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Full Length Research Paper

Trade Policy and Nigeria Rice Economy

***Busari Ahmed. O and Idris-Adeniyi K.M**

Department of Agricultural Economics and Extension, Osun State University, Osogbo College of Agriculture, Ejigbo Campus, Osun State, Nigeria

Corresponding Author's E-mail:busariahmed2008@yahoo.com, hamed.busari@uniosun.edu.ng, kawtharalabi@yahoo.ca

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Rice is an important crop in the economy of a developing nation like Nigeria. Available statistics have shown that the country is yet to attain self sufficiency in rice production. Hence, government had to retort to massive importation in order to bridge the supply-demand gap. Rising bills of rice importation over the years have been depleting the country's foreign reserves. This had led to the evolution of three (3) trade policies regime (the pre ban period (1970-1985), the ban period (1986-1995) and post ban period (1997-2010)) by successive government to arrest this trend. This study analyzed the response of domestic production and demand of rice to importation under these policies regime. Secondary data on domestic production, demand and importation of rice from 1970 to 2010 were analyzed with both descriptive and inferential statistical tools. Descriptive analysis results showed that the mean domestic production of rice for pre ban, ban and post ban period were 728.87, 2165.82 and 6293.33metric tons respectively. While the mean domestic demand of rice was 1214.19, 3525.00 and 3931.17 metric tons during the pre ban, ban period and the post ban period. Analysis of variance (ANOVA) results indicated that there is significant difference in the means of domestic production and demand of rice during these periods. The elasticity coefficients for domestic production and demand for pre and post ban are 0.98, 1.60, -0.15 and 0.14 respectively. The study concluded that government should stimulate expansion of domestic production of rice while phasing out rice importation gradually.

Keywords: Supply-demand gap, import bills, Agricultural transformation and Elasticity

INTRODUCTION

Globally, rice is a very important food crop. It is an ancient crop consumed as healthy and staple food by more than half of the world population. Rice is consumed by over 4.8 billion people in 176 countries and is the most important food crop for over 2.89 billion people in Asia, over 40 million people in Africa and over 150.3 million people in America with estimates based on FAO report of 1996. More than 90% of global production occurs in tropical and semi-tropical Asia (Daramola, 2005).

Rice is cultivated in all agro ecological zones of Nigeria. This crop occupies about 1.77 million hectares of arable land in Nigeria. It ranked sixth after sorghum, millet, cowpea, cassava and yam (CBN, 2003). Rice accounts for about 12 percent of the total cereals produced in Nigeria (CBN, 2004).

Rice is a very important staple food in the diet of the estimated 120 million Nigerians. It is consumed in various forms but the most popular is as grains. The value of Nigeria's rice industry is estimated to be about US $ 5.86 billion (as at 2002) made up of US $ 2.2 billion of imports and US $ 3.66 billions of domestic production. The value of the industry is expected to rise to about US $ 7.98 billions by 2006 at the current growth rate of 10% per annum. Nigeria is West Africa's largest producer of rice, producing an average of 3.2 million tons of paddy rice (~ 2million tons of milled rice) for the past 7-years (Daramola, 2005). The demand for rice in Nigeria has been soaring. Rising demand was partly the result of increasing population growth, increased income levels, rapid urbanization and associated changes in family occupational structures. The average Nigerian now consumes 24.8 kg of rice per year, representing 9% of total caloric intake.

Nigeria's production and consumption of rice have increased significantly since independence. However, the production increase has been insufficient to match that of consumption, necessitating increased rice imports

Table 1: Domestic Supply, Domestic Demand and Imports of Rice in Nigeria (1974-2010).

Year	Domestic Production (000 tons)	Estimated Domestic Demand (000 tons)	Imports (000 tons)	Deficit and Surplus
1974	525	600	4.80	-70.20
1975	515	600	5.70	-78.30
1976	387	735	45.30	-302.70
1977	408	1050	413.30	-228.70
1978	514	1088	651.20	+77.20
1979	752	1230	568.00	+90.00
1980	1090	1415	450.00	+125.00
1981	1242	1595	600.00	+247.00
1982	1250	1736	651.00	+165.00
1983	1279	1925	660.00	+64.00
1984	1300	3080	545.00	-235.00
1985	800	2109	100.00	-1209.00
1986	1780	2690	-	-910.00
1987	1780	2890	-	-1110.00
1988	2000	2190	-	-910.00
1989	2020	3495	-	-1380.00
1990	2120	3500	-	-1380.00
1991	2180	3505	-	-1325.00
1992	2200	3510	-	-1310.00
1993	2300	3515	-	-1215.00
1994	2420	3517	-	-1097
1995	2500	3600	-	-1100
1996	2525	3608	-	-1083
1997	2608	3609	1001.00	0000.00
1998	2620	3612	992.00	0000.00
1999	2720	3615	895.00	0000.00
2000	2800	3618	818.00	0000.00
2001	2808	3620	812.01	0000.00
2002	2928	3000	1232.41	+1160.00
2003	3116	3200	1600.00	+1516.00
2004	3334	3400	1350.00	+1284.00
2005	3567	4500	1040.30	+107.00
2006	4042	4800	9631.40	+8873.00
2007	3186	5000	9857.70	+8043.00
2008	4179	5200	1862.00	+841.00
2009	3403	5400	1862.02	+841.00
2010	3504	6000	1762.01	-734.00

