

ASSESSMENT OF THE DETERMINANTS AND IMPLICATIONS OF AGRICULTURAL PRICE VARIABILITY FOR FOOD SECURITY IN NIGERIA

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ABSTRACT

This paper examines the determinants of variability of market prices of agricultural products in Nigeria with a view to identifying variation that exist in the prices of some agricultural commodities and their effects on food security. Information was gathered through the use of secondary data from the Central Bank of Nigeria (CBN) and the National Bureau of Statistics. Data obtained were analyzed using descriptive statistics such as percentage, price relatives as well as measure of Central tendency and dispersion like the Means Standard Deviation and Coefficient of Variation (CV). The results of the analysis showed that, relative to the price of manufacture goods, agricultural products prices exhibits great variation from one area to other and one period to other over the past half century and are expected to continue. The price variation from the study was found to be as a result of several factors ranging from variation in the quality of the product, transaction cost, speculative activities of the middle-men, variability of yields, and government policy to climatic factors. Because of the importance of agricultural products pricing, Nigeria can only achieve and sustain self-sufficiency in production of food through marketing policy that keeps the price of agricultural products attractive to farmers in comparison with prices of other products.

KEYWORDS: Determinants, price variability, agricultural products, food security and Nigeria

INTRODUCTION

The primary focus of the Nigerian government at all levels, is to ensure food security by achieving self-sufficiency across a broad range of agricultural commodities. This can be achieved when all the citizens can be assured of adequate supply of food at all time. The price of food is therefore crucial to food access in the country. While the poorest wealth groups are most reliant on market purchases, the better off groups stock food from their harvest. It is clear that agricultural production is typically a risky business with farmers facing a variety of price, yield, and resources risks which make their income unstable from year to year. As a result of this, the pricing systems for agricultural products are diverse and very significant in explaining the quantity of food crops that will be produced as well as that of export crops. Prior to 1986 in Nigeria, Commodity Boards were established with the role of reducing the chain of intermediaries in the purchase of produce and hence, help to increase the price payable to producers. The Boards were charged with fixing product prices and purchasing of agricultural products from farmers. These Boards were however dissolved given room for free market forces to play a prominent role in price determination of agricultural products. This problem of prices facing Nigerian farmers therefore merits research attention to stabilize agricultural producer prices. Taussig (1918) discounted the precision of short run-equilibrium prices and suggested that the variability in agricultural products price impede products flow. He stressed that even on a single day, there is no one price rigidity settled by the equilibrium of supply and demand. With the wavering doings of human being and uncertainties about the supply and the conditions of consumption and demand, differences of opinion are likely and prices are not mathematically certain but statement of tendencies.

Evidence has shown that the long-term prices of agricultural commodities after adjusting for inflation has been declining for more than 150 years as compared with prices of other products like the manufacture and oil. Variability of price especially with the international markets is becoming more competitive as a result of globalization, market liberalization and privatization of parastatal organizations. Gilbert and Janter (2000) therefore opined that market liberalization is the major change that affects many markets for tropical agricultural commodities over the past decade. Many internal markets particularly in Africa were regulated by the marketing board mechanisms with the aim at reducing the variability of farm

prices. In certain instance, these schemes enjoyed a measure of success, particular where the macroeconomic environment was one of stable exchange rates but more usually they were used as taxation instrument. They also absorbed resources through rent extraction and regarded response to secular declines in prices. Often the organizations ended up as being insolvent and partly through donor pressure, they have been either abolished or stripped of their powers at the same time, all the limited number of economically interventionist international commodity agreement, which had the objectives of smoothing international price variability have either collapsed or seen their economic change lapse.

One of the effects of price variation is that, government unforeseen variations in export prices can complicate budgetary planning and can jeopardize the attainment of debt targets. This is a problem for the highly indebted poor countries like Nigeria, which was highly dependent on agricultural exports before the oil boom of 70s, but because her oil export can no longer solve all her problems, therefore, there is an urgent need to increase agricultural production to boost export. Price variability increases cash flow variability for exporter and reduces the collateral value of inventories, both factors work to increase borrowing costs, small holder farmers, often with poor access to efficient saving instruments cope with revenue variability through crop diversification with the consequence that they largely forgo the potential benefits obtainable through specialization (International Task Force on Commodity Risk Management in Developing Countries, 1999).

