

## The Impact of Cashew Production on Nigeria's Economy

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### Abstract

Cashew production in Nigeria has been identified and acknowledged by the government as a means of foreign exchange contributing to the gross domestic product of the economy since 1961, a year after Nigeria's independence. However, little attention has been paid to increase the production of this all-important cash crop. The economic benefits of the crop are not in doubt. This necessitated a study to empirically examine the impact of cashew production to the gross domestic product. The study adopts survey method and secondary data were utilised. Collected data were analysed using descriptive statistics, Pearson correlation, t-test and regressions with the aid of Statistical Package for Social Science (SPSS 20). The result shows that cashew production and export significantly impacts positively on the gross domestic product of Nigeria. ( $r = .082$   $p < 0.05$ ,  $t = 3.594$ ,  $F = 0.127$ ,  $DW = 0.499$ ). The study concludes that cashew production and export have positive impacts on the gross domestic product of Nigeria though very weak. The study recommends that governments at all level including organised private sectors and well-meaning individuals should exploit this industry to diversify the States' economy, fight unemployment as well as boost food security in Nigeria.

**Keywords:** Cashew Production, Gross Domestic Product (GDP) and Economy

**1.1 Background of the Study:** The major fruits produced in Nigeria include mango, pineapple, plantain/banana, citrus, guava, pawpaw, while vegetables include onion, tomato, okra, pepper, amaranthus, carrot, melon, Corchorus olitorus (ewedu), hibiscus sabdariffa (sobo), Adansonia digitata (baobab leaves) etc (Ibeawuchi, Okoli, Alagba, Ofor, Emma-Okafor, Peter-Onoh, and Obiefuna, 2015). Edible tree fruits and most crops resources are utilised in every part of South-Eastern Nigeria but their rate of utilisation, reasons and parts of species utilised in Enugu State is yet to be fully documented. Edible fruits and crops are crucial in the life of man. Many households in rural areas depend on edible products for survival, balanced nutrition and maintenance of healthy living (Ijeomah and Ugwu, 2016). Seeds, fruits, nuts, leaves, oils, nectars and tubers, etcetera are rich in energy and nutrients including vitamins, proteins, minerals, fats and oil. Thus, there is increasing awareness and recognition world over that fruits contribute significantly to the rural economy, providing goods and services are marketed for revenue generation. Cashew, mango and dactyloides edulis (Ube Oka) ranks among the widely domesticated edible trees. Production of these fruits and crops among others can generate high revenues and make rural economies stronger; improve food security and nutrition; create new jobs and economic opportunities; help in creating raw materials for pharmaceutical industries in Enugu State and; help government efforts in improving maternal and child health in the State. It would be recalled that in the time past and even now, these trees were not only sources of income but an important food and nutrition supplement among many households.

Food and Agricultural Organisation (FAO, 1992) has projected that about 790 million people are terminally undernourished in the developing regions of the world like Nigeria. Fruits and vegetables are believed to play a very important role in the nutrition and health (Hulme, 1971; Nagy and Shaw, 1980; Ibeawuchi, et al. 2015). Thus, horticultural crop production such as cashew creates jobs. On average, it is estimated that tree crops production provides twice the amount of employment per hectare of production compared to cereal crop production (Ali, Farooq and Shih, 2002; Ibeawuchi, et al. 2015). Hence, surveys show that some horticultural crops or their derivatives form the main raw materials for most of the fruits and vegetables processing industries in Nigeria (Asoegwu, 1989; Ibeawuchi, et al. 2015). These fruits include but not limited to cashew. Nevertheless, in spite of various initiatives aimed at improving the horticultural sub-sector, the sector still remains relatively underdeveloped. This also reflects the problems in the agricultural sub-sector that include

inadequate knowledge and technology of production, insufficient planting materials, land tenure, poor extension services and insufficient post-harvest facilities (Babatola, 2004; Ibeawuchi, et al. 2015). Horticultural crop production in Nigeria has also been hampered by the policy and fiscal constraints of the governments which resulted in very little attention in the national perspective plan for agricultural development (Oseni, 2004; Ibeawuchi, et al. 2015). Similarly, domestication of indigenous fruit trees has received far less attention than that of annual crop plants. It is important to note that domestication of perennial trees is a multidimensional process that involves identification of superior trees, production, management, diffusion and subsequent adoption of the desired germplasm (Simons and Leakey, 2004; Makueti, Tchoundjeu, Van Damme, Kalinganire, Asaah and Tsoheng, 2015).

