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Inflationary Trend in Basic Amenities in Ibadan Oyo State, Nigeria using Price Indices

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Abstract

Trend of inflation was studied using price indices gotten from market survey conducted on the prices of food, clothes and building materials collected from major markets in Ibadan, Oyo state, Nigeria in 2004 and 2014, 2004 being the base year. The price indices used were Laspeyres', Paache's, Fisher's Ideal (FI) and Dorbey's and Bowley's (DB) with emphasis on Fisher's and DB because of their advantages over others. A well-structured questionnaire was used to collect data on prices of food, clothes and building materials in these markets in 2004 and 2014. The results showed an increase between 40.27 and 460.26% increase in the prices of food items; an increase between 13.93 and 84.04% in the price of food items (provisions) except custard with a reduction of 15%; an increase between 11.2 and 100% in prices of cloths except ankara with less than 8% reduction in price and an increase between 5.9 and 69.7% in the price of building materials. Since price change affects planning, especially when citizen are face with stable income, efforts must be made by relevant authorities to control and stabilize the prices of these commodities.

Keywords: Inflation, Basic amenities, Market survey, Price indices, Ibadan

1. Introduction

The word inflation rings a bell in the market economics of the world. It is a monster that threatens all economics because of its undesirable effects Imobighe (2012) and Adenuga, et al; (2012). Even though some evidence suggests that moderate inflation helps in economics growth, the overall weight of evidence so far clearly indicated that inflation is inimical to growth Bawa and Abdullahi (2012); and Omotosho and Doguwa (2013). The problem of inflation surely is not a new phenomenon. It has been a major problem in Nigeria over the years. Inflation is defined as a generalized increase in the level of price sustained over a long period in an economy Lipsey and Chrystal (1995). According to Umaru and Zubairu, (2012) the concept of inflation can be defined as a persistence rise in the general price level of broad spectrum of goods and services in a country over a long period of time. They state that inflation has been intrinsically linked to money, as captured by the often heard maxim "inflation is too much money chasing too few goods". Inflation is a household word in many market oriented economics. After an appreciable economic performance in the early 1970s, the Nigeria economy witnessed some anxious moment in the late 1970s to mid1980s. Severe pressures built up in the economy mainly because of the expansionary fiscal policy of the federal government during these years. This was accompanied by rapid growth in the domestic money supply, exacerbated by the monetization of the earnings from oil (Kumapayi, et al;2012) and high monetary expansion as the huge government deficit was financed largely by the Central Bank Of Nigeria. This was exacerbated by the transfer of government sector deposits to the banks and the resultant increase in their free reserves with adverse consequences on the general price level. The inflationary pressure was further aggravated by the high demand for imports of both intermediate inputs and consumer goods due to over valuation of the naira which made imports relatively cheaper than locally manufactured goods.

One of the major causes of inflation in Nigeria has been the various government policies to stimulate a fast rate of economic growth and development since independence. In recent years, however, specific policy like structural adjustment programme, external debt policies, policies on subsidies on petroleum product and fertilizer, policies of privatization and commercialization, policies on trade liberalization are responsible for the inflationary trend in the economy. Before the structural adjustment, inflation in Nigeria was caused primarily by rising in world export price and falling output. Thereafter, domestic or internal causes like increase in government expenditures, rising domestic credit creation and supply bottlenecks such as shortage of raw materials and spares parts had worsened the situation. There is need therefore, for monetary policy reform, exchange rate reform, effective price and wage policy, and fiscal policy reform, to solve the problem of inflation in Nigeria.

Lack of adequate and timely data on socio economic variables for the purpose of effective planning and development in the country has made government to use various policies which inadvertently cause inflation in the society. Various interventions by government have affected the prices of building materials in the past till present time. Ibadan, the capital of Oyo State was targeted for this study being the second largest city in Africa Shangodoyin et al. (2006) and the prices collected from various markets in this city and inferences made could be used for generalization of what is obtainable in other cities. Shelter, a component of basic amenities will always receive attention by the populace. Therefore, this study is on inflationary trend of building material using price indices.

2. Literature Review

Historically, the first index was constructed in 1764 to compare the Italian price index in 1750 with the price level in 1500. A consumer price index (CPI) measures changes in the price level of a market basket of consumer goods and services purchased by households. The CPI in the United States is defined by the Bureau of Labor Statistics as "a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services."

The consumer price index is a statistical estimate constructed using the prices of a sample of representative items whose prices are collected periodically. Sub-indexes and sub-sub-indexes are computed for different categories and sub-categories of goods and services, being combined to produce the overall index with weights reflecting their shares in the total of the consumer expenditures covered by the index. It is one of several price indices calculated by most national statistical agencies. The annual percentage change in a CPI is used as a measure of inflation. A CPI can be used to index (i.e., adjust for the effect of inflation) the real value of wages, salaries, pensions, for regulating prices and for deflating monetary magnitudes to show changes in real values. In most countries, the CPI is, along with the population census and the USA National Income and Product Accounts, one of the most closely watched national economic statistics.

Two basic types of data are needed to construct the CPI: price data and weighting data. The price data are collected for a sample of goods and services from a sample of sales outlets in a sample of locations for a sample of times. The weighting data are estimates of the shares of the different types of expenditure in the total expenditure covered by the index. These weights are usually based upon expenditure data obtained from expenditure surveys for a sample of households or upon estimates of the composition of consumption expenditure in the National Income and Product Accounts. Although some of the sampling of items for price collection is done using a sampling frame and probabilistic sampling methods, many items and outlets are chosen in a commonsense way (purposive sampling) that does not permit estimation of confidence intervals. Therefore, the sampling variance cannot be calculated. In any case, a single estimate is required in most of the purposes for which the index is used.

The index is usually computed monthly, or quarterly in some countries, as a weighted average of sub-indices for different components of consumer expenditure, such as food, housing, clothing, each of which is in turn a weighted average of sub-sub-indices. At the most detailed level, the elementary aggregate level, (for example, men's shirts sold in department stores in San Francisco), detailed weighting information is unavailable, so indices are computed using an un-weighted arithmetic or geometric mean of the prices of the sampled product offers. (However, the growing use of scanner data is gradually making weighting information available even at the most detailed level.) These indices compare prices each month with prices in the price-reference month. The weights used to combine them into the higher-level aggregates and then into the overall index, relate to the estimated expenditures during a preceding whole year of the consumers covered by the index on the products within its scope in the area covered. Thus the index is a fixed-weight index, but rarely a true Laspeyres index, since the weight-reference period of a year and the price-reference period, usually a more recent single month, do not coincide. It takes time to assemble and process the information used for weighting which, in addition to household expenditure surveys, may include trade and tax data.

Ideally, the weights would relate to the composition of expenditure during the time between the price-reference month and the current month. There is a large technical economics literature on index formulae which would approximate this and which can be shown to approximate what economic theorists call a true cost of living index. Such an index would show how consumer expenditure would have to move to compensate for price changes so as to allow consumers to maintain a constant standard of living. Approximations can only be computed retrospectively, whereas the index has to appear monthly and, preferably, quite soon. Nevertheless, in some countries, notably in the United States and Sweden, the philosophy of the index is that it is inspired by and

approximates the notion of a true cost of living (constant utility) index, whereas in most of Europe it is regarded more pragmatically.