Source: Computed from FAOSTAT Data base

to make up the shortfall. Since the 1970's, during the years prior to the ban on rice importation (prior to 1986), there was an increase in rice imports. This was followed by a decline between the mid-1980 and the mid-1990's when the ban was in place and then another upward surge from the late 1990's. While it was illegal to import rice into the country in the ban era, illegal importation of the commodity through the country's borders persisted during this period (Akande 2003). In the post-ban period (1995– present), the prohibition of rice was lifted but in the last administration an import duty of 120 percent was imposed on the commodity. In 2006 the duty was reduced to 50 percent (Reuters 2007). It returned to 100 percent and was temporarily suspended in 2008 due to the high cereal prices. Despite the import duty and unstable rice import quantities, rice imports into Nigeria still remain positive (Liverpool et al, 2009).

The major problem identified in the production and consumption of rice in Nigeria is that of the demand-supply gap for rice. The domestic production of rice was estimated to be 3 million tonnes in 2004. The current demand then amounts to 5 million tonnes (NAMIS, 2004). There is/was a demand-supply gap of 2 million tonnes per annum for rice in Nigeria. going by FAOSTAT (2006) data, rice self-sufficiency ratio over the period 1990 – 2004 was less than one (Rahji and Omotesho, 2006).This indicated that Nigeria is self-insufficient in rice production (Table 1).

In the production and consumption of rice in Nigeria, there is the problem of opportunity cost of foreign

Table 2: A Taxonomy of Nigeria's Trade Policy on Rice

Period	Policy Measure
Prior to April 1974	66.6% tariff
April 1974-April 1975	20% tariff
April 1975-April 1978	10% tariff
April 1978-June 1978	20% tariff
June 1978-October 1978	19% tariff
October 1978-April 1979	Imports in containers under 50kg were banned
April 1979	Imports under restricted license only Government Agencies.
September 1979	6 month ban on all rice imports.
January 1980	Import license issued for 200,000 tones of rice.
October 1980	Rice under general import license with no quantitative restrictions.
December 1980	Presidential Task Force (PTF) on rice was created and it used the Nigerian National Supply Company to issue allocations to Customers and traders.
May 1982	PTF commenced issuing of allocations directly to customers and traders in addition to those Issued by NNSC.
January 1984	PTF disbanded. Rice importation placed under general license restrictions.
October 1985	Importation of rice (and maize) banned Introduction of SAP and the abolition of Commodity Boards to provide production incentives to farmers through increased producer prices.
July	100% tariff
1996	50% tariff
1997	50% tariff
1998	50% tariff
1999	50% tariff
2000	85% tariff
2001	150% tariff
2003	50% tariff
2006	Duty temporarily suspended
2008	Duty re introduced
2009	5 to 30 % tariff
2010	30-50 % tariff
2011	50% tariff

Adapted from Daramola, 2005
Sources: Sutcliffe and Ayomike, 1986; Federal Government Budgets, 1984-1986, 1995-2000 SAP and the Nigerian Economy, 1987; http://oryza.com/africa/nigeria/index.shtml

exchange used in the importation of rice. In 1990, Nigeria imported 224000 metric tonnes of rice valued at $US60 million. Importation of rice rose to 345500 metric tonnes in 1996 with a value of $US130 million. By 2001, rice import increased to 1.51 million metric tonnes valued at $US288.1 million (FAO, 2003). In 2003, Nigeria imported rice worth over $US700 million (Bello, 2004), Rice importation was over 5 million tonnes as at 2007, which was equivalent of over $US 800 million in scarce foreign exchange. The fact, that this constitutes a drain on the foreign reserve/exchange of the nation cannot be overemphasized, but it requires the strongest emphasis in terms of economic growth and development of the country.

Several efforts have been made to improve rice production in Nigeria. One key player was the Presidential Initiative on rice (2004–2007) which aimed at addressing the widening demand-supply gap in rice production and attaining self-sufficiency, as well as reducing the huge import bill on rice. The Presidential Initiative proposed a national rice project with the following highlights: private sector led, based on an intensification policy, NERICA varieties to be used for upland areas while other varieties adaptable to all agricultural zones of the country would also be used, and the provision of certified rice seeds by the government. To achieve this, and in pursuance of its rice self-sufficiency policy, the Federal Government released N1.5 billion for multiplication and distribution of certified rice seeds (Bello 2004; USAID 2003).

The current Federal government of Nigeria led by President Goodluck Jonathan had launched massive domestic production of rice under her agricultural transformation agenda which is expected to reduce the supply-demand gap of the commodity in the country

From an historical perspective, successive government has implement various trade policies to reduce rice import and encourage domestic production (Table 2), however, Nigeria's rice policy can be discussed in reference to three (3) important periods.