The Preoccupation of this paper in line with Duncan (1997) recommendation on the need for research study of price variability is to find out the determinants of variation of agricultural products price in Nigeria and the effects of this on the Nigeria food security. This has been a kind of research work which the World Bank has long recognized as important for rural households and, government. This study is therefore an important requirement for an improved food security in Nigeria. This study follows an extensive review of policies and programmes of previous and present governments that aimed at enhancing food production and poverty reduction among the households in Nigeria which has yielded little or no result. The authors believe that, price variability is one of the factors that can lead to the decline in agricultural productivity thereby leading to hunger, poverty and malnutrition and food insecurity. Specifically the study looks at

- i. The relative importance of agricultural price in the context of agricultural production
- ii. Determine the magnitude of change in price to changes in agricultural output supply
- iii. Provide information that could guide policy makers in designing policy strategy to expand agricultural products through moderate prices rather than concentrating on oil pricing if truly they want the country to be food secured with reduction in poverty level.

The rest part of the paper goes thus: Section two presents theoretical framework and section three contain data and methodology. Section four presents empirical results and interpretation, while section five offers some policy recommendations and conclusion.

Brief Review of Literature

Price is one of the four major variables a marketing manager control. It is the perceived or qualitatively calculated worth of a product or goods to buyers and sellers and is often set by the seller which may be farmers, wholesalers or retailers. The buyers either negotiate or refuse to pay that price or in certain instance accept it without question. To some extent price is not static element of transaction but a dynamic one. There exist many empirical studies on the effects of price or exchange rate on trade in literature (Schuh 1974, Okuneye 1985, Ihimodu 1993, Ogiogion 1993, Osuntogun et al 1997, Obadan 1994, Adubi and Okunmadewa 1999). But most of the efforts have concentrated on the price and export effects in a static setting ignoring the determinant of price variability with only little emphasis on price fluctuation of agricultural products. Agricultural pricing is the most difficult of price determination (others are consumer pricing and industrial pricing) due to a number of reasons, among which are: Seasonality and unpredictable nature of production, the attendant high risks, long cycles of production and government involvement leaving little or no latitudes for the farmers

In agricultural product pricing system adequate and conducive price arrangement is an important complement of the total agricultural activities of a community (Muktar, 2002). According to Muktar, unless farmer can have the market and

the right price to sell his produce he will be depressed and be driven out of production. One of the problems price has brought to Nigeria is unfavorable terms of trade for rubber and palm oil which started from the mid-1980s when the country had recourse to import competing grains to augment domestic supplies. (Balogun, 2000). Balogun stressed further that, the poor performance of agricultural production for export in Nigeria is mostly due to the persistent decline in World Commodity Price (shocks), poor management of public resources and inappropriate incentives and technological constraints. Price variability and long run price decline have also been found as major characteristics of many of the tropical primary agricultural commodity markets (Panos et al 2002). The main cause of low commodity prices of agricultural products according to Panos et al (2002) is oversupply. In addition, Olukosi and Isitor (1990) opine that, there exist a persistent pattern of price behaviour such as seasonal patterns of change, yearly variation, trend and cycles in the prices of agricultural products in Nigeria. Variation in prices observed overtimes could be as a result of complex mixture of changes associated with seasonal, cycles, trend and irregular or random factors. Because of the market seasonal pattern of change, they concluded that prices of storable products such as cereal and leguminous grains are depressed to the lowest level at harvest time and then rise as the season progresses, reaching a peak just before the next harvest season. This was supported by Michael (2004) in his studies on the Nigeria oil seeds and product. Taussig (1918) believes that we can have short price fluctuations arising from several causes such as accurate response to changes in supply and demand, overreaction due to incomplete knowledge of the nature of the participation in price making and incompatibility of the pricing mechanism with the current nature of the industry. Therefore in judging the need for price flexibility we should identify the causes of variations in prices emanating from the present system.

