

## The Effects of Deregulation Policy on Cocoa Marketing in Nigeria

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**Abstract:** This study employs time series and price elasticity of supply as the analytical tools in an attempt to empirically examine the effects of deregulation policy on the output and price of cocoa beans pre- and post deregulation in Nigeria between 1981 and 2003. Secondary data sourced from published and unpublished materials from produce departments of cocoa producing states of Nigeria as well as from the Central Bank of Nigeria and Federal office of Statistics were used. The empirical results revealed that the output of cocoa declined steadily pre-deregulation from 174,000 metric tons in 1985 while the output increased post deregulation from 126,000 metric tons in 1987 to 268,000 in 1991 whereas the price increase pre-deregulation era from ₦1,200 per metric tons in 1981 to ₦1,600 per metric tons in 1985 while the price increase post-deregulation are from ₦8,000 per metric ton in 1987 to ₦9,000 per metric tons in 1991. Also, the result of time series and price elasticity of supply analyses revealed fluctuating trend in prices and output of cocoa with output and prices of cocoa increasing more during the post deregulation than the pre-deregulation

**Key word:** Cocoa, deregulation, elasticity, time series, Nigeria

### INTRODUCTION

Cocoa, (*Theobroma Cacao*) Linn is important as a foreign exchange earner in Nigeria and some parts of the West Africa sub region. The beans are very useful in the production of cocoa beverage, chocolate candies and cocoa butter which are very rich in proteins, fats, carbohydrates and Vitamin B complex<sup>[1]</sup>. As the Nigerian cocoa production output witnessed fluctuating trend, so also is the producer price of Nigeria cocoa has been fluctuating over the years<sup>[2]</sup>.

Commodity Boards whose primary objective was to arrange for the purchase, grading, export, and marketing of cocoa bean was abolished in 1986 Njoku<sup>[3]</sup>. Prior to scrapping of the Commodity Boards, the marketing and exporting of agricultural produce in Nigeria was mainly monopolised by the Commodity Board and specifically, the Nigeria Cocoa Board for the cocoa produced in Nigeria. The price stabilization policy of the cocoa marketing Board denied the farmers the full benefits of the world price of cocoa. It was as a result of the inefficiencies in the commodity Boards system and also following structural changes in the Nigeria economy that the marketing Board was abolished in 1986 and the after effect of the abolition was the liberalization by the Federal Government of the export pricing a policy that enabled the

marketing of cocoa to be handled by private cocoa merchants while at the same time, a new foreign exchange system (the second tier foreign exchange market-SFEM) was introduced by the Federal Government as part of Government's structural Adjustments program (SAP). The result of the new marketing system gave rise to free market operations that many private industries, firms and corporate bodies are freed to engage in domestic trading and exportation of cocoa beans. Firms sell to the private entrepreneurs directly or through intermediaries, product prices are determined by the law of demand and supply in the international market.

The prices and output of cocoa fluctuated under the period in review and the immediate effect of structural Adjustment policy was dramatic jump in the domestic price of cocoa between 1986 and 1990. as a reaction to the favourable price incentive, the cocoa farmers paid better attention to old cocoa tree while also planting new ones. Consequently cocoa output increased and the Nigeria cocoa farmers witnessed what was ably described as cocoa boom, which transformed the standard of living of the cocoa farmers.

This study is to examine deregulation policy on cocoa marketing in Nigeria in an attempt to empirically examine the effects of the policy on the output and price of cocoa beans pre and post deregulation in Nigeria between 1981 and 2003.

**MATERIALS AND METHODS**

The study area comprised the cocoa growing States in Nigeria. Cocoa is produced mainly in the rain forest area of the country. According to the<sup>[4]</sup> the main cocoa producing states are Ondo, Ekiti, Oyo, Osun, Ogun, Delta, Edo, Cross-Rivers and Akwa Ibom while Imo, Kogi, Benue, rivers and lagos are other states where cocoa is grown. The former Western state which constitutes the present Oyo, Ogun, Ondo, Osun and Ekiti States provide the most suitable ecological zones for the crop as the states have similar ecological factors particularly with respect to climate and vegetation. The South Western part of the country comprising some states accounts for over 90% of total production while old Ondo State (Comprising of the present Ondo State and Ekiti States) alone accounts for between 50 and 55% of the total Nigeria cocoa production Adegeye<sup>[5]</sup>.

**Sampling technique and the data:** A simple trend analysis of secondary data of variables of tonnage of graded cocoa in Nigeria were carried out by collection of data from Central Bank of Nigeria<sup>[6-8]</sup>, Federal Office of Statistics<sup>[9]</sup>, International Cocoa Conference<sup>[10,11]</sup> and Quarterly bulletin of cocoa statistics. Also collected were secondary data on farm gate producer price and output of graded cocoa figures from 1981 to 2003 in Ondo and Ekiti state’s produce Department of Ondo and Ekiti States’ Ministry of Agriculture and Rural Development OSMARD<sup>[12]</sup> and ESMARD<sup>[13]</sup>. A comparison was made between two identified time periods that is the pre-SAP and SAP periods. The pre-SAP period covers 1981 and 1985 while the SAP period covers 1985 and 2003. The data for 1986 were excluded from the various calculations because it was regarded as transition year.