**1.2 Statement of the Problem:** The Cashew industry in Nigeria faces the following problems: bad trade practices and bad image, which results in a low value for export. Discounted price and low quality of raw nuts. Export of non-value-added product (raw nuts) and low export of value-added products (kernels) results in low foreign earnings and loss of employment opportunities. Despite various initiatives of government aimed at improving the horticultural sub-sector, the sector still remains relatively underdeveloped. As we noted earlier, challenges facing horticultural sub-sector also reflects the problems in the agricultural sub-sector of the economy that include inadequate knowledge and technology of production, storage, marketing, insufficient planting materials, land tenure, poor extension services and insufficient post-harvest facilities among others. Indeed, cashew crop production in Nigeria has also been hampered by the policy and fiscal constraints of the governments. It has received very little attention in the national perspective plan for agricultural development. There is a little empirical evidence to prove the contribution of cashew production to the gross domestic product to both Enugu state and indeed, Nigeria. Whether production of cashew can help the government achieve food security, reduce poverty and boost employment opportunities especially in Enugu State is a concern to this researcher. In the light of the foregoing, this study examines the impact of cashew production to the gross domestic product.

**1.3 Objective of the Study:** The main objective of this paper is to examine the impact of cashew production to the economy. However, specific objective sought in the study are to:

- i. Ascertain the economic potentials of cashew production in Enugu State, Nigeria;
- ii. Highlight the uses that cashew products can be put to and;
- iii. Examine the impact of cashew production and export to the gross domestic product of Nigeria.

#### **1.4 Research Question/Hypothesis**

This study opted for one research question and a hypothesis in order to empirically establish whether or not cashew production and export significantly impacts the gross domestic product positively or not. Thus, our research question is: To what extent does cashew production and export impacts on the gross domestic product of Nigeria? However, the test hypothesis is: Cashew production and export significantly impacts positively on the gross domestic product of Nigeria.

**2.1 Cashew Production:** Cashew was introduced into Nigeria between of the crop is rapidly spreading to all agro-ecologies 15th and 16th centuries by the Portuguese explorers (Ventakaramah, 1976; Togun, 1977; Hammed, Anikwe and Adedeji, 2008). For the purpose of controlling erosion and the afforestation schemes of the defunct Eastern Nigeria, the plant was introduced. Hence, cashew became a popular crop in 1953 and then, planted on a large scale principally for the nuts, afforestation and erosion prevention programmes in the escarpment areas of Udi, Mbala, Oghe, Oji, Isuochi and Kingie in Eastern Nigeria by the defunct Eastern Nigeria Development Corporation (Togun and Igbokwe, 1987; Akinwale and Esan, 1989; Hammed, et al, 2008). In Western Nigeria, the first planting of cashew started in the 16th century at Agege in Lagos (Ventakaramah, 1976; Hammed, et al, 2008). The commercial cultivation actually started in the 1950s at Iwo,

Eruwa and Upper Ogun in the defunct Western Nigeria by the then Western Nigeria Development Corporation (WNDC) (Togun, 1977; Sanwo, Kuti and Osundolire, 1972; Hammed, et al, 2008). Cashew was thereafter, introduced into the Middle Belt and Northern Nigeria from the Eastern and Western Nigeria (Hammed, et al, 2008).

**2.1.1 Cashew Tree Products and Uses:** Cashew was originally used in Africa in afforestation schemes or as a fire protection barrier around forest demarcations (Goujon, Lefebvre, Leturcq, Marcellesi, and Praloran, 1973; Catarino, Menezes and Sardinha, 2015). Currently, it is recognised as one of the most important tropical crops and referred to as the “poor man’s crop, rich man’s food”, and is grown for its nuts (Jaffee, 1994; Catarino, et al, 2015). Cashew kernels which have a high nutritional and commercial value are used for human consumption after decortication. Cashew nut processing industry is an important economic activity in several countries such as India, Brazil and Vietnam and has also recently gained prominence in the Ivory Coast and Nigeria. The main steps involved in cashew processing are as follows: drying of freshly harvested raw seed for storage, soaking of the seed, steam cooking, hot oil roasting or dry roasting, shelling, separation, kernel drying, peeling and packaging (Catarino, et al, 2015).