The Nigeria government in effort to achieve stabilization of seasonal prices of the agricultural products has therefore established various marketing organizations for agricultural price regulation and support (table 1).

Table 1: Summary of the Historical Trends in the Development of Produce Marketing in Nigeria.

Date/ Period	Agency	Remarks
Pre-Colonial	Private/ Traditional system of trading involving local agencies as well as foreign businessmen	Bartering and other forms of trading
Pre-World War II	Some level of organized trading involving colonial agencies in various commodities including crops and livestock products like skins, leather, etc, mainly aimed at feeding the metropolitan industries of the colonial countries	Increases activities especially with the advent of rail lines to different parts of the country
1939-1945	Business organized private marketing-UAC, John Holt, CFAO, PZ etc	Prominence of and the rise of indigenous businessmen in agricultural commodity marketing.
1947	Establishment of West African produce control Board	Initial indication of active and increased government control of commodity marketing.
1949-1953	First Extra Commodity Boards established, establishment of Nigerian produce marketing company (NPMC)	NPMC responsible for overseas trade of agricultural commodities and acted as sole agent for the regional marketing Boards
1954-1976	Era of the Regional marketing Boards Eastern Northern Western and Mid-Western	When they operated they took care not only of the marketing but also their Development in term of research and Extension
1977-1986	Second Government Commodity Boards The NPMC and the states marketing Boards were abolished in 1977 and in their place 7 commodity Board were put in place. Namely: Cocoa, Cotton, Grains, Groundnut, Palm Produce, Rubber and Root/tuber	Following the creation of more states in 1976, there was the problem of proliferation of the state marketing boards among others. So FGN decided to create these boards
1987-2001	This is a blank period as far as organized government assisted/controlled farm produce marketing is concerned as technically no organized body took over from those abolished commodity boards of 1986	Middlemen foreigners have literally taken over this trade with the bad consequence for the poor farmers and country
2001 to date	3 multi-commodity development/marketing companies for Arable crops, Tree crops and livestock.	To handle marketing and other services

Source: Muktar, M. (Debt management office-Abuja) 2002 personal communication.

DATA SOURCE AND METHODOLOGY

The data set for this paper consist of time series data for producer prices and agricultural commodities output, spanning 1970 through 2003 except in places where data are limited due to unavailability of national value. The variables under consideration are obtained from the National Bureau of Statistics (formerly called Federal Office of Statistics), Central Bank of Nigeria Annual Reports and Statement of Account, Food and Agriculture Organization (FAO) production yearly book and Federal Ministry of Agriculture, Abuja.

The methods of data analysis used are: Descriptive analysis (percentages and price relative) and measure of dispersion (Variance, Standard Deviation, Coefficient of Variation). The standard deviation has the advantage of reflecting variability among all years in the period and is less sensitive to outliers.

$$\text{Variance } (\delta^2) = \frac{(Y_1 - Y_m)^2 + (Y_2 - Y_m)^2 \dots + (Y_n - Y_m)^2}{N} \text{-----1}$$

$$\text{Standard Deviation } (\delta) = \sqrt{\frac{(Y_1 - Y_m)^2 + (Y_2 - Y_m)^2 \dots + (Y_n - Y_m)^2}{N}} \text{-----2}$$

Where N = the number of years in the period
 (Y₁, Y₂ Y_n = annual prices in year 1 through
 Y_m = average annual price, over the period.
 Coefficient of Variation is a relative measure of variation. It describes the magnitude sample values and the variation within them. This is the ratio of the standard deviation to the mean

$$\text{Coefficient of Variation (CV)} = \frac{\text{Standard Deviation}}{\text{Means}} \times 100 \text{----3}$$

Distributions with CV < 100 are considered low-variance, while those with CV > 100 are considered high-variance
 Price relatives sometimes called simple index number gives an indication of how much the price of selected commodities in a given year have changed over that of the base year.

$$P = \frac{P_1}{P_0} \times 100 \text{-----4}$$

where
 P = Price relative
 P₁ = price in a given year,
 P₀ = price in the base year