The coverage of the index may be limited. Consumers' expenditure abroad is usually excluded; visitors' expenditure within the country may be excluded in principle if not in practice; the rural population may or may not be included; certain groups such as the very rich or the very poor may be excluded. Saving and investment are always excluded, though the prices paid for financial services provided by financial intermediaries may be included along with insurance.

The index reference period, usually called the base year, often differs both from the weight-reference period and the price reference period. This is just a matter of rescaling the whole time
series to make the value for the index reference-period equal to 100. Annually revised weights are a desirable but expensive feature of an index, for the older the weights the greater is the divergence between the current expenditure pattern and that of the weight reference-period.

Ideally, in computing an index, the weights would represent current annual expenditure patterns. In practice they necessarily reflect past using the most recent data available or, if they are not of high quality, some average of the data for more than one previous year. Some countries have used a three-year average in recognition of the fact that household survey estimates are of poor quality. In some cases some of the data sources used may not be available annually, in which case some of the weights for lower level aggregates within higher level aggregates are based on older data than the higher level weights.

Infrequent reweighing saves costs for the national statistical office but delays the introduction into the index of new types of expenditure. For example, subscriptions for Internet Service entered index compilation with a considerable time lag in some countries, and account could be taken of digital camera prices between re-weightings only by including some digital cameras in the same elementary aggregate as film cameras.Index numbers are today one of the most widely used statistical devices. They are used to take the pulse of economy and they are used as indicators of inflation or deflation tendencies.

In the United States, several different consumer price indices are routinely computed by the Bureau of Labor Statistics (BLS). These include the CPI-U (for all urban consumers), CPI-W (for Urban Wage Earners and Clerical Workers), CPI-E (for the elderly), and C-CPI-U (chained CPI for all urban consumers). These are all built in two stages. First, the BLS collects data to estimate 8,018 separate item-area indices reflecting the prices of 211 categories of consumption items in 38 geographical areas. In the second stage, weighted averages are computed of these 8,018 item-area indices. The different indices differ only in the weights applied to the different 8,018 item-area indices. The weights for CPI-U and CPI-W are held constant for 24 months, changing in January of even-numbered years. The weights for C-CPI-U are updated each month to reflecting changes in consumption patterns in the last month. Thus, if people on average eat more chicken and less beef or more apples and fewer oranges than the previous month, that change would be reflected in next month's C-CPI-U. However, it would not be reflected in CPI.

U and CPI-W until January of the next even-numbered year. This allows the BLS to compute consumer price indices for each of the designated 38 geographical areas and for aggregates like the Midwest.
In January of each year, Social Security recipients receive a cost of living adjustment (COLA) "to ensure that the purchasing power of Social Security and Supplemental Security Income (SSI) benefits is not eroded by inflation. It is based on the percentage increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W)". The use of CPI-W conflicts with this purpose, because the elderly consume substantially more health care goods and services than younger people. In recent years, inflation in health care has substantially exceeded inflation in the rest of the economy. Since the weight on health care in CPI-W is much less than the consumption patterns of the elderly, this COLA does not adequately compensate them for the real increases in the costs of the items they buy. The BLS does track a consumer price index for the elderly (CPI-E). It is not used, in part because the social security trust fund is forecasted to run out of money in roughly 40 years, and using the CPI-E instead of CPI-W would shorten that by roughly 5 years. The way in which owner-occupied dwellings should be dealt with in a CPI has been, and remains, a subject of heated controversy in many countries. Various approaches have been considered, each with their advantages and disadvantages.
However, the National Active and Retired Federal Employees Associations said that the chained CPI does not account for senior's citizens' health care costs. Robert Reich, former United States Secretary of Labor under President Clinton, noted that typical seniors spend between 20 and 40 percent of their income on health care, far more than most Americans. "Besides, Social Security isn't in serious trouble. The Social Security trust fund is

flush for at least two decades. If we want to ensure it's there beyond that, there's an easy fix –just lift the ceiling on income subject to Social Security taxes, which is now $113,700."

Replacing the current cost-of-living adjustment calculation with the chained CPI was considered, but not adopted, as part of a deficit-reduction proposal to avert the sequestration cuts, or fiscal cliff, in January 2013, but President Obama included it in his April 2014 budget proposal.

The index-number problem is typically a problem of aggregation of changes in heterogeneous elements. Mathematically, it consists in reducing the relative change of the elements of a vector into changes in one single numerical value, a scalar. In his famous *Econometrica* survey of general economic theory dedicated to the problem of index numbers, Ragnar Frisch (1936, p. 1) described it in these terms: "The index-number problem arises whenever we want a quantitative expression for a *complex* that is made up of individual measurements for which non common *physical* unit exists. The desire to unite such measurements and the fact that this cannot be done by using physical or technical principles of comparison only, constitute the essence of the index-number problem and all the difficulties center here". In economics, the solution of this problem is necessary in every decomposition of changes of total nominal values into meaningful aggregate price and quantity components.

The national accountants are asked to provide a split of the changes of nominal economic aggregates into a deflator and a volume component. Similarly, monitoring monetary policies usually entails a decomposition of the index of money supply into an inflation index and a volume representing the purchasing power of circulating money. At firm level, changes in nominal profits can be accounted for by decomposing them into a productivity component (a volume index) and market price conditions (a deflator or price index). It turns out that this is possible only under very restrictive conditions. In the general case, every attempt of forcing the application of index number formulas is doomed to yield misleading results (see, *e.g*., McCusker, 2001, Derks, 2004, Officer and Williamson, 2006 on intertemporal comparisons of the purchasing power of money and Leontief, 1936 and Samuelson, 1947, p. 162, who warned us against "the tendency to attach significance to the numerical value of the index computed").

Even when the aggregation conditions are not rejected on the basis of the observed data, there still remains a certain degree of uncertainty regarding the point estimate of the index number. Following the truly constructive method established by Afriat (1981), we can bypass this uncertainty by reverting the problem and asking: (*i*) whether the available data can be rationalized by well-behaved "true" index functions, (*ii*) if yes, what are the upper and lower bounds of the region containing the numerical values of possible index functions? (*iii*) if the data cannot be rationalized by well behaved index functions, then either the data are not generated by a rational behaviour (and a correction for inefficiency may be attempted), or else the data are generated within a different set of variables to be considered in an alternative or extended accounting framework.

Since well-behaved "true" index functions respect, by construction, all Fisher's tests (see Samuelson and Swamy, 1974), also the reconstructed upper and lower bounds of the set of possible values of the "true" index respect those tests, and so does a geometric mean of those bounds, which may be required for practical needs of point estimation. This solution is purely constructive and is obtainable irrespective of the actual existence or non-existence of the underlying utility of production functions Carlo Milana (2009).

