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## **COCOA PRODUCTION AND EXPORT IN GHANA**

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### ***Abstract***

*The objective of this paper is to analyse the production and export of Cocoa in Ghana. Concerns about declining output and export of cocoa in Ghana has prompted the necessity of this study. Given the significance of Ghana as the principal producer and exporter of cocoa and a major source of foreign earnings in the country, it is imperative to analyze the production and export trend of the industry. This study review cocoa production and export in Ghana over a 21 year period spanning from 1995 to 2016. Time series data were employed and these were collected from FOA database and other secondary sources from Literatures and books to process the data. We assessed the country's production and export trend by using both empirical and descriptive approaches which were checked by multivariate statistical analysis. The results suggest that total cocoa production and export in Ghana both witnessed an average year-over- year increase of 5.3% and 5.7% respectively. In spite of these improvements observed, there is potential for further improvement and this can be achieved through government support to the subsector.*

Keywords: Ghana, Cocoa, Production, Export, Output.

JEL Classification: C10, Q13

## **1. Introduction**

Cocoa is the main stay of Ghana formal economy. It accounts for 30% of the total export earnings and provides income for about six million people (Anthonio and Aikins, 2009; Gockowski et al., 2011; USDA, 2012). Ghana also plays an important role on the international cocoa market being the second largest producer of cocoa beans in the world after Ivory Coast and representing about 20% of global production (ICCO annual reports). As in most cocoa-producing countries, Ghanaian cocoa is grown by small-holder farmers. The sector employs about 2 million people who are engaged in farming, trade, transportation and processing of cocoa (World Bank, 2011) and provides

In view of the significance of cocoa as a principal export crop and a major source of foreign earnings in Ghana, it is imperative to analyze what the production and export of the industry brings to national development.

Some researchers have attempted to investigate the production and export of Cocoa, Boansi (2013) examined cocoa production in the producing areas and came out with results that revealed a significantly positive relation between current cocoa exports and production. Arguably, increases in exports of cocoa beans stimulate farmers to increase production in the country.

Ndubuto et al. (2010) confirm that cocoa output has a positive influence on export in Nigeria. Daramola (2011) finds a robust positive relationship between world prices and cocoa export in Nigeria and concluded that an inverse relationship exists between farm gate price (producer price) and cocoa exports, as well as between exchange rate and export in the country. Arguably, an increase in producer price is likely to discourage producers from exporting their products. Amoro and Shen (2013) confirm a positive relationship between production and export performance in Cote D'Ivoire.

A study by Rosdi (1991) investigated the main factors that determine the cocoa prices; his model consists of supply, demand and price equations, with stock as the identity. His results show that domestic cocoa prices are determined by prices prevailing in the world market. Domestic stock change is not significant. The world market itself, stock and consumption are the main factors

that influence the behaviour of cocoa prices. World consumption and export demand are significantly influenced by the production index of the industrial nations and price of cocoa. On the supply side, cocoa production is determined by cocoa price lagged by the gestation period. This implies that investment decision on cocoa three to five years earlier is an important factor that determines cocoa supply.

This study seeks to analyze the production and export of Ghana's cocoa and to examine the trend over time.

## **2. Data and Methodology.**

Secondary data, such as books, article journals and annual statistical data from various institutions were used. Annual time series data between 1995 and 2016 were obtained from Comtrade United Nations and the Food and Agriculture Organization (FAO) of the United Nations. The study attempts to analyze the level of production and export of both raw and processed cocoa products in Ghana using empirical analysis of the years under review to determine the rate of growth of the cocoa sector. This method was checked through descriptive statistics analysis.