The cashew nut shell liquid (CNSL) or cashew balm is a highly corrosive oil produced in the large cells of the pericarp, with numerous industrial and medical applications (Orwa, Mutua, Kindt, Jamnadass, and Simons, 2009; Catarino, et al, 2015). Cashew apple can be eaten fresh or mixed in fruit salads and is important in several countries. Drinks are also prepared from the juice, as well as sweets and jams (Behrens, 1996). The high sugar content of cashew juice permits the making of a fermented beverage, cashew wine, which can be distilled to make spirits. Even though apple juices, jams and spirits have a long tradition of consumption; marketing cashew apple by-products are not internationally extensive. Wood from cashew tree is fairly hard and it has a density of about 500 kg m<sup>-3</sup> (Orwa et al., 2009) which is used as timber, firewood and in the production of charcoal (Catarino, et al, 2015). Given its high tolerance to external conditions and moderate demand on soil characteristics, this crop has been planted in poor soils to prevent erosion and to recover the fertility of land degraded by annual crops. The tree is also suitable for use in agroforestry systems and can be intercropped with both annual and perennial herbs as well as trees and shrubs (Behrens, 1996; Orwa et al., 2009; Catarino, et al, 2015).

**2.1.2 Strategies for Cashew Production Development in Nigeria:** Hammed, et al, (2008) states that in order to develop the cashew production subsector in Nigeria, all stakeholders must religiously work together and formulate developmental policies for cashew research and development in Nigeria. Such policy may include the following: immediate and periodic broadening of Nigerian cashew gene-pools through the exploration of the Brazilian heavier nut-size germplasms; establishment of cashew seed garden centers at strategic places accessible to the farmers; immediate and periodic national cashew survey; ecological protection through strict legislation against bush/cashew farm burning in order to protect cashew plantations from annual destruction through burning; constant awareness creation on economic potentials and the health benefits of cashew product consumption; youth encouragement in cashew-based agriculture; encouragement of the local processing capacity through value-addition and gradual discouragement of exportation of raw cashew nuts; maintenance of the organic nature of Nigerian cashew through monitoring of chemical inputs, (chemical fertilizer, insecticides, fungicides and herbicides) in cashew cultivation is essential in order to guard against the contamination of the organic nature of Nigerian cashew which is currently a pride; constitution of Enugu State Cashew Development Commission (ESCDC); establishment of Enugu State Consolidated Cashew Trust Fund (ESCCTF); periodic acquisition of modern research equipment/materials and manpower; encouraging teaching and learning of horticulture in schools; mass cashew tree planting campaign to be spearheaded by State Government in all the Local Government in Enugu State; establishment of cashew forest reserves in all the Local Government Areas in the State and; employment of forest guards to ensure compliance towards protecting our forests and forest resources.

**2.1.3 Constraints to the Production of Cashew in Nigeria:** There are some factors militating against rapid development of cashew production sector in Nigeria. These include: perpetuation of cashew landraces (old/unimproved stock) on Nigerian cashew plantations; low funding for cashew research activities; lack of awareness on the economic potential of cashew; the problem of compensatory nut yield (low-nut yield of the jumbo nut-size, which appear compensatory to its heavier nut-size needs to be improved upon in order to have the expected development in the sub-sector); entomological/pathological problems (problems associated with its insect pest complex increasing to over 286 species have been reported so far) and; vast differences in cashew ecology (cashew ecology cuts across all agro-ecological zones of the country characterized with the occasional rainstorm/rainfall during the dry season, when the cashew is at peak fruiting period, affect the quality of the maturing nuts) (Hammed, et al, 2008).

**2.1.4 Viability of Cashew Cultivation:** Presently, production of cashew in Enugu State is gradually dwindling because little or no attention is given to the cultivation of tree plant. Enugu State used to be ranked highest in the production of cashew in South-East. However, our investigation shows that the fortune of the State in cashew production may soon be over if urgent actions are not taken to arrest the situation now before it is too late. It is important to state here that the market viability of the product both locally and internationally is not in doubt. Hence, cashew nuts command a good price at the markets and this can be a veritable source of foreign exchange for the State. We also note here that cashew plantations can provide thousands of job to the teeming youths as a vocational job, permanent employment for the unemployed and the underemployed men and women in the State if only government can pay attention to it.