3. Materials and Methods

3.1 Scope and Coverage

The data for this study was collected from market survey conducted in 2004 and 2014 using 2004 as the base year. This paper reports inflationary trend of basic amenities in Ibadan, Oyo State, Nigeria. Major markets namely: Oja-Oba, Agbeni, New Gbaki and Iwo road were used for this study. It focuses on consumer price index and provides information pertaining to prices and quantities in food items, clothing and building materials. The food items considered are rice, beans, corn, guinea corn, groundnut, garri, yam, yam flour, flour, vegetable oil, palm oil, onions, egusi (melon), pepper, locust bean, butter, custard, golden morn, spaghetti, salt, noodles, oat, sugar, beverages, maggi, tyme, white pepper; clothing are ankara, lace, guinea and kampala while building materials are iron roofing sheet, ceiling asbestos, common cement, water closet, bath, wash hand basin, pipes, sink and tanks.

3.2 Price Indices

No clear consensus has emerged on who created the first price index. The earliest reported research in this area came from Welshman Rice Vaughan who examined price level change in his 1675 book: A Discourse of Coin

and Coinage. Vaughan wanted to separate the inflationary impact of the influx of precious metals brought by Spain from the New World from the effect due to currency debasement. While Vaughan can be considered a forerunner of price index research, his analysis did not actually involve calculating an index Chance (1966). In 1707 Englishman William Fleetwood created perhaps the first true price index Diewert (1993). There is several numbers of formulae that have been derived for constructing index numbers. Basically, they all fall into two categories namely: un-weighted indices and weighted indices. Four methods however were employed for this study. They are: Laspeyres', Paasche's, Fisher's Ideal and Dorbey's and Bowley's methods with more emphasis on Fisher's Ideal and Dorbey's and Bowley's methods. The two most basic formulae used to calculate price indices are the Paasche's index (after the German economist Hermann Paasche) and the Laspeyres' index (after the German economist Etienne Laspeyres). The Paasche's index is computed as

$$\frac{\sum P_n Q_n}{\sum P_0 Q_n} \times 100 \tag{1}$$

while the Laspeyres' index devised by Laspeyres in year 1871 is computed as

$$\frac{\sum P_n Q_0}{\sum P_0 Q_0} \times 100 \tag{2}$$

where P is the relative index of the price levels in two periods and the only difference in the formulas is that the former uses period n quantities, whereas the latter uses base period (period 0) quantities. The Laspeyres' index tends to overstate inflation (in a cost of living framework), while the Paasche's index tends to understate it, because the indices do not account for the fact that consumers typically react to price changes by changing the quantities that they buy.

The Fisher's index (after the American economist Irving Fisher), is calculated as the geometric mean of Laspeyres' and Paasche's indices numbers that tries to overcome the problems of under and over estimation. It is given as

$$\sqrt{\frac{\sum P_n Q_0}{\sum P_0 Q_0} \times \frac{\sum P_n Q_n}{\sum P_0 Q_n}} \times 100 \tag{3}$$

Fisher's index is also known as the "ideal" price index McCulloch (1982).

Dorbey's and Bowley's (DB) price index number is given by the arithmetic mean of the Laspeyres' and Paasche's index numbers which also tries to overcome the problems of under and overstatement by using the arithmetic means of the quantities Bowley (1928). It is given as

$$\frac{\left(\frac{\sum P_n Q_0}{\sum P_0 Q_0} \times 100\right) + \left(\frac{\sum P_n Q_n}{\sum P_0 Q_n} \times 100\right)}{2} \tag{4}$$

3. Results and discussion

Table 1: General Prices of Food Items in Oja-Oba Market, Ibadan in Naira

SN	Commodity	Brand	P_n	P_o	Q_n	Q_o	P_nQ_o	P_oQ_o	P_nQ_n	P_oQ_n
1	Rice	PGS	8000	4800	50	20	160000	96000	400000	240000
		Haano	8000	4400	40	20	160000	88000	320000	176000
		Super	7800	4300	25	15	117000	64500	195000	107500
		Eagle	8000	3900	35	15	120000	58500	280000	136500
		African								
	Total		31800	17400			557000	307000	1195000	660000
2	Beans	Drum	23000	4400	15	1	23000	4400	345000	66000
		Olo	19200	3700	5	1	19200	3700	96000	18500
		Oloyin	14500	4600	15	1	14500	4600	217500	69000
		Sokoto	13500	3350	10	1	13500	3350	135000	33500
	Total		70200	16050			70200	16050	793500	187000
3	Corn	Solo	5500	3500	1	1	5500	3500	5500	3500
		White	7000	4000	2	1	7000	4000	14000	8000
		Yellow	7800	5100	2	1	7800	5100	15600	10200
		Popcorn	7500	6000	3	1	8500	6000	25500	18000
	Total		28800	18600			28800	18600	60600	39700
4	Guinea Corn	Red	6600	2500	2	2	13200	5000	13200	5000
		White	6700	3000	2	1	6700	3000	13400	6000
	Total		13300	5500			19900	8000	26600	11000
5	Groundnut	White	20200	10000	2	1	20200	10000	40400	20000
	Total		20200	10000			20200	10000	40400	20000
6	Garri	Egba	12600	3500	8	2	25200	7000	100800	28000
		Oyo	8200	2400	5	2	16400	4800	41000	12000
		Ijebu	13300	3800	5	2	26600	7600	66500	19000
		Yellow	6000	3400	5	1	6000	3400	30000	17000
	Total		40100	13100			74200	22800	238300	76000
7	Yam	Abuja	25000	5000	10	15	375000	75000	250000	50000
		Local	18000	4500	15	20	360000	90000	270000	67500
	Total		43000	9500			735000	165000	520000	117500
8	Yam Flour	Gbaroro	38000	9000	5	3	114000	27000	190000	45000
		Kayomu	35000	9000	4	2	70000	18000	140000	36000
	Total		73000	18000			184000	45000	330000	81000

Table 1 Continued: General Prices of Food Items in Oja-Oba Market

SN	Commodity	Brand	P_n	P_o	Q_n	Q_o	P_nQ_o	P_oQ_o	P_nQ_n	P_oQ_n
9	Cassava Flour	Ikare	8000	3000	2	1	8000	3000	16000	6000
		Ibarapa	7500	2400	3	2	15000	4800	22500	7200
	Total		15500	5400			23000	7800	38500	13200
10	Flour	Eagle	6500	2900	3	1	6500	2900	19500	8700
		Golden	6800	2900	3	2	13600	5800	20400	8700
		Diamond	6500	2900	2	2	13000	5800	13000	5800
		Lister	6500	2900	2	1	6500	2900	13000	5800
	Total		26300	11600			39600	17400	65900	29000
11	Vegetable Oil	Imported	6000	4200	8	5	30000	21000	48000	33600
		Local	5200	3800	7	4	20800	15200	36400	26600
	Total		11200	8000			50800	36200	84400	60200
12	Palm Oil		5200	2300	10	6	31200	13800	52000	23000
	Total		5200	2300			31200	13800	52000	23000
13	Onions	Wet	13500	3000	20	10	135000	30000	270000	60000
		Dry	25000	3700	15	8	200000	29600	375000	55500
	Total		38500	6700			335000	59600	645000	115500
14	Egusi	Big	56000	30000	4	2	112000	60000	224000	120000
		Medium	27000	25000	6	2	54000	50000	162000	150000
		Small	26000	20000	3	2	52000	40000	78000	60000
	Total		109000	75000			218000	150000	464000	330000
15	Pepper	Tomatoes	6000	1400	7	10	60000	14000	42000	9800
		Rodo	5000	3200	6	5	25000	16000	30000	19200
		Bawa	6500	2500	6	12	78000	30000	39000	15000
		Dry Pepper	5000	3500	3	3	15000	10500	15000	10500
	Total		22500	10600			178000	70500	126000	54500
16	Locust Bean	Dry	17000	5000	4	2	34000	10000	68000	20000
	Total		17000	5000			3400	10000	68000	20000
	Grand Total						2598900	957750	4748200	1837600