**Analytical techniques:** Time Series and supply analyses were used to estimate the price elasticity of supply under supply analysis in order to determine the effects of deregulation policy on the output and price of cocoa beans in Nigeria between 1981 and 2003.

**The estimation of time series and price elasticity of supply:**

- Time Series Analysis was used to examine the trend of producer prices (Domestic and Farm gate) and annual quantity of graded cocoa beans in Nigeria. Pre and post-deregulation by use of comparison of the price supply response of cocoa. The Ratio of Average Quantity and Price (RAQP) were used as follows.

$$\frac{\sum_{i=1}^n Q_i y}{n}$$

where:

- RAQP = Ratio of Average Quantity and Price
- i = 1, 2, 3, . . . n
- n = Number of years

**Determination of price elasticity of supply:** The elasticity of supply is a technical term used to describe the degree of responsiveness of the quantity of a commodity offered in the market for sale to changes in the factors that affect the supply of a commodity. In supply analysis the price elasticity of supply (Eps) is the only important elasticity measure. Adegeye and Dittoh<sup>[14]</sup>.

The price elasticity of supply measures the relative changes in quantity of cocoa offered for sale in Nigeria to relative change in price within the period of time under review:

$$\begin{aligned} \text{Price elasticity of supply (Eps)} &= \frac{\text{change in quantity supplied}}{\text{Relative change in price}} \\ &= \frac{\text{change in quantity supplied}}{\text{quantity supplied}} \times \frac{\text{Price}}{\text{change in price}} \end{aligned}$$

Or

$$\frac{\Delta Q_s}{Q_s} \times P = \frac{\Delta Q_s}{Q_s} \cdot \frac{P}{\Delta P}$$

Where:

- Q<sub>s</sub> = the quantity of graded output supplied in metric tons
- P = the price of the cocoa in Naira (₦) per metric tons
- ΔQ = change in output of cocoa supplied brought about by change in price (ΔP) per metric tons of cocoa

**RESULTS AND DISCUSSION**

Table 1 showed the output of graded cocoa beans in Nigeria and that of Ondo/Ekiti States. It showed the data on the output of graded cocoa and prices in both Ondo/Ekiti and Nigeria between 1981 and 2003. Both the output and price at the two levels shows fluctuating trends as contained. The volume of cocoa production output declined steadily in the 1980s up to 1987. In 1981 output was 174,000 metric tons. This declined to 140,000 metric tons in 1984 and further to 126,000 metric tons in 1987. This declining output was due to poor price incentive to the cocoa farmers for example, between

Table 1: Quantity of graded cocoa beans and prices overtime in Nigeria and ondo/ekiti state of Nigeria 1981 to 2003

Years	Nigeria	Ondo/ekiti		DPPN ₦	FPPOE₦
	Quantity in metric tonnes	Quantity in metric tonnes	%Contribution		
1981	174.000	95.193	45.29	1.200	1.000
1982	183.536	91.790	47.41	1.300	1.200
1983	184.000	66.936	63.62	1.400	1.300
1984	140.000	87.048	37.82	1.500	1.400
1985	160.000	68.347	57.28	1.600	1.500
1986	148.000	57.705	61.01	6.000	5.500
1987	126.300	72.584	42.53	8.000	7.000
1988	230.000	110.457	51.98	21.000	20.000
1989	256.000	71.214	72.18	8.500	7.500
1990	244.000	72.173	70.42	9.500	8.000
1991	268.000	81.276	69.67	9.000	8.500
1992	295.000	51.620	82.50	16.000	9.500
1993	360.200	78.649	78.17	50.000	49.000
1994	323.000	69.525	78.48	110.000	105.000
1995	203.000	54.749	73.03	100.000	88.000
1996	163.000	53.775	67.01	100.000	95.000
1997	160.000	53.502	66.56	90.000	85.000
1998	165.000	39.761	75.90	100.000	98.000
1999	198.000	44.059	77.75	90.000	85.000
2000	168.000	33.967	79.78	87.000	80.000
2001	186.000	57.477	69.10	180.000	165.000
2002	188.000	63.874	66.02	315.000	295.000
2003	165.000	76.279	63.77	200.000	180.000

Sources: Computed from CBN annual report and statement of Account: Federal office statistics, annual abstract from various issues and ondo and ekiti states ministry of agriculture and rural development 2004. \*DPPN-domestic producer price in Nigeria \*FPPOE- Farm gate producer price in ondo and ekiti states

1980/81 and 1985/86 harvesting seasons, the domestic price of cocoa fluctuated between one thousand, three hundred naira (₦1, 300) and one thousand, six hundred Naira (₦1 600.00) per metric tons. The produce marketing was then handled principally by the cocoa marketing board, whose price stabilization policy denied the farmers the full benefits of the world price of cocoa.