RESULTS AND DISCUSSION

This paper relied on the available data for this study with the results of the analysis presented in tables 2, 3, and 4. Table 2a shows that a significance difference exist in the prices of agricultural produce between one state to another and among different products when compared to price of petroleum products and manufacture goods which have slight price variation across states in terms of pump prices as well as same manufactured products. For instance, using 10 selected states over a period of 10 years (1988-97), the price variance across states of gari, yam, maize (shelled) sorghum, millet, rice, cowpea (white) and ground nut per ton were ₦ 3989, ₦ 5031.9, ₦ 5510.9, ₦ 2486.8, ₦ 3624, ₦ 2247.5, ₦ 5777.2 and 5510.8 respectively. Price of gari was highest in Akwa Ibom, followed by Cross River, Niger and Lagos State respectively. The observed regional variations in prices, to a great extent accounted for changes in output, regional specialization, taste, transport costs and marketing margins. The highest price in Akwa Ibom and Cross River was as a result of high demand when compared with supply in these areas. The activities of oil companies in the states being among the oil producing states negatively affect the areas of land that could be used for agriculture, hence the supply of staple food is expected to be hampered. This was suggested for the high prices of staples in the two states relative to other states in the country. Also, the ever increasing population of the area because of inflow of people coming from other states to partake in oil exploration activities has resulted in demand to exceed supply and as a result high prices of agricultural commodities. In this zone, gari is believe to be one of the major food consumed by the greatest percentage of the population. In general, table 2b indicates that prices of staples increased more during reform relative to other period. A possible explanation was however as a result of the effects of increase in supplies from the domestic sources. For instance, the purpose of reforms in market is to correct distortions and structural imbalance which is expected to enhance the effectiveness of price factors.

Variation in prices of some industrial products exists from one state to another or from one period to other due to technological improvement of such products besides transportation or transaction cost. Variation in agricultural products from one state to another or from one period to another as shown in tables 2a and 2b are however not due to the above reasons only but other reasons ranging from climatic to human factors.

Table 2a: Average variation in the Rural Market Prices of Some Domestic Staple Crops across States in Nigeria (1988-1997) in ₦ per ton.

State	Gari	Yam	Maize (Shelled)	Sorghum	Millet	Rice	Cowpea (White)	G/N (Shelled)
Lagos	11374.5	18225.1	11042.5	11836.4	15076.2	17046.4	18538.4	18412.0
Benue	8378.2	9385.6	7174.3	7770.0	8405.3	20808.7	9199.0	8782.0
Ondo	7645.8	19924	6115.9	9482.6	17262.4	1726.4	17040.6	13067.5
Cross River	18071.3	8907.2	8430.7	13378.8	13410.2	161693.8	1945.9	25190.7
Ogun	8339.4	7737.8	7827.4	7479.6	7156.0	19871.9	18585.0	16745.0
Edo	6533.4	8965.2	8289.3	12932.3	13432.5	19061.1	17794.5	26885.0
Plateau	7884.1	6510.3	5822.4	5893.4	6414.8	14742.0	13826.3	16818.7
Niger	12363.3	2436.4	6838.4	7525.8	8571.5	22346.0	21131.4	22817.3
Adamawa	10193.6	7252.1	7142.9	7728.7	7026.6	18642.2	217621.1	1415.5
Akwa Ibom	18191.1	11565.2	12641.5	11062	11108.4	16056.9	911169.2	2230.78
Average	10897.47	10090.89	8132.53	9508.96	10786.39	31199.54	124685.14	15236.25
Variance	15,912,121	25,320,018	4,197,991	6,184,174	13,133,376	5,051,256	33,376,040	30,365,610
S.D	3989	5031.9	2048.9	2486.8	3624.0	2247.5	5777.2	5510.8
C.V	36.60	49.87	25.19	26.15	33.59	7.20	4.63	36.17

Note: SD = Standard deviation, CV = Coefficient of Variation, G/N = groundnut
 Source: Computed from CBN Annual Report and Statement of Accounts of various issues

Table 2b: Average growth rates in prices of Staples in Different Nigeria Markets, 1980- 2000