Table 2: Average Commodity Prices in Oja-Oba Market in Naira

SN	Commodity	P_o (2004)	P_n (2014)
1	Rice	4350	7950
2	Beans	4012.5	17550
3	Corn	4650	7200
4	Guinea Corn	2750	6650
5	Groundnut	10000	20200
6	Garri	3275	10025
7	Yam	4750	21500
8	Yam Flour	9000	36500
9	Cassava Flour	2700	7750
10	Flour	2900	6575
11	Vegetable Oil	4000	5600
12	Palm Oil	2300	5200
13	Onions	3350	19250
14	Egusi	25000	36333.33
15	Pepper	2650	5625
16	Locust Beans	5000	17000

Table 2 compared the average base prices of different food commodities to their respective average current prices in Oja-Oba market. The prices are measured in Naira. There are variations in prices of these commodities between 2004 and 2014. Price changes are noticeable in these commodities. The chart below represents the base and the current price of food items. This comparison shows clearly how the prices of these food commodities have increased during this time period.

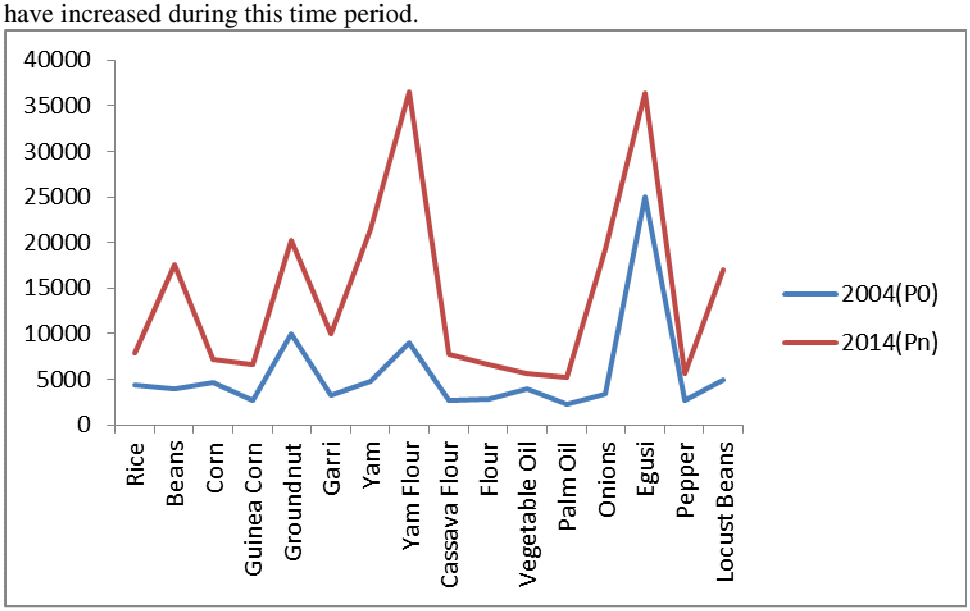

Figure 1: Chart showing average prices of base and current prices in Naira

Table 3: Commodity Price Indices for Oja-Oba Market

S/N	Commodity	Lasperey's	Paasche's	Fisher's	DBI
1	Rice	181.43	181.06	181.25	181.25
2	Beans	437.38	424.33	430.81	430.86
3	Corn	154.84	152.65	153.74	153.74
4	Guinea Corn	248.75	241.82	245.26	245.28
5	Groundnut	202	202	202	202
6	Garri	325.44	313.55	319.44	319.50
7	Yam	445.46	442.55	444	444
8	Yam Flour	408.89	407.41	408.15	408.15
9	Cassava Flour	294.87	291.67	293.27	293.27
10	Flour	227.59	227.24	227.41	227.41
11	Vegetable Oil	140.33	140.20	140.27	140.27
12	Palm Oil	226.09	226.09	226.09	226.09
13	Onions	562.08	558.44	560.29	560.26
14	Egusi	145.33	140.61	142.95	142.97
15	Pepper	252.48	231.19	241.60	241.84
16	Locust Beans	340	340	340	340

Table 3 showed the results obtained by using Lasperey's, Paasche's Fisher and Dorbey's and Bowley's (DB) indices for calculating the price index of individual food commodities in Oja-Oba market. This was done by taking the averages of the prices of each commodity brand as well as the average of their respective quantities. From table 3, we observed using Dorbey's and Bowley's (DB) price index, an increase between 40.27 and 460.26% in the prices of food items.

