixed and Random Effect Test**

The summary result of multiple regression analysis is presented below. However, the study takes into cognizance the homogeneity nature of the insurance firms data, hence the need for testing its effect on the data. The study therefore used Hausman effect test to select between fixed and random effect that is best to be adopted in the study. Below is the summary of the Hausman test result, details of the result is presented in table 4.3 under the appendix.

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

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.43550	3	0.3400

Source: researcher summary of regression analysis result using E-view 8

The Hausman test result shows a chi-square value of 3.436 and probability value 0.340, the chi-square value is above 10. Based on the result, the study accept the random effect and reject the fixed effect,

hence we use the random effect to correct the problem of homogeneity in the panel data used for the study and the random effect test result is presented below.

**Regression Analysis**

The result obtained is presented in table below.

Cross-section random effects test equation:

Dependent Variable: ROA

Method: Panel Least Squares

Sample: 2005 2017

Periods included: 13

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.852183	0.185367	5.899923	0.0000
INTRATE	1.256237	0.311927	4.027343	0.0006
EXRATE	0.000986	0.000946	1.042705	0.3027
INFRATE	-0.682705	0.731021	-0.933906	0.3553

#### Effects Specification

##### Cross-section fixed (dummy variables)

R-squared	0.480288	Mean dependent var	0.292808
Adjusted R-squared	0.370993	S.D. dependent var	0.160338
S.E. of regression	0.154541	Akaike info criterion	0.772059
Sum squared resid	1.074738	Schwarz criterion	0.509392
Log likelihood	27.07354	Hannan-Quinn criter.	0.671359
F-statistic	11.64954	Durbin-Watson stat	1.844804
Prob(F-statistic)	0.007976		

Source: researcher's summary of regression analysis from e-view 8

In table above, the study observed from the result the R. squared value of 48% and R-squared (adj) 37% this indicates that inflation rate, exchange rate and interest rate jointly explain about 37% of the variation in pricing decision of the sampled manufacturing firms. Thus about 37% of the pricing decision of manufacturing firms can be attributable to pricing level change. The F-statistics value of 11.6495 and its probability value of 0.0079 shows that model used for the analysis is appropriate and statistically significant at 1% levels. The Durbin Watson statistics result was 1.84, this reveals the absence of autocorrelation in our model.

### Hypotheses Testing

**Hypothesis 1:** interest rate has no significant effect on pricing decision of manufacturing firms in Nigeria. The coefficient value shows that interest rate positive influence on the pricing decision of manufacturing companies. The t-statistics indicates that Interest rate has effect on the pricing decision of manufacturing firms, hence the higher the Interest rate the more positive impact it will have on the pricing decision of manufacturing firms. The probability value reveals that the effect of Interest rate on pricing decision of manufacturing firms is statistically significant at 1% level. Based on the analysis result, the study rejects the null hypothesis which state that Interest rate has no significant effect on pricing decision of manufacturing firms and accept the alternate hypothesis. The study therefore concludes that Interest rate has statistical significant effect on pricing decision of manufacturing firms listed in the Nigeria Stock Exchange.

**Hypothesis 2:** Inflation rate has no significant effect on pricing decision of manufacturing firms in Nigeria. The regression analysis result shows negative coefficient value which indicates that Inflation rate

can negatively influence the pricing decision of manufacturing firms in Nigeria. The t-statistics indicates inflation has effect on pricing decision of manufacturing firms in Nigeria however the probability value of 0.3553 reveals that though Inflation rate has effect on pricing decision of manufacturing firms in Nigeria; the effect is not effective in changing the level of pricing decision of manufacturing firms in Nigeria. Based on the analysis result, the study rejects the null hypothesis and accepts the alternate hypothesis. The study therefore concludes that Inflation rate has no significant effect on pricing decision of manufacturing firms in Nigeria.

**Hypothesis 3:** Exchange rate has no significant effect on pricing decision of manufacturing firms in Nigeria.

The regression analysis result shows a positive coefficient value which shows that Exchange rate positively influence the pricing decision of manufacturing firms in Nigeria. The t-statistics indicates exchange rate has effect on pricing decision of manufacturing firms in Nigeria. The probability value of 0.0006 reveals that the effect of Exchange rate on pricing decision of manufacturing firms in Nigeria is statistically significant at 1% level. Based on the analysis result, the study rejects the null hypothesis and accepts the alternate hypothesis. The study therefore concludes that exchange rate has positive significant effect on pricing decision of manufacturing firms quoted on the Nigeria Stock Exchange.