Crops	period	Lagos (Sruth - West)	Cross Rivers(South-South)	Plateau(North-Central)	National
Garri	1980-85 (pre-reform era)	-7.40	7.43	1.11	-4.49
	1986-1993(Reform era)	21.50	16.53	18.41	10.09
	1994-2000(post reform era)	19.33	6.34	7.25	-0.05
Rice	1980-85 (pre-reform era)	3.98	2.03	4.79	5.54
	1986-1993(Reform era)	5.75	1.92	0.13	-1.97
	1994-2000(post reform era)	10.26	-3.22	3.67	-1.90
Yam	1980-85 (pre-reform era)	-2.47	0.29	-6.91	-4.92
	1986-1993(Reform era)	22.27	25.19	16.17	3.09
	1994-2000(post reform era)	-8.14	-1.75	13.20	4.22
Beans	1980-85 (pre-reform era)	4.81	7.61	8.51	5.02
	1986-1993(Reform era)	1.17	-1.70	-1.26	0.21
	1994-2000(post reform era)	-1.90	3.85	3.31	3.21
Millet	1980-85 (pre-reform era)	-6.86	1.35	3.53	1.35
	1986-1993(Reform era)	10.77	13.69	3.44	5.82
	1994-2000(post reform era)	2.73	4.42	5.62	-7.15
Maize	1980-85 (pre-reform era)	-0.18	-3.94	7.10	0.77
	1986-1993(Reform era)	7.43	8.54	8.48	5.05
	1994-2000(post reform era)	6.40	-4.03	4.32	

Source: computed from CBN Annual Reports (Various issues)

Magnitude of changes in Agricultural Products Price to changes in Output Supply

From table 3a, the average change in the price of cash crops was generally negative except for palm kernel and ground nut in 1970 to 1985 (pre SAP era). This was higher between 1986 and 1993 (SAP era) and has since then fluctuating. Producers price of cocoa palm kernel, rubber, cotton and ground nut between 1970-2003 varies by ₦46267.30, ₦10318.0, ₦33, 334.9 and ₦18642.60 respectively while level of output changed by 65.1 tons, 284.9 tons, 122.8tons, 93.4tons and 6604.6 tons of the respective crops stated as above. Groundnut has the highest variation when compared with other crops .Table 3b also shows that changes in domestic prices of major staples and cash crops in Nigeria was moderate in 1980 to 1985 despite the declined in the World prices of this commodities. It was also positive and even higher during 1986 to 1988. This observed trend can be explained by the depreciation of the Nigeria naira.

However, table 4 gives an indication of how much prices and output of the selected agricultural commodities in a given year has changed over that of the base year. The table indicates that the nominal price and output of cocoa between 1975 -79 were ₦1030.0 and 179.6 tons respectively. Calculating the price and output relative gave 129 and 73 respectively, which indicates that the price of the commodity between these periods was 129% higher than its price in the base year (1970-74) and the output has fallen by 30% when compared to the base year.

The result of the analysis as indicated in the table further shows variation in both prices and output of the agricultural product from year to year. There was 17.6% increase in price of ground nut between years 2000 – 2002; 2.8% increase between years 2002-2003 with a fall in output of about 70% within the same periods. This might be due to a drastic fall of about 14.8% in price. Also, there was about 10.6% increase in price of cocoa between the same periods with about 69.8% increase in its output.

Table 3a: Prices and Outputs of Major Agricultural Export Commodities, 1970 – 2003 (Amount in N and Output in tons)