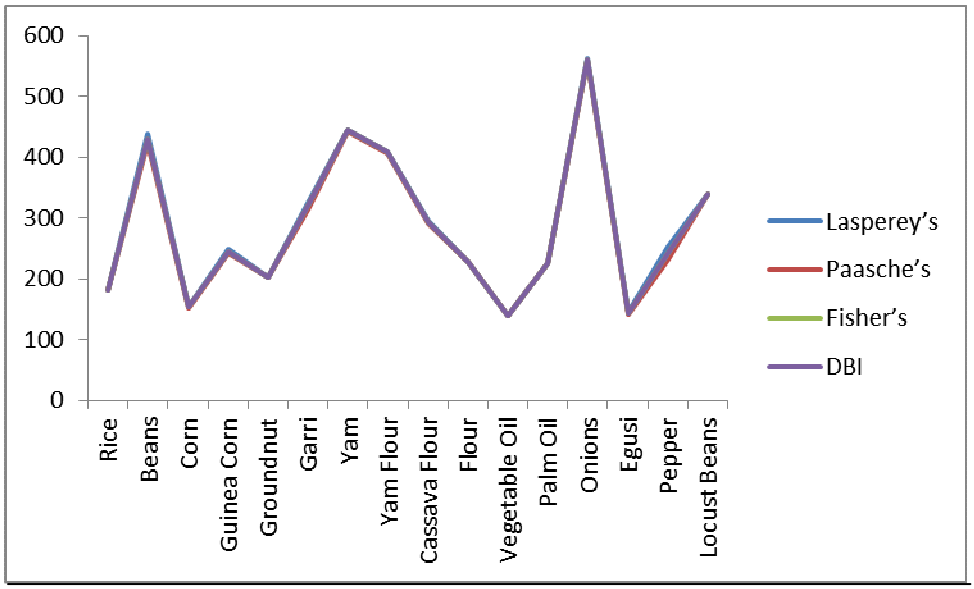

Figure 2: Chart showing Price Indices of Food Items in Oja-Oba

Table 4: General Prices of Provisions in Agbeni Market

SN	Commodity	Brand	P_n	P_o	Q_n	Q_o	P_nQ_o	P_oQ_o	P_nQ_n	P_oQ_n
1	Butter	200g	4000	3000	3	1	4000	3000	12000	9000
		450g	5500	4300	3	1	5500	4300	16500	12900
	Total		9500	7300			9500	7300	28500	21900
2	Custard	500g	850	950	6	1	850	950	5100	5700
		2kg	1500	1800	3	2	3000	3600	4500	5400
	Total		2350	2750			3850	4550	9600	11100
3	Golden Morn	Medium	7000	2000	20	7	49000	14000	140000	40000
		Big	7700	2100	15	7	53900	14700	115500	31500
	Total		14700	4100			102900	28700	255500	71500
4	Spaghetti	Golden Penny	2020	1100	10	3	6060	3300	20200	11000
		Dangote	2000	1100	15	3	6000	3300	30000	16500
	Total		4020	2200			12060	6600	50200	27500
5	Salt	Mr. Chef(1kg)	1400	1000	5	6	8400	6000	7000	5000
		500g	1300	1000	6	6	7800	6000	7800	6000
	Total		2700	2000			16200	12000	14800	11000
6	Noodles	Small	1250	950	35	15	18750	14250	43750	33250
	Total		1250	950			18750	14250	43750	33250
7	Macaroni	Dangote	2000	1250	7	2	4000	2500	14000	8750
		Golden Penny	2200	1250	5	2	4400	2500	11000	6250
	Total		4200	2500			8400	5000	25000	15000
8	Oat	Quaker	4000	2000	8	7	28000	14000	32000	16000
		Good Morning	2500	2000	5	4	10000	8000	12500	10000
	Total		6500	4000			38000	22000	44500	26000
9	Sugar	Cube	3000	3000	5	2	6000	6000	15000	15000
		Granulated	4000	3000	3	2	8000	6000	12000	9000
	Total		7000	6000			14000	12000	27000	24000

Table 4 Continued: General Prices of Provisions in Agbeni Market

SN	Commodity	Brand	P_n	P_o	Q_n	Q_o	P_nQ_o	P_oQ_o	P_nQ_n	P_oQ_n
10	Milk(Evaporated)	Coast	10000	7670	3	1	10000	7670	30000	23010
		Peak	11000	7770	5	2	22000	15540	55000	38850
		3 Crowns	10000	7000	4	6	60000	42000	40000	28000
	Total		31000	22440			92000	65210	125000	89860
11	Beverage	Milo(450g)	5700	3400	6	3	17100	10200	34200	20400
		Milo(900g)	5500	3350	5	2	11000	6700	27500	16750
		Bournvita450g	5400	3300	5	2	10800	6600	27000	16500
		Bournvita900g	5200	3250	4	4	20800	13000	20800	13000
	Total		21800	13300			59700	36500	109500	66650
12	Milk(Powdered)	Peak	7000	5300	2	2	14000	10600	14000	10600
		Coast	6500	4900	3	2	13000	9800	19500	14700
		3 Crowns	6300	4700	2	4	25200	18800	12600	9400
	Total		19800	14900			52200	39200	46100	34700
13	Maggi	Royco	4500	3400	10	5	22500	17000	45000	34000
		Chicken	5300	4400	15	6	31800	26400	79500	66000
		Knorr	5000	3700	15	10	50000	37000	75000	55500
	Total		14800	11500			104300	80400	199500	155500
14	Thyme	Lion	9600	8000	6	6	57600	48000	57600	48000
		Ducros	12000	11000	5	6	72000	66000	60000	55500
	Total		21600	19000			129600	114000	117600	103000
15	Curry	Lion	9600	8000	6	7	67200	56000	57600	48000
		Ducros	12000	11000	5	6	72000	66000	60000	55000
	Total		21600	19000			139200	112000	117600	103000
16	White Pepper	Lion	5000	3000	2	2	10000	6000	10000	6000
		Ducros	5500	2800	3	3	16500	8400	16500	8400
	Total		10500	5800			26500	14400	26500	14400
	Grand Total						827160	584110	1240650	808360

Table 4 represents the general prices of provisions in Agbeni market as well their respective average quantities sold on a daily basis.

Table 5: Average Commodity Prices in Agbeni Market

SN	Commodity	P_o (2004)	P_n (2014)
1	Butter	3650	4750
2	Custard	1375	1175
3	Golden Morn	2050	7350
4	Spaghetti	1100	2010
5	Salt	1000	1350
6	Noodles	950	1250
7	Macaroni	1250	2100
8	Oat	2000	3250
9	Sugar	3000	3500
10	Milk (Evaporated)	7480	10333.33
11	Beverage	3325	5450
12	Milk (Powdered)	4966.67	6600
13	Maggi	1833.33	4933.33
14	Thyme	9000	10800
15	Curry	9000	10800
16	White Pepper	2900	5250

Table 5 showed the average of prices food items (provisions) in Agbeni market in 2004 and 2014 measured in Naira. There are variations in prices of these commodities between 2004 and 2014. Price changes are noticeable in these commodities. The chart below represents the base and the current price of food items (provisions).