**2.1.5 Gains of Fruits and Crops Production in Enugu State, Nigeria:** There are some identified gains for fruits and crops production in Nigeria. These include:

i. Eradicate extreme hunger and poverty: Fruits and vegetables generate more jobs per hectare, on-farm and off-farm, than staple based agricultural enterprises (Ali, Farooq, and Shih, 2002; Ibeawuchi, et al, 2015). This benefits farmers and landless labourers in both rural and urban areas (Ibeawuchi, et al, 2015). Value addition to fruits and crops generates further employment in the associated agri-businesses and further down the commodity chain from the producer to the consumer.

ii. Achieve universal primary education: Micronutrient deficiencies impair cognitive and psychomotor skills, particularly in young children. These deficiencies can be alleviated through eating a balanced diet, rich in vegetables and fruits. With these improved, micronutrient-rich diets, children's cognitive and psychomotor skills are enhanced. Children who learn more and do well in school are more likely to want to stay in school and their parents are more likely to see the financial benefits of supporting their children's education (Haddad, Alderman, Appleton, Song, and Yohannes, 2002; Ibeawuchi, et al, 2015). Increased education also enhances the ability of the new generation of farmers to adopt more advanced technologies and crop management techniques (Ibeawuchi, et al, 2015).

iii. Promote gender equality and empower women: Fruits and vegetables production, in particular, provides women with economic opportunities. Women are the principal producers of most horticultural crops in developing countries and are predominantly involved in the value-addition activities from production to marketing (Ibeawuchi, et al, 2015).

iv. Improve maternal health: Maternal health depends on having achieved food security during girlhood as well as a diet rich in micronutrients during conception, pregnancy and the first few months after childbirth (von Braun, Swaminathan and Rosegrant, 2004; Ibeawuchi, et al, 2015). The health of women before conception directly impacts their health during pregnancy and childbirth. The majority of pregnant women in developing countries suffer from anemia and other micronutrient deficiencies. This affects both their productivity during pregnancy and can lead to complications for the fetus during and after childbirth. Horticulture can benefit maternal health directly by improving the quality of women's diets (Ibeawuchi, et al, 2015). Fruits and crops are



the most appropriate sources of micronutrients in the diets of these women, and are critical in regions where vegetarian diets predominate.

**2.1.6 Entrepreneur Challenges of Fruits and Crops Production in Enugu State, Nigeria:** There are many challenges facing fruits and crops production in Enugu State. Some of these challenges are: pest and diseases which reduce their shelf lives and affect their appearance which is one important aspect of horticultural crops; poor agricultural pricing and low fertilizer use; low access to agricultural credit; land tenure system; low and unstable investment in agricultural research; poor market access and marketing efficiency; inadequate infrastructure such as adequate water supplies, transport and marketing systems which is generally lacking in Nigeria, giving producers, processors and marketers little incentive to expand operations and this adversely affects input/output cost and supply, reducing farmers' potential income from marketing their products and; postharvest losses of fruit and crops (Ibeawuchi, et al, 2015). Others are: macroeconomic instability, capital inadequacy, inadequate infrastructure, limited human capital, lack of access to foreign markets and low technological capabilities (Oyekanmi, 2004; Chinonye, Akinbode and Onochie, 2015)

### **2.1.7 Strategies for Mitigating some of the Identified Entrepreneurship Challenges:**

- i. Micro-economic instability can be mitigated through: financial discipline, prudent fiscal management, commitment to low inflation and free markets.
- ii. Capital Inadequacy can be mitigated through: Entrepreneurship targeted loans (direct/guaranteed), development of strong financial institutions and provision of tax incentives to encourage investments.
- iii. Inadequate infrastructure can be mitigated through: Private and public provision of infrastructure, shift of government spending to infrastructure provision and encouragement of business clusters/incubators among others.
- iv. Limited human capital can be mitigated through: Giving education high priority in government spending (macro), private technical training programs (micro), and Joint Ventures/Arrangements (JVA) with foreign firms.
- v. Lack of access to foreign markets can be mitigated through: Membership of trading associations (e.g. WTO), provision of information on foreign markets by government agencies, organization of trade fairs and missions for export promotion among others.
- vi. Low technological capabilities can be mitigated through: Development of comprehensive financial infrastructure, and development of viable capital markets (Oyekanmi, 2004; Chinonye, Akinbode and Onochie, 2015).