Year	Outputs					Producers prices				
	Co	P.K	R	C	G/N	Co	P.K	R	C	G/N
1970-74	797.0	120.2	N.A	132.0	79.0	246.4	286.6	65.6	291	1427.2
1975-79	1030.0	150.0	365.0	330.0	290.0	179.6	287	58.8	242.4	556.6
1980	1300.0	180.0	420.0	300.0	420.0	153	279	45	77	674
1981	1300.0	200.0	485.0	400.0	450.0	174	294	60	48	530
1982	1300.0	200.0	485.0	465.0	450.0	156	310	50	38	458
1983	1400.0	230.0	700.0	520.0	450.0	140	179	45	12	196
1984	1500.0	400.0	750.0	560.0	650.0	140	340	58	108	591
1985	1500.0	400.0	1200.0	700.0	1750.0	1609	360	226	114	621
1986	1600.0	400.0	1000.0	850.0	1000.0	148	727	190	100	896
1987	3500.0	850.0	1000.0	1000.0	2075.0	100	824	180	195	687
1988	7500.0	100.0	1500.0	4000.0	2250.0	253	545	211	194	1016
1989	10100.0	1800.0	2000.0	2433.0	6421.0	256	939	132	187	1017
1990	8500.0	2000.0	1395.0	2600.0	4320.0	244	1190	147	276	1166
1991	10158.0	2525.0	5300.0	4163.0	4752.0	268	1203	215	309	1361
1992	12845.0	5693.0	12520.0	3778.0	6843.0	292	1321	320	346	1297
1993	25278.0	10567.0	24091.0	N.A	12958.0	306	491	225	192	1416
1994	61180.0	143730.0	34400.0	45000.0	13500.0	323	503	230	218	1453
1995	73402.0	31730.0	34775.0	45000.0	20067.0	203	543	225	301	1579
1996	80222.0	22185.0	51197.0	45232.0	24125.0	323	548	245	309	2078
1997	89687.0	16554.0	56722.0	35833.0	17797.0	345	550	250	349	2101
1998	79600.0	21000.0	61833.0	32953.0	21509.0	165	572	255	351	2271
1999	85766.0	19129.0	57892.0	40208.0	2809.0	170	600	265	351	2307
2000	90000.0	20000.0	59400.0	35000.0	44110.0	170	629	275	353	2390
2001	100944.0	233500.0	69800.0	33204.0	69362.0	171	6206	278	358	2401
2002	130670.0	23500.0	65667.0	33868.0	81592.0	172	2645	284	379	2375
2003	150943.3	24322.5	113898.6	3253.2	83855.0	173.2	672.1	-	400.6	506.0
Average	39689.3	9341.8	27570.6	17521.5	17275.9	214.4	525.1	239.2	153.4	1220.7
Variance	214066214	106461124	111121558	347546535	605135400	4238	81168	15080	8724	43,620,71
S.D	46267.29	10318.0	33334.9	18642.6	24599.5	65.1	284.9	122.8	93.4	6604.6
CV	116.57	110.45	120.91	106.40	142.39	30.36	54.26	51.34	60.89	54.11

Note

Co = Cocoa P.K = Palm Kernel CV = Coefficient of Variation
 C = Cotton G/N = Ground nut S.D = Standard deviation
 n.a = not available R = Rubber (Dry lump)

Sources: (i) Computed from data published by the National Bureau of Statistics (formerly called FOS), CBN Annual Reports and Statement of Accounts (Various issues) and International Financial statistics FAO production year Book.
 (ii) Federal Department of Rural Development Agricultural Monitoring Evaluation Unit (2003): Bulletin on Agricultural Commodities Market Prices.

Table 3b Real price changes in selected Nigeria Agricultural commodities

	1980-82	1983-85	1986-1988	1989-1991	1992-1994	1995-1997	1998-2000
Cocoa							
A	4.00	4.77	66.41	-2.65	59.85	12.75	0.12
B	-20.09	8.60	-11.77	-9.45	5.24	4.94	-19.43
Cotton							
A	-10.73	2.85	62.31	26.38	28.29	43.02	-46.72
B	-15.15	-0.76	-0.77	6.96	1.42	-1.34	-6.74
Palm kernel							
A	5.27	23.10	30.54	29.57	59.28	4.71	6.30
B	-22.98	6.16	-0.76	-8.59	13.69	1.25	-12.45
Groundnut							
A	12.57	12.26	44.90	30.70	25.51	9.21	30.26
B	-20.08	-6.75	10.85	9.33	-8.65	1.15	-5.27
Rubber							
A	17.83	7.44	23.10	42.07	62.34	16.67	1.54
B	-24.21	-2.67	5.19	-0.81	0.90	3.02	-0.05
Palm oil							
A	10.85	10.62	33.44	26.58	112.95	-23.68	9.56
B	-13.50	3.94	-4.54	-8.48	14.84	1.03	-18.91
Rice							
A	5.0	27.82	14.82	99.46	-41.51	23.51	0.84
B	-15.01	1.41	3.89	-0.92	3.67	0.64	-6.13
Sorghum							
A	28.35	18.81	15.08	33.99	14.23	42.56	8.37
B	-8.67	-1.68	-1.51	2.18	-0.40	1.80	-7.32