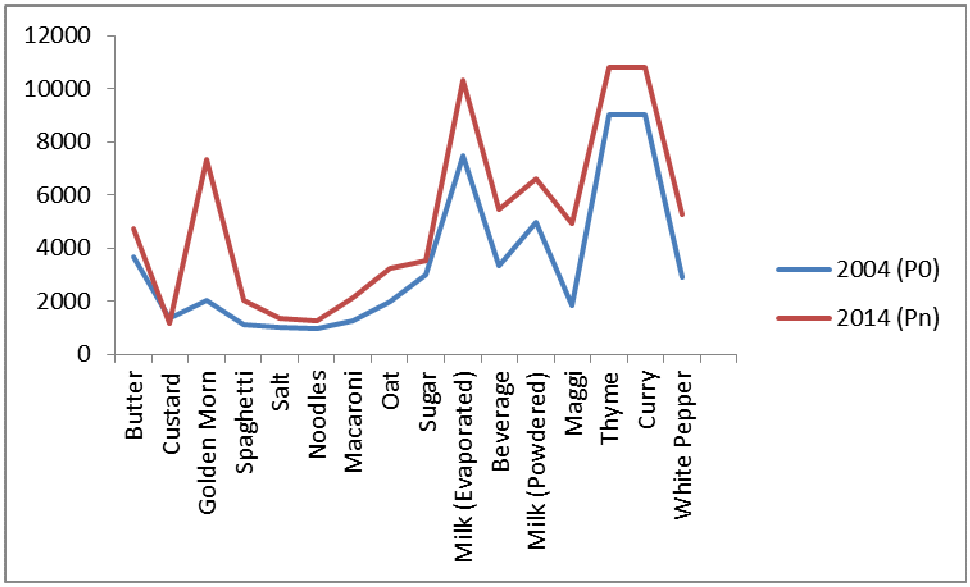

Figure 3: Chart showing Average Base and Current Prices of Provisions

Table 6: Commodity Price Indices in Agbeni Market

SN	Commodity	Lasperey's	Paasche's	Fisher's	DB
1	Butter	130.14	130.14	130.14	130.14
2	Custard	84.62	86.49	85.55	85.55
3	Golden Morn	358.54	357.34	357.94	357.94
4	Spaghetti	182.73	182.55	182.64	182.64
5	Salt	135	134.55	134.77	134.77
6	Noodles	126.32	126.32	126.32	126.32
7	Macaroni	168	166.67	167.33	167.33
8	Oat	172.73	171.15	171.94	171.94
9	Sugar	116.67	112.50	114.56	114.58
10	Milk (Evaporated)	141.08	139.11	140.09	140.09
11	Beverage	163.56	164.29	163.93	163.93
12	Milk (Powdered)	133.16	132.85	133.01	133.01
13	Maggi	129.73	128.30	129.01	129.01
14	Thyme	113.68	114.18	113.93	113.93
15	Curry	114.10	114.18	114.14	114.14
16	White Pepper	184.03	184.03	184.03	184.03

Table 6 showed the result obtained by using Lasperey's, Paasche's, Fisher's, and Dorbey's and Bowley's (DB) for calculating the price indices of provisions in Agbeni market. This was done by taking the averages of the prices of each commodity brand as well as the average of their respective quantities. From table 6, we observed using Dorbey's and Bowley's (DB) price index, an increase between 13.93 and 84.04% in the price of provisions except custard with a reduction of 15%

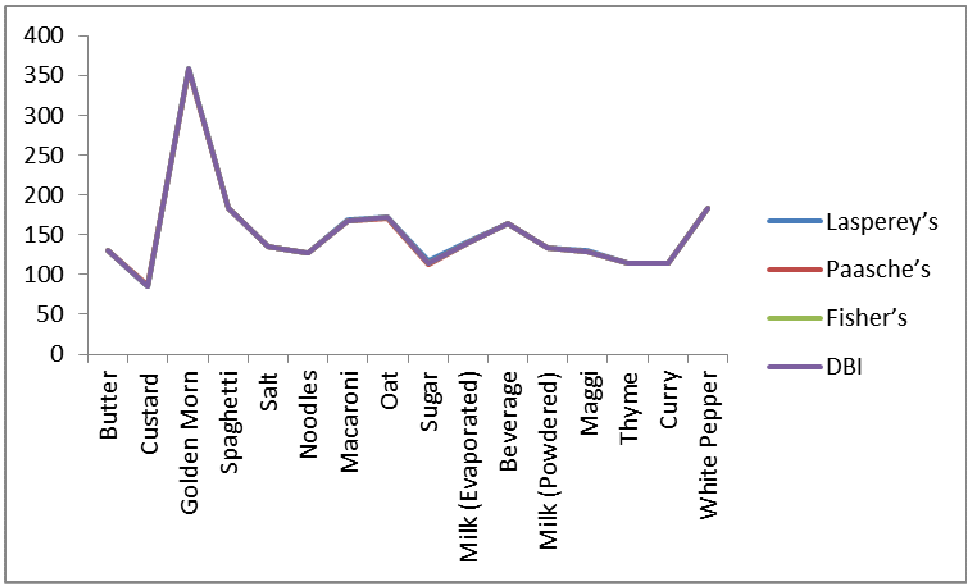

Figure 4: Chart showing Price Indices of Provisions in Agbeni Market

Table 7: General Prices of Clothing Materials in New-Gbagi Market

Commodity	Brand	Unit	P_0 (₦)	q_0	P_n (₦)	q_n	P_0q_0	P_nq_n	P_0q_n	P_nq_0
Ankara	Davida	1	2800	20	2600	60	56000	156000	168000	52000
	Nichlen	1	3900	40	2800	38	156000	106400	148200	112000
	Uuniwax	1	3200	10	3000	40	32000	120000	128000	30000
	Cote'de voire	1	3200	12	3000	50	38400	150000	160000	36000
	Hollandiz	1	3600	5	4500	15	1800	67500	54000	22500
	Super nice	1	3600	60	2600	80	21600	208000	288000	156000
	Holywood	1	3400	9	2600	80	30600	208000	272000	23400
	Fatix wax	1	2900	50	3000	25	145000	75000	72500	150000
	Super star	1	2800	20	2300	35	56000	80500	98000	46000
	Batik	1	3000	15	3200	25	45000	64000	60000	48000
	Hitarget	1	3000	100	3000	100	300000	300000	300000	300000
	Vivi wax	1	3200	10	3000	45	32000	135000	144000	30000
	Nbtx	1	2900	20	3000	45	58000	135000	130500	60000
	Super fashion	1	2600	30	2800	55	780000	154000	143000	84000
	M.j wax	1	2900	10	3000	10	29000	30000	29000	30000
	Super print	1	2600	20	2800	75	52000	210000	195000	56000
	Luck star	1	3400	40	3000	60	136000	180000	204000	120000
	A.B.C	1	3200	30	3400	48	96000	163200	153600	102000
Total							898000	1444500	1326000	985700

Table 7 Continued: General Price of Clothing Materials in New-gbagi Market

Commodity	Brand	Unit	P_0 (₦)	q_0	P_n (₦)	q_n	P_0q_0	P_nq_n	P_0q_n	P_nq_0
Lace	Voile	1	15000	6	9000	10	90000	90000	150000	54000
	Cocaine Tafeta	1	15000	1	36000	2	15000	72000	30000	36000
	Polish	1	16500	4	12000	15	66000	180000	247500	48000
	Dry	1	7500	3	18000	3	22500	54000	22500	54000
	Metalic	1	12000	6	15000	25	7200	375000	300000	90000
	All Lace	1	4500	2	15000	5	9000	75000	22500	30000
	Big Voile	1	90000	8	100000	15	720000	1500000	1350000	800000
Total							1888500	3095500	2801600	2140000
Guinea	Brocade	1	2000	1	4000	7	2000	28000	14000	4000
	Nylon	1	1000	20	2000	4	2000	8000	40000	40000
Total							6900	37500	16500	16500
Kampala	Adire indigo	1	2000	125	2200	105	250000	231000	210000	275000
	Adire batik	1	3000	30	3200	45	90000	144000	135000	96000
	Alabere	1	1000	40	1200	45	40000	54000	45000	48000
	Low batik	1	1500	30	1700	35	45000	59500	52500	51000
	Voile (koko)	1	900	50	1400	45	45000	63000	40500	70000
Total							622000	359000	319500	748000

Table 8: Average Commodity Prices of Clothing in New-gbagi Market

S/N	Commodity	P_0 (2004)	P_n (2014)
1	Ankara	3123	2978
2	Lace	22929	29285
3	Guinea	1500	3000
4	Kampala	1680	1940

Table 8 showed the average of prices of different types of cloths in New Gbagi market in 2004 and 2014 measured in Naira. There are variations in prices of these commodities between 2004 and 2014. Price changes are noticeable in these commodities. The chart below represents the base and the current price of different types of cloths.