## 5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

### 5.1 Summary of Findings

The study evaluates the effect of price level change on the pricing decision of manufacturing firms quoted in the Nigerian Stock Exchange. Regression analysis was used to test the effect of the independent

variables on the dependent variable. The analysis result reveals that the selected price level change have positive significant effect on the pricing decision of manufacturing firms to about 37%. Hence, about 37% of the pricing decision of the manufacturing firms in Nigeria can be attributable to the price level change variables. The following are the findings of from the tested hypothesis used in this study.

Interest rate has positive significant affect the pricing decision of manufacturing firms quoted in the Nigeria Stock Exchange.

Exchange rate has positive significant effect on the pricing decision of manufacturing firms quoted in the Nigeria Stock Exchange.

Inflation rate has negative significant effect on the pricing decision of manufacturing firms quoted in the Nigeria Stock Exchange.

## 5.2 Conclusion

Contradicting evidence mark the effect of price level change as to whether it has increased or decreased the pricing decision of manufacturing firms in Nigeria. Despite those effort by previous researchers (which were done in other sectors), the current study on the effect of price level change on pricing decision of manufacturing firms quoted on the Nigeria Stock Exchange is still lacking. Hence, the timely need for this study as focus is more on the audit committee following the fraudulent cases and collapses of some big companies in Nigeria. This study finds statistical significant effect- relationship between some of the price level change and the level of pricing decision of manufacturing firms quoted in the Nigeria Stock Exchange.

## Recommendations

Based on the empirical findings, the study therefore recommends as follows:

The study recommends that management of manufacturing firms should pay more attention to formulating policy that can reduce the impact of inflation because it has the capacity to negatively affecting their pricing decision.

The study recommends that manufacturing firms when setting its operating cost management policy should pay attention to the impact of exchange rate because it has direct impact on their pricing decision.

The study recommends that manufacturing firms when setting its performance enhancing policy should pay attention to the impact of interest rate on their operating cost because it has direct impact on their pricing decision.

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**APPENDIX****Table on Monthly and Annually Inflation Rate Nigeria From 2005 to 2017**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual Average Rate
2017	18.71%	17.78%	17.24%	17.24%	16.25%	16.11%	16.05%	16.01%	15.98%	15.91%	15.90%	15.89	16.59%
2016	9.62%	11.38%	12.78%	13.71%	15.57%	16.48%	17.12%	17.62%	17.85%	18.33%	18.47%	18.56%	15.62%
2015	8.15%	8.38%	8.50%	8.64%	9.02%	9.21%	9.22%	9.34%	9.39%	9.30%	9.37%	9.55%	9.00%
2014	8.04%	7.69%	7.78%	7.87%	7.96%	8.19%	8.34%	8.52%	8.33%	8.07%	7.94%	7.95%	8.06%
2013	9.00%	9.50%	8.60%	9.10%	9.00%	8.40%	8.70%	8.20%	8.00%	7.80%	7.93%	7.94%	8.50%
2012	12.60%	11.90%	12.10%	12.90%	12.70%	12.90%	12.80%	11.70%	11.30%	11.70%	12.30%	12.00%	12.20%
2011	12.10%	11.10%	12.80%	11.30%	12.40%	10.20%	9.40%	9.30%	10.30%	10.50%	10.50%	10.30%	10.80%
2010	14.40%	15.60%	14.80%	15.00%	12.90%	14.10%	13.00%	13.70%	13.60%	13.40%	12.80%	11.80%	13.70%
2009	14.00%	14.60%	14.40%	13.30%	13.20%	11.20%	11.10%	11.00%	10.40%	11.60%	12.40%	13.90%	12.60%
2008	8.60%	8.00%	7.80%	8.20%	9.70%	12.00%	14.00%	12.40%	13.00%	14.70%	14.80%	15.10%	11.50%
2007	8.00%	7.10%	5.20%	4.20%	4.60%	6.40%	4.80%	4.20%	4.10%	4.60%	5.20%	6.60%	5.40%
2006	10.70%	10.80%	12.00%	12.60%	10.50%	8.50%	3.00%	3.70%	6.30%	6.10%	7.80%	8.50%	8.40%
2005	9.80%	10.90%	16.30%	17.90%	16.80%	18.60%	26.10%	28.20%	24.30%	18.60%	15.10%	11.50%	17.85%