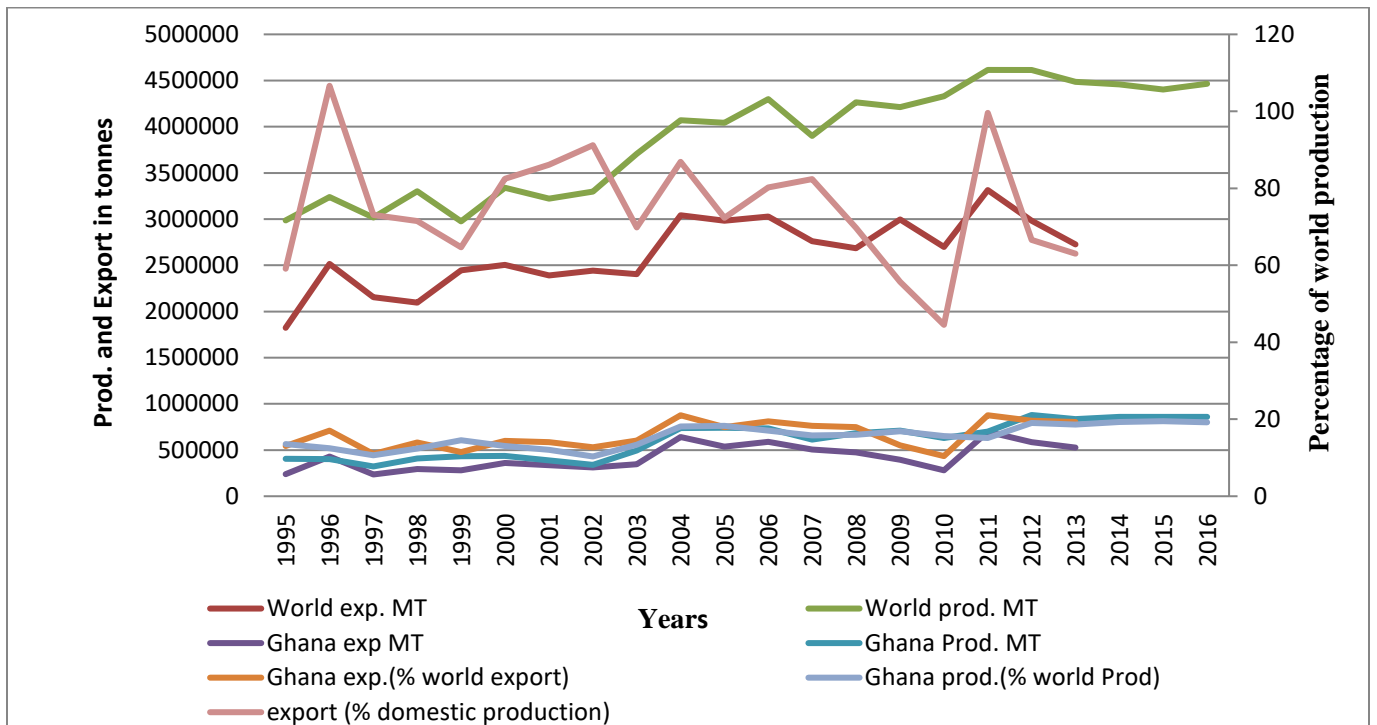
## **3. Results and Discussion**

### ***3.1. Cocoa Production and Export:***

Fig. 1 shows the trend of annual cocoa production and export in the world measured in tonnes and the share of cocoa production and export from Ghana as a percentage of world production and export between 1995 and 2016. As presented in figure 1, annual cocoa bean output in the world has drastically increased from 2.9 million tonnes in 1995 to 4.4 million tonnes in 2016. In the same direction, the annual world cocoa export has also steadily increased from 1.8 million metric tonnes in 1995 to 2.7 million metric tonnes in 2016. Ghana is the second largest cocoa producer and exporter in the world after Ivory Coast. Cocoa bean production in Ghana has been fluctuating in the years under study. The Country has recorded negative growth rates in some years. For instance, the country recorded worst annual change in 1997 (-20%) and highest positive growth rate in 2004 (48%). More so, as shown in figure 1, the annual production of cocoa in Ghana has increased by 112%, from 404 thousand metric tons in 1995 to 859 thousand metric tons in 2016, representing an average year-over-year production increase of 5.3%.

This increment could partly attribute according to Asante-Poku and Angelucci (2013) to the support measures of the government-owned cocoa marketing board COCOBOD. These include increases in farm gate prices, introduction of free pest and disease control programmes, the introduction of packages of hybrid seeds, fertilizers, insecticides and fungicides, improved marketing facilities and the repair of roads in cocoa growing areas. An important factor is also the expansion of the cocoa growing area. Arguably, Ghana is a major supplier of the cocoa crop in the world. Fig. 1 shows that Ghana recorded over 75% average annual cocoa export as a percentage of domestic cocoa bean output.

**Figure 1. World and Ghana Cocoa production and exports (in tonnes and %), 1995-2016**



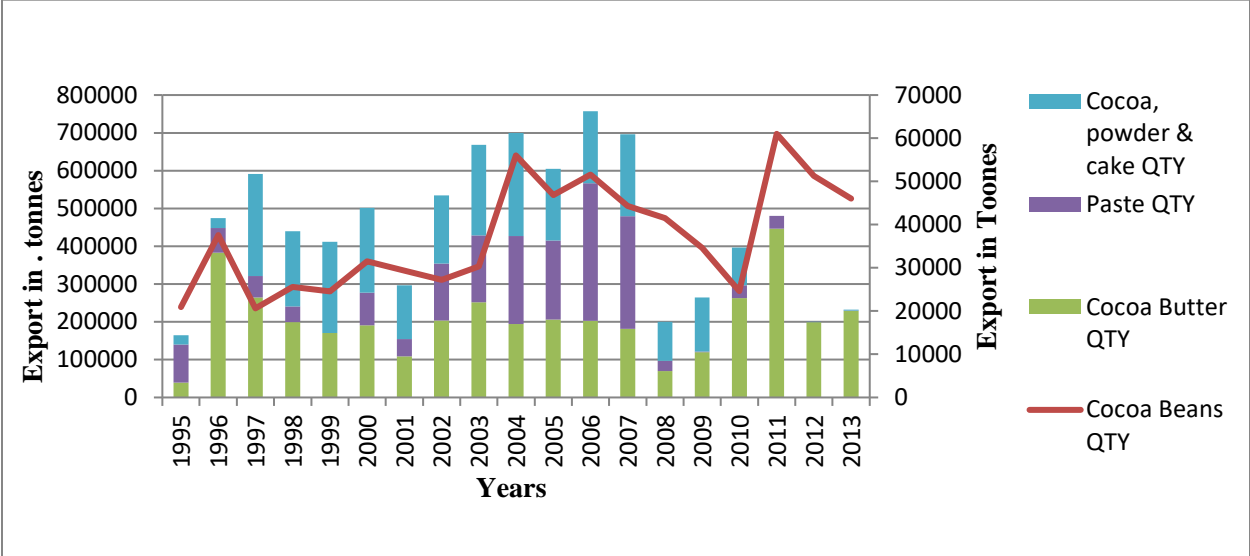
The major cocoa export destinations are Western Europe and North America where cocoa processing industries are located. However, as shown in the figure 1, Ghana's cocoa export as a percentage of world export has fluctuated and decreased from 13% in 1995 to 10.9 % in 1997 and 10.4% in 2010 and drastically increased to 19.31% in 2013. Arguably, cocoa export was not given the expected attention by the Ghanaian government. Figure 1 also shows the export as a percentage of cocoa production in Ghana, in some years, export as a percentage of domestic production was around 59% in 1995 and more than 100% in 1996. This issue is likely from the