**2.2 Theoretical Framework:** This adopts Schumpeter's Innovation theory and Kirzner's Alert theory cited in McMullen and Shepherd, (2006). Schumpeter's theory believed that uncertainty does not play a role in entrepreneurial action. This assumption is derived from a belief that opportunity is abundant and readily identifiable. Schumpeter suggests that opportunities originate elsewhere for all prospective entrepreneurs to see. Thus, it is only the adventurous who make the leap, that is, entrepreneurs can be discriminated from others only in terms of the location of their criterion. On the other hand, Kirzner's Alert theory begins in disequilibrium and fulfills the function of an arbitrageur who moves the economy toward equilibrium by rectifying discrepancies in supply and demand. As a behaviour that is necessary for the economy to function properly, entrepreneurial alertness is what happens when the market presents a profitable situation that is successfully exploited by an individual who "fits" the necessary profile (Kirzner, 1973, 1980; McMullen and Shepherd, 2006).

**2.3 Significance of Cashew Production to Economic Growth:** Cashew production is a veritable source of foreign exchange which contributes to the gross domestic product of the country. Dimelu, M. U. and Odo, R. N. (2013) examined production preference and importance of fruits in home garden using one hundred randomly

selected household heads. Data were collected by use of structured interview schedule and analysed using descriptive statistics. The study found that preference was based on input requirement, resistant to pest and diseases, frequency of fruiting, availability of market and others. The study recommends that extension and research should promote, intensify research/training to increase awareness on nutritional and medicinal importance of most fruit species particularly the less preferred to guide against extinction.

Hammed, L. A. Anikwe, J. C. and. Adedeji, A. R (2008) in a study titled “Cashew Nuts and Production Development in Nigeria” looked into the constraints militating against the crop cultivation and formulation of strategies for sustained development. Six different sizes of cashew nuts existed in Nigeria. Six factors were identified to constitute constraints while eleven developmental strategies were formulated. Insect and disease attacks were more devastating threats. Plates of their destructive effects and that of improved cashew material were shown. The study concluded that cashew production may not assume any economic importance in the agricultural framework of the country unless a vigorous campaign is carried out to encourage and attract cashew growers (especially, the youth) through the provision of land and improved planting materials and this should be supported by strong research and extension efforts.

Oni T. O. (2015) conducted a study, “evaluation of economic policy impacts on cashew supply and prospects for enhanced value addition in Nigeria.” This study examined how economic policy variables affect domestic supply and the prospects for diversification of increased cashew to agro-industry. Data for the study included policy variables such as real exchange rate, interest rate, wage rate, and government investment expenditure in agriculture. Data were analysed using simultaneous equation regression model. The study found that variables that significantly affected cashew supply included the price of cashew, the price of a complementary crop, rural wage rate, government investment in agriculture and interest rate on agricultural loans. The study recommends that policy strategies to expand the supply of cashew and enhance diversification to agro-industry should include improved infrastructure that will ensure effective market linkages.

**3.0 Methodology:** The study adopted survey method and secondary sources of data were utilised. The basic variables were cashew and Gross Domestic Product (GDP) over the selected years. Data collected was analysed using Descriptive Statistics, Pearson Correlation, t-test and regressions. The above methods of data analysis were chosen because the variables in this study deals with the test of the relationship. The quantitative data were analysed using Statistical Package for Social Science (SPSS 20).

#### **4.0 Data Presentation and Analysis**

This segment present and analyses selected descriptive, correlation and regression statistics in respect of the variables in the study. Thus, both qualitative and quantitative methods of data analysis were employed in analysing the data generated through the questionnaire using Statistical Package for Social Science (SPSS 20). The parametric test instruments were bivariate (correlation) and simple linear regression to test the hypotheses advanced in the study. This aim of the test relationship between cashew production values exported on gross domestic product.

**4.1 Test of Hypothesis, Interpretation and Decision:** The regression sum of squares (7457245197453.353) is greater than the residual sum of squares (1111975638708588.000), which indicates that more of the variations in the dependent variable is not explained by the model. The significance value of F-statistic (0.127) is greater than 0.05, which means that the variation is explained by the model and did not occur due to chance.

R, the correlation coefficient has a value of 0.82 indicates that there is a positive relationship. Hence, cashew production and export significantly impact positively on the gross domestic product of Nigeria. The R-square which is the coefficient of determination shows that 7% of the variation in cashew production and export is explained by the model. With the linear regression which has the value of 7650165.594, the error of estimate is low.

The Durbin-Watson statistic of 0.499 which is not more than 2 indicates that there is no autocorrelation. Cashew production and export 0.082 indicates that there is a positive and significant relationship on the gross domestic product. Its statistical significance ( $t = 3.594$ ). Therefore, the null hypothesis is rejected and the alternate hypothesis accepted. Thus, we conclude that cashew production and export significantly impacts positively on the gross domestic product of Nigeria.

**5.1 Summary:** In this study, we believe that much has been done to achieve the set objectives. The results provide evidence in support of the achievement of objectives set out for this study. Thus, in the hypothesis, the results based on the descriptive statistics and empirical analysis revealed that: cashew production and export significantly impacts positively on the gross domestic product of Nigeria. ( $r = .082$   $p < 0.05$ ,  $t = 3.594$ ,  $F = 0.127$ ,  $DW = 0.499$ )

**5.2 Conclusion:** The study examined the impact of cashew production on the Nigerian economy. Arising from the results, the study concludes that cashew production and export significantly and positively impacted on the Gross Domestic Product (GDP) of Nigeria. By implication, all tiers of government and investors should look into cashew production as a means of boosting Nigeria's export and foreign exchange that would further impact positively on the Gross Domestic Product of the economy.

**5.3 Implications of the Study:** Findings of the current study could be helpful to government at all levels, communities, investors and the general public who are interested in investing in agriculture in Nigeria especially in cashew production. Thus, such individuals and groups in search of an area of investment should look inward to cashew production for export for a rewarding investment.

**5.4 Recommendations:** Government at all levels as well as individuals, communities and investors should see the abundant opportunities in cashew production and export in Nigeria and seize the opportunity since the prospects on the return on investment are bright and high. The government should enact relevant laws that among others provide capital and; free land for cashew investment in the States. The government, organised private sectors and well-meaning individuals should exploit this industry to diversify the States' economy, fight unemployment as well as boost food security in the States.

**5.5 Contribution to Knowledge:** This study has provided empirical evidence to support the impact of cashew production and export to the Nigerian economy. The results indicate that cashew production and export significantly impacted positively on the Gross Domestic Product (GDP) of Nigeria and will contribute more to the economy only if more and adequate attention is paid to it.

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**APPENDIX**

H<sub>0</sub>: Cashew production and export do not significantly impact positively on the gross domestic product of Nigeria.

H<sub>1</sub>: Cashew production and export significantly impacts positively on the gross domestic product of Nigeria.

**Table 4.2.1: Descriptive Statistics**

|            | Mean       | Std. Deviation | N  |
|------------|------------|----------------|----|
| Year       | 2002.50    | 7.071          | 24 |
| Cashew     | 395038.57  | 281165.945     | 23 |
| Value      | 609822.52  | 1010594.970    | 21 |
| GDP in "M" | 7706137.09 | 7575924.714    | 24 |

Source: Researcher’s Computation, 2017

**Table 4.2.2: Correlations**

|            |                     | Year   | Cashew | Value  | GDP in "M" |
|------------|---------------------|--------|--------|--------|------------|
| Year       | Pearson Correlation | 1      | .774** | .739** | .564**     |
|            | Sig. (2-tailed)     |        | .000   | .000   | .004       |
|            | N                   | 24     | 23     | 21     | 24         |
| Cashew     | Pearson Correlation | .774** | 1      | .520*  | .556**     |
|            | Sig. (2-tailed)     | .000   |        | .019   | .006       |
|            | N                   | 23     | 23     | 20     | 23         |
| Value      | Pearson Correlation | .739** | .520*  | 1      | -.082      |
|            | Sig. (2-tailed)     | .000   | .019   |        | .725       |
|            | N                   | 21     | 20     | 21     | 21         |
| GDP in "M" | Pearson Correlation | .564** | .556** | -.082  | 1          |
|            | Sig. (2-tailed)     | .004   | .006   | .725   |            |
|            | N                   | 24     | 23     | 21     | 24         |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher’s Computation, 2017

**Table 4.2.3: ANOVA<sup>a</sup>**

| Model |            | Sum of Squares       | df | Mean Square        | F    | Sig.              |
|-------|------------|----------------------|----|--------------------|------|-------------------|
| 1     | Regression | 7457245197453.353    | 1  | 7457245197453.353  | .127 | .725 <sup>b</sup> |
|       | Residual   | 1111975638708588.000 | 19 | 58525033616241.480 |      |                   |
|       | Total      | 1119432883906041.400 | 20 |                    |      |                   |
| 2     | Regression | .000                 | 0  | .000               | .    | . <sup>c</sup>    |
|       | Residual   | 1119432883906041.400 | 20 | 55971644195302.070 |      |                   |
|       | Total      | 1119432883906041.400 | 20 |                    |      |                   |

a. Dependent Variable: GDP in "M"

b. Predictors: (Constant), Value

**Table 4.2.4: Statistics**

|                        |         | Year              | Cashew             | Value              | GDPinM              |
|------------------------|---------|-------------------|--------------------|--------------------|---------------------|
| N                      | Valid   | 24                | 23                 | 21                 | 24                  |
|                        | Missing | 0                 | 1                  | 3                  | 0                   |
| Mean                   |         | 2002.50           | 395038.57          | 609822.52          | 7706137.09          |
| Std. Error of Mean     |         | 1.443             | 58627.152          | 220529.902         | 1546429.157         |
| Median                 |         | 2002.50           | 485000.00          | 92662.00           | 5093156.00          |
| Mode                   |         | 1991 <sup>a</sup> | 45000 <sup>a</sup> | 10700 <sup>a</sup> | 312140 <sup>a</sup> |
| Std. Deviation         |         | 7.071             | 281165.945         | 1010594.970        | 7575924.714         |
| Variance               |         | 50.000            | 79054288593.257    | 1021302193941.862  | 57394635266562.020  |
| Kurtosis               |         | -1.200            | -1.669             | 1.112              | .366                |
| Std. Error of Kurtosis |         | .918              | .935               | .972               | .918                |
| Range                  |         | 23                | 791500             | 3238976            | 24482099            |
| Minimum                |         | 1991              | 45000              | 10700              | 312140              |
| Maximum                |         | 2014              | 836500             | 3249676            | 24794239            |
| Sum                    |         | 48060             | 9085887            | 12806273           | 184947290           |
| Percentiles            | 25      | 1996.25           | 95000.00           | 54537.00           | 2125588.45          |
|                        | 50      | 2002.50           | 485000.00          | 92662.00           | 5093156.00          |
|                        | 75      | 2008.75           | 636000.00          | 1013313.00         | 10784390.68         |

a. Multiple modes exist. The smallest value is shown

c. Predictor: (constant)

**Source:** Researcher's Computation, 2017

**Table 4.2.5: Coefficients<sup>a</sup>**

| Model |            | Unstandardized Coefficients |             | Standardized Coefficients | t     | Sig. | 95.0% Confidence Interval for B |              |
|-------|------------|-----------------------------|-------------|---------------------------|-------|------|---------------------------------|--------------|
|       |            | B                           | Std. Error  | Beta                      |       |      | Lower Bound                     | Upper Bound  |
| 1     | (Constant) | 7054153.859                 | 1962761.589 |                           | 3.594 | .002 | 2946046.640                     | 11162261.077 |
|       | Value      | -.604                       | 1.693       | -.082                     | -.357 | .725 | -4.147                          | 2.939        |
| 2     | (Constant) | 6685685.210                 | 1632579.673 |                           | 4.095 | .001 | 3280183.686                     | 10091186.733 |

a. Dependent Variable: GDPinM

**Source:** Researcher's Computation, 2017

**Model Summary<sup>b</sup>**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |          | df1 | df2 | Sig. F Change | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|---------------|
|       |                   |          |                   |                            | R Square Change   | F Change |     |     |               |               |
| 1     | .082 <sup>a</sup> | .007     | -.046             | 7650165.594                | .007              | .127     | 1   | 19  | .725          | .499          |

a. Predictors: (Constant), Value

b. Dependent Variable: GDP in "M"

**Source:** Researcher's Computation, 2017

R = .082

R Square = .007

t = 3.594

Std.E. of the Estimate = 7650165.594

F = 0.127;

Durbin-Watson = .499