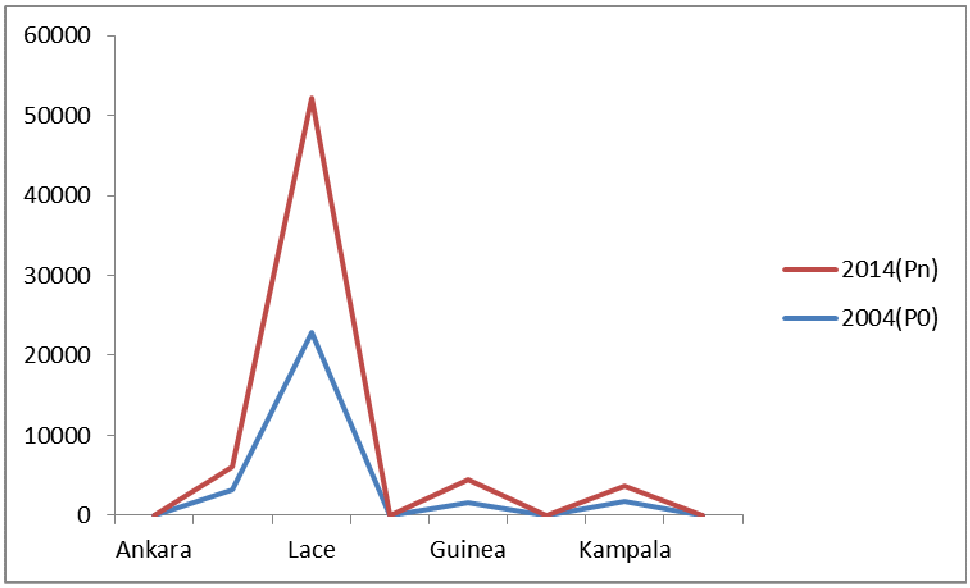

Figure 5: Chart showing Average Base and Current Prices of Cloths

Table 9: Commodity Price Indices of Cloths in New Gbagi Market

S/N	Commodity	Lasperey's	Paasche's	Fisher's	DB
1	Ankara	92.62	92.53	92.58	92.58
2	Lace	111.8	110.5	111.2	111.2
3	Guinea	200	200	200	200
4	Kampala	114.9	114.2	114.5	114.5

From table 9, we observed using Dorbey's and Bowley's (DB) price index, an increase between 11.2 and 100% in prices of cloths except ankara with less than 8% reduction in price.

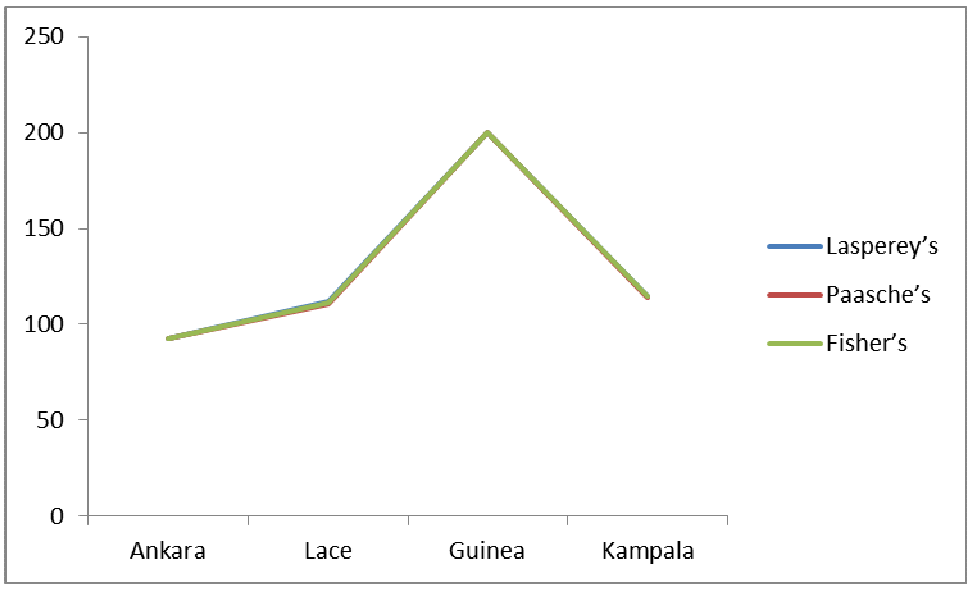

Figure 6: Chart showing Price Indices of Cloths in New Gbagi markets

Table 10: General Prices of Building Materials in Iwo Road

S/N	COMMODITY	BRAND	P_n	P_0	Q_n	Q_0	P_nQ_0	P_0Q_0	P_nQ_n	P_0Q_n
1	Water Closet	Twyfold	7500	7050	2	2	15000	14100	15000	14100
		Anchor	7200	7000	2	2	14400	14000	14400	14000
		Abeokuta	5500	4950	1	2	11000	9900	5500	4950
	Total		20200	19000			40400	38000	34900	33050
2	Bath	Ariston	15000	11800	1	2	30000	23600	15000	11800
		Astray	6000	3900	1	2	12000	7800	6000	3900
	Total		21000	15700			42000	31400	21000	15700
3	Washing Hand Basin	Twyfold	2500	2300	1	2	5000	4600	2500	2300
		Anchor	2100	2000	2	2	4200	4000	4200	4000
	Total		4600	4300			9200	8600	6700	6300
4	Pipes	4” Press	700	250	3	5	3500	1250	2100	750
		1” Press	270	310	5	5	1350	1550	1350	1550
		3/4” Press	230	240	4	5	1150	1200	920	960
		1/2" Press	220	205	4	5	1100	1025	880	820
		1/2” G.I	1300	775	3	5	6500	3875	3900	2325
		3” Press	6200	955	1	5	31000	4775	6200	955
	Total		8920	2735			44600	13675	15350	7360
5	Sinks	Single	3000	3000	2	2	6000	6000	6000	6000
		Single Double	8000	1000	1	2	16000	2000	8000	1000
		Double Double	14000	10300	1	2	28000	20600	14000	10300
	Total		25000	14300			50000	28600	28000	17300
6	Tanks	500l	9500	5600	1	2	19000	11200	9500	5600
		1000l	13500	10100	1	1	13500	10100	13500	10100
		1500l	20000	12600	1	1	20000	12600	20000	12600
		2000l	25000	13600	1	1	25000	13600	25000	13600
	Total		68000	41900			77500	47500	68000	41900
7	Common Cement	Elephant	1550	950	1	2	3100	1900	1550	950
		Dangote	1580	940	1	2	3160	1880	1580	940
	Total		3130	1890			6260	3780	3130	1890
8	Ceiling Asbestos	4 By 4	850	490	1	3	2550	1470	850	490
		2 By 2	700	420	2	3	2100	1260	1400	840
	Total		1550	910			4650	2730	2250	1330
9	Iron Roofing Sheets	Aluminium Roofing Sheet	15750	13500	1	1	15750	13500	15750	13500
		Aluzinc Roofing Sheets	14000	12000	1	1	14000	12000	14000	12000
		Deep Gutter	15000	13000	1	1	15000	13000	15000	13000
		Old Profile Color	14000	12000	1	1	14000	12000	14000	12000
		Hand Branch(6ft)	7200	5500	2	2	14400	11000	14400	11000
		Hand Branch(8ft)	7500	6000	1	2	15000	12000	7500	6000
	Total		73450	62000			88150	73500	80650	67500
	Grand Total		225850	162735			362760	247785	259980	192330