Table 3: Descriptive Statistics of Domestic Production, Domestic Demand and Imports of Rice under the Three (3) Trade Policies Regime

Pre Ban Period (1970-1985)	**Mean**	**Standard Deviation**
Domestic Production	728.87	383.62
Domestic Demand	1214.19	728.20
Imports	297.56	293.90
Ban Period (1986-1995)	**Mean**	**Standard Deviation**
Domestic Production	2165.82	259.33
Domestic Demand	3525.00	488.943
Post Ban Period (1996-2010)	**Mean**	**Standard Deviation**
Domestic Production	6293.33	1186.90
Domestic Demand	3931.17	739.48
Imports	2534.91	3220.20

Source: Data Analysis, 2012

Table 4: Analysis of Variance for Domestic Production and Demand of Rice during the Pre Ban, Ban and Post Ban Period.

Domestic Production	**Source of variation**	**Degree of freedom**	**Sum of squares**	**Mean of Squares**	**F-value**
	Between	2	21500	10750	3.59
	Within	35	1350000	38571.43	
Domestic Demand	**Source of variation**	**Degree of freedom**	**Sum of squares**	**Mean of Squares**	**F-value**
	Between	2	56240005	28120003	61.05
	Within	35	16120754	460593.0	

Tabular F (2, 36) at P = 0.05 = 3.35

Source: Data Analysis, 2012

These are the pre-ban, ban and post-ban periods. The pre-ban period is the era prior to the introduction of absolute quantitative restriction on rice imports (i.e., 1971-1985). This epoch can also be classified into two – the pre-crisis (1971-1980) and the crisis period (1981-1985). The pre-crisis period was largely characterized by liberal policies on rice imports though ad hoc policies were put in place during times of interim shortages. During the crisis period, more stringent policies were instituted, though outright ban was not a major feature.

In the ban period (i.e., 1986-1995), it was illegal to import rice into the country. In the post-ban period (1995 – date), quantitative restrictions on rice importation were lifted while the country generally adopted a more liberal trade policy towards rice.

The elasticity concept is simply a way of measuring the effect of a change in an independent on the dependent variable in any functional relationship. It measures the degree of responsiveness of the dependent variable to a change in the independent variable.

This study analyzed the response of domestic production and demand of rice to importation under these policies regime.

METHODOLOGY

Data used in the study were collected from secondary sources such as publications of Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), West Africa Rice Development Association (WARDA) and Food and Agriculture Organization Statistical data base (FAOSTAT). Data were collected on domestic supply, domestic demand and import supply of rice from 1974-2010. Descriptive statistics that were used in data analysis include means and standard deviation. Analysis of variance (ANOVA) and elasticity coefficients were the main inferential statistics employed in the study.

RESULTS AND DISCUSSION

The results of the descriptive statistics are shown in Table 3. The results indicated an increase in the average domestic production of rice from 728.87 metric tons in the pre ban period to 2165.82 metric tons in the ban period and finally to 6293.33 metric tons in the post ban period. This implied that domestic production of rice is increased across these three periods. The trend in domestic demand of rice is similar, with an increase from 1214.19 metric tons in the pre ban period to 3525.00 metric tons in the ban period and eventually to 3931.17 metric tons in the post ban period. Rice imports increased from 3931.17 metric tons in the pre ban period to 2534.91 metric tons in the post ban period.

The result of Analysis of Variance (ANOVA) in Table 4 show that there is a significant difference in the means of domestic production and demand of rice during the pre ban, ban and post ban period. This is because F

Table 5: Elasticity of Domestic Production, Domestic Demand relative to Imports of Rice under the Three (3) Trade Policies Regime

Pre Ban Period (1974-1985)	**Elasticity Coefficient**
Domestic Production	-0.98
Domestic Demand	1.60
Post Ban Period (1996-2010)	**Elasticity Coefficient**
Domestic Production	-0.15
Domestic Demand	0.14

Source: Data Analysis, 2012

calculated is greater than tabular F value (3.35) at p =0.05.

The elasticity coefficient of domestic production and demand of rice relative to rice imports in the pre ban period as presented in Table 5 are -0.98 and 1.60 respectively. The implication of this result is that a 10 percent change in rice imports will induce a 98% reduction in domestic production of rice, a similar increase in rice imports will cause a 160% rise in domestic demand of rice.

The results for the post ban period as shown in the same table indicated that a unit rise in rice imports will trigger a 0.15% decrease and 0.14% increase in domestic production and demand of rice respectively.

CONCLUSION AND RECOMMENDATIONS

This study analyzed the response of domestic production and demand to rice importation under three (3) trade policies regime in Nigeria. The results of descriptive analysis indicated an increase in domestic production and demand of rice across these periods, however, domestic production of rice could not meet up with domestic demand thus importation becomes necessary.

The results of analysis of variance and elasticity coefficients indicated that rice imports exercise a significant influence on domestic production and demand of rice.

The foregoing suggests that enhancing expansion in domestic production of rice through favorable agricultural development policies especially by government investment in new rice production technology will reduce rice supply-demand gap which will eventually phase out rice importation gradually.

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