data collection; export or output was either under-reported or over-reported. Another reason for these differences could be because, the quantity produced in the previous year is likely to be exported in another year. Cocoa is the largest agricultural export commodity in Ghana. The country’s cocoa exports even though fluctuating; it has steadily increased from 239 thousand tonnes to 526 thousand tonnes between 1995 and 2013. This represents an annual export increase by 120%, and an average year-over-year export increase of 5.7%. The fluctuation of the quantity of cocoa export in the country could be attributed to the world price, domestic production and supply for export, neglect of cocoa related activities by the government, partners and farmers, etc. For instance, both farm gate and the world price over the years were also far from consistent.

**3.2. Cocoa Export and Value Addition.**

Cocoa exports from Ghana are made up of five products, classified into: raw, semi-processed and processed products. Ghana exports cocoa beans, cocoa butter, cocoa powder, cocoa paste and cocoa husks (shells), with export of the latter commencing in the year 1986. In spite of efforts by the government to increase value added in its export of cocoa, less than 20% of cocoa exports for the period 1995-2013 were processed. This implies that, at least 80% of all cocoa exports of the country are in the raw form. The highest achievement in value addition by quantity so far was in the year 1996, where 33, 496 of all cocoa exports were processed (see figure 2).

**Figure 2. Value addition in cocoa exports from Ghana**



Export of cocoa butter increased from 33, 496 tonnes for the year 1996 to 39054 tonnes in 2011. Likewise, the volume of export for cocoa paste increased from 8757 tonnes in 1995 to 26044 tonnes in 2007 and later decreased to drastically to 100 tonnes in 2013. Exports of cocoa powder decreased from 2190 tonnes for the year 1995 to 226 tonnes in 2013. Variations are however observed in quoting of these figures due to differences in export volumes reported by the various research, data management and processing bodies. Based on figures from the agricultural production database of the FAO (FAOSTAT), and as shown above.

### ***3.3.Cocoa Supply Chain of Ghana.***

The cocoa supply chain of Ghana is characterized by a unique marketing arrangement that combines elements of privatization with a strong government presence. The entire supply chain is made up of input suppliers, farmers, collectors/cooperatives, Licensed Buying Companies (LBCs) (and their clerks who engage in purchases at cocoa buying centres), Haulers, Cocoa Marketing Company (CMC) (the wholly-owned subsidiary of the COCOBOD with the sole responsibility to market and export cocoa beans to local and foreign buyers), local processors, local retailers, global marketers/manufacturers and international and local consumers. Activities on the domestic side in the entire chain are supervised by the Ghana Cocoa Board (COCOBOD). In holding firmly unto its high standards in terms of quality of cocoa beans export, the Quality Control Division of Ghana under the auspices of the COCOBOD oversees quality control measures at all stages of the supply chain. Supply of inputs in Ghana is mostly in the hands of the private sector. In line with its strategy to raise productivity and output, the Government of Ghana (GoG), through COCOBOD retains an active role through subsidized input distribution programs targeting cocoa farmers, although farmers bear majority of the cost (World Bank, 2011). The input needs of farmers are met by suppliers through marketing of agrochemicals (including fertilizers, pesticides, and insecticides) and farm equipment. The primary role of farmers in the chain is to ensure availability of cocoa beans through a year-round production. Cocoa production in the country is dominated by smallholder farmers who cultivate on smallholdings with an average size of two to three hectares. About a quarter of production is on a share-cropping basis (Hainmueller et al., 2011). After harvesting of cocoa, the beans are dried and fermented to help develop the unique flavor and other attributes that attract premium for Ghana cocoa beans on the world market. Once all the necessary post-harvest treatments have