Table 11: Average of Prices of Building Materials in Iwo Road Market in Naira

S/N	Commodity	P_n (2014)	P_0 (2004)
1	Water Closet	6,734	6,334
2	Bath	10,500	7,850
3	Washing Hand Basin	2,300	2,150
4	Pipes	1,487	456
5	Sinks	8,334	4,767
6	Tanks	17,000	10,475
7	Common Cement	1,565	945
8	Ceiling Asbestos	775	455
9	Iron Roofing Sheets	12,242	10,334

Table 11 showed the average of prices of building materials in Iwo road market in 2004 and 2014 measured in Naira. There are variations in prices of these commodities between 2004 and 2014. Price changes are noticeable in these commodities. The chart below represents the base and the current price of building materials.

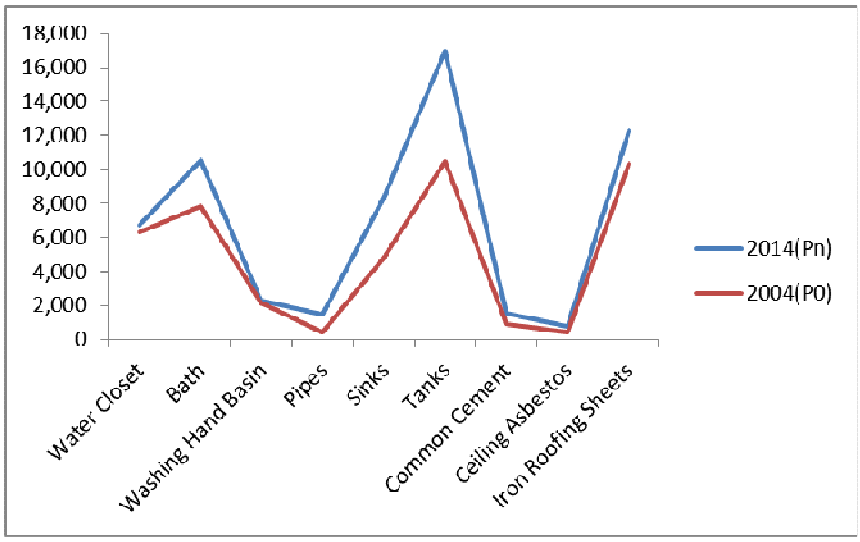

Fig 7: The chart showing base and current price of building materials in Iwo Road market

Figure 1 compared the base price (p_0) (2004) and current price (p_n) (2014) of building materials in Iwo Road market. Price changes in these commodities are vividly revealed between the base and current period.

Table 12: Summary of Consumer Price Indices of Building Materials in Iwo Road Market

S/N	Commodity	Laspeyres'	Paasche's	Fisher's	DB
1	Water Closet	106.3157	105.5975	105.9561	105.9566
2	Bath	133.7579	133.7579	133.7580	133.7579
3	Washing Hand Basin	106.9767	106.3492	106.6625	106.6629
4	Pipes	326.1426	208.5597	260.8069	267.3511
5	Sinks	174.8251	161.8497	168.2124	168.3374
6	Tanks	163.1578	162.2911	162.7240	162.7245
7	Common Cement	165.6084	165.6084	165.6085	165.6084
8	Ceiling Asbestos	170.3296	169.1729	169.7503	169.7513
9	Iron Roofing Sheets	119.9319	119.4814	119.7065	119.7067
	Aggregate Index	146.4011	135.1739	140.6755	140.7875

From table 12, we observed using Dorbey's and Bowley's (DB) price index, an increase between 5.9 and 69.7% in the price of building materials.

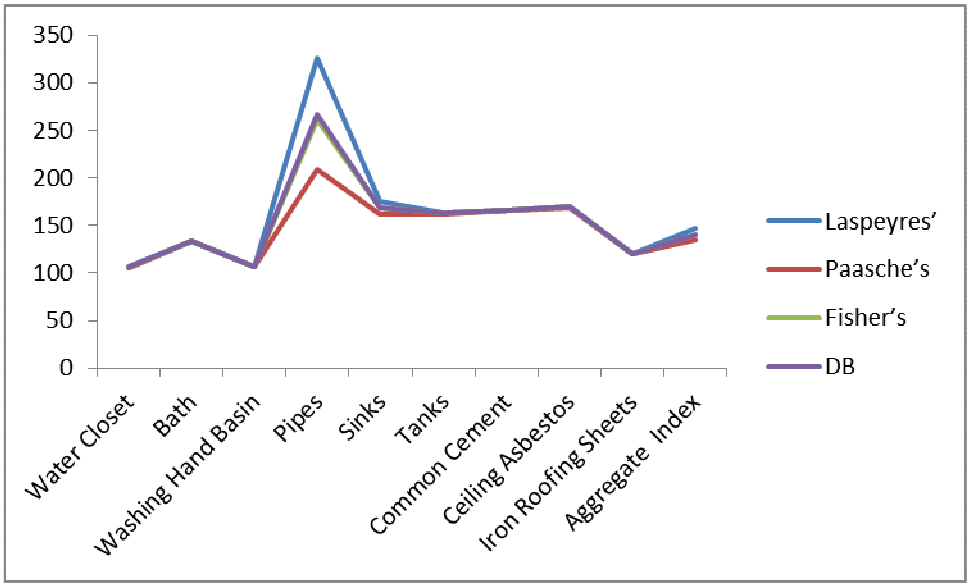

Figure 8: Chart showing the Price Indices of Building Materials in Iwo road markets

4. Conclusion and Recommendation

The findings of this study clearly showed that there was increase in the general price level of food items, clothing and building materials. Specifically, results showed an increase between 40.27 and 460.26% increase in the prices of food items; an increase between 13.93 and 84.04% in the price of food items (provisions) except custard with a reduction of 15%; an increase between 11.2 and 100% in prices of cloths except ankara with less than 8% reduction in price and an increase between 5.9 and 69.7% in the price of building materials. Based on the results and findings of this survey, we make the following recommendations: The state government should take urgent steps to educate the general public on the importance of good record keeping and the role of statistics in nation building. The government should reduce unnecessary expenditure on non-developmental activities. This will also put a check on private expenditure which is dependent upon government demand for goods and services. Government should increase aggregate demand in the economy to ensure that there is an increase in domestic productivity so that it will not create a demand pull type of inflation. This would be achieved through properly blended monetary and fiscal policies. Excise tax on raw materials being used by some manufacturing/producing companies should be reduced. The standard of living should be improved so that basic necessities could easily be accessible at a reduced cost. Measures should be taken by relevant authorities to help maintain stability in the prices of building materials.

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