In 1986, the commodity Boards were abolished and export pricing was liberalized by the Federal Government. Thereafter, the marketing of cocoa was handled by private cocoa merchants. At the same time, a new foreign exchange system (The Second Tier Foreign Exchange Market-SFEM) was introduced by the Federal Government as part of Government's Structural Adjustment Programme (SAP). The immediate effect of these two policy measures was a dramatic jump in the domestic price of cocoa. During the 1986/87 harvesting season the domestic price of cocoa jumped to an average of ₦ 7,500 and further increased to an average of ₦ 14,500 in 1987/88 an average price of ₦ 14, 750 per metric tons in 1988/89. Thus, the Nigerian cocoa farmers witnessed what was ably described as cocoa boom, which transformed the standard of living of the cocoa farmers. The market sharp practices attendant to the cocoa bean witnessed at the early part of liberalization era did play a role.

Reacting to this favourable price incentive, the cocoa farmers paid better attention to old cocoa tree while also planting new ones. Consequently, cocoa output increased from 80,000 metric tons in 1986/87 to 200,000 metric tons in

1988/89 season. The very high price of cocoa in 1988/89 season could however, not be explained by the world market prices of cocoa alone which then stood at about £800.00 some (₦17,000 at the then exchange rate of the Naira to the pound sterling). The high price was due mostly to capital flight as those who had surplus money to repatriate from Nigeria used the opportunity to buy cocoa for export and did not bother to bring back the foreign exchange there from to Nigeria. Thus, the 1988/89 boom was an artificial one, meaning that it could not be sustained<sup>[15]</sup>.

The cocoa price witnessed a dramatic crash in 1988/89 season, when the price tumbled from ₦14, 750 in 1989/90 to an average of ₦9,000 per ton resulting in colossal losses for both farmers and cocoa buyers. The price however, marginally recovered in January, 1990 rising to between ₦6,000 and ₦7,000 per tons and reaching a peak of ₦ 9,500 per ton in April/May 1990.

The price again declined to about N 9,000 in July-August, 1990. The decline in cocoa price since late 1989 is a true reflection of world market price of cocoa which has declined from £1,200 per metric ton in 1985/86 to £600 per metric tons in January, 1990 at the London terminal market. As the cocoa boom of the early part of liberalization era could not be sustained because it was an artificial one caused by sharp market practices.

As a result of the declining price incentive in 1989/90 season, cocoa output marginally declined to 244,000 metric tons. As detailed in Table 1 Domestic producer

price of cocoa increased from ₦16,000 in 1992 to ₦110,000 in 1994, nose dived to an average price of ₦94,500 between 1995 and 2000. Under the period in review, Nigeria cocoa output increased from an average of 135,000 metric tons in 1991 to an average of 140,000 metric tons in 1994 while the corresponding average producer prices as at the time under review were ₦12, 500 in 1991 and ₦92,000 in 1994. The increase output may not be unconnected with the motivating producer price incentives prevailing as at that time while the nose dive in output from 153,000 to 140,000 metric tons between 1995 and 2000 has to do with relative price down trend of the period. The short run elasticity of cocoa output during the period 1991 to 1994 was 0.005.

Producer prices witnessed increase from ₦180,000 in 2000/2001 to an unprecedented price of over ₦300,000 per metric tons in 2002; while the output within the period moved from 168,000 to 188,000 metric tons indicating a price elasticity of supply of 0.375. The unprecedented producer price of 2002/2003 of ₦315, 000/₦200, 000 was not unconnected with the crisis in Ivory Coast (Cote' d'Ivoire) that happens to be the world leading cocoa producers. Cote' d'Ivoire accounts for about 45% of world cocoa production.

### CONCLUSION

The study revealed that producer prices and output of graded cocoa fluctuated but output and prices increased more during post deregulation than that of pre-deregulation period. The study further showed that the volume of cocoa declined steadily pre-deregulation from 174,000 metric tons in 1981 to 160,000 metric tons in 1985 while the output increased post deregulation from 126,000 metric tons in 1987 to 268,000 in 1991. The price increased pre-deregulation era from ₦12,000 per metric ton in 1981 to ₦1,600 per metric tons in 1985 while the price increase post deregulation era from ₦8,000 per metric tons in 1987 to ₦9,000 per metric tons in 1991.

The declining price incentive from ₦8,500 to ₦9,500 in 1989/90 resulted in declining output from 256,000 metric tones to 244,000 metric tones Domestic producer price of cocoa increased from ₦16,000 in 1992 to ₦110,000 in 1994 while the price nose dived to an average price of ₦94,500 between 1995 and 2000. Producer prices witnessed increase from ₦180,000 in 2000/2001 to an unprecedented price of over ₦300,000 per metric tons in 2002 followed by a decline in price to ₦200,000 and output supply of cocoa from 188,000 metric tons to 165,000 metric tons in 2003.

In conclusion, price elasticity of output of cocoa pre-deregulation is less than that of post deregulation

since the relative change in output of cocoa supplied to relative change in price per metric tons of cocoa post deregulation was less than the relative change in output of cocoa supplied relative to change in price per metric tons of cocoa pre-deregulation in Nigeria.

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