Note: "A" represent changes in domestic price; "B" represent change in the World price
 Source: computed by the authors

Table 4: Price and Output Relatives of the Major Agricultural Commodities Shown in table 3a above

Year	Producer Prices					Output				
	Co	P.K	R	C	J/N	CO	P.K	R	C	G/N
1970-74	100	100		100	100	100	100	100	100	100
1975-79	129	125	100	250	367	73	100	90	83	39
1980	163	150	115	227	532	62	97	69	26	47
1981	163	166	133	303	570	71	103	91	16	37
1982	163	166	133	352	570	63	108	76	13	32
1983	176	191	192	386	570	57	97	90	4	28
1984	188	333	205	424	570	57	119	88	37	41
1985	188	333	205	530	823	65	126	345	39	44
1986	201	333	329	644	2215	60	254	290	34	53
1987	439	707	274	750	1266	41	288	274	67	48
1988	941	832	422	3030	2627	103	190	322	67	71
1989	1267	1498	548	1843	2848	104	328	201	64	71
1990	1066	1664	382	1980	8128	99	415	224	95	82
1991	1275	2101	1452	3154	5468	109	420	328	106	95
1992	1599	4735	3430	2862	6015	119	461	488	119	91
1993	3172	8791	6600	-	8662	134	171	343	66	99
1994	7676	11956	9425	34091	16403	131	176	351	75	102
1995	9210	26398	9527	34091	17089	82	189	389	86	111
1996	10065	18457	14224	34267	25401	131	191	373	103	146
1997	11253	13772	15540	27146	30538	132	192	381	106	147
1998	9987	17471	16941	24964	22528	140	200	389	120	159
1999	10761	15914	15861	30461	27227	67	209	404	121	162
2000	11292	16639	16274	26515	55835	60	219	419	121	162
2001	12665	19450	19123	25154	87800	60	216	424	123	168
2002	16395	19551	26210	25658	103281	70	225	433	130	166
2003	18939	20235	31205	24282	106146	70	235	-	138	35

Source: Computed by the authors from table 4a above

CONCLUSION AND RECOMMENDATIONS

The study revealed that regional variation in prices of agricultural products exist in Nigeria and this is one of the factors leading to decline in agricultural productivity which eventually leads to hunger, poverty, malnutrition and food insecurity. Lower agricultural product prices result in abandonment of traditional occupation owing to a wide differences in prices.

The variation in prices was found to be beyond technological improvement attributable to manufacture products. The major determining factor was found to be the problem of transporting agricultural commodities from the producing areas to the consumers, while others include, middlemen speculative activities, difference in other transaction cost, climatic factor, uneven distribution of human population, Government policies, variation in input cost, limitation in shelf life of the products, changes in demand and supply, weaknesses in the currency of the destination countries if the products are exportable, yields variation from one season to other or location to other, quality of such products, pressure by other competitive products pricing policy that are of close substitute

One can therefore conclude that unlike other products, price variability will continue to exist in agricultural commodities in as much as the above factors remain. Variation can only be reduced when the Nigerian government go into production and make her reserves a stronger one in order to be able to stabilize agricultural products to some extent and achieve its objectives of self-sufficiency and food security. Other recommendations are:

- i. Government intervention on agricultural price stabilization should be at counterbalancing only the extreme points of price variability not attempting to smooth out price fluctuations within too narrow a range. Since the latter requires frequent and often distortion interventions on the market and also potentially very costly
- ii. Other mechanisms such as crop insurance scheme, forward and futures market could be explored before

putting in place fully fledged price stabilization schemes.

- iii. Stabilization schemes should be administratively simple and transparent.
- iv. Government should carefully weigh the costs of schemes that require the public sector to perform such activities as procuring storing and distributing stocks so that, it will not be like the abolished marketing boards of 1977-1986. They should examine whether those functions could be better contracted out to the private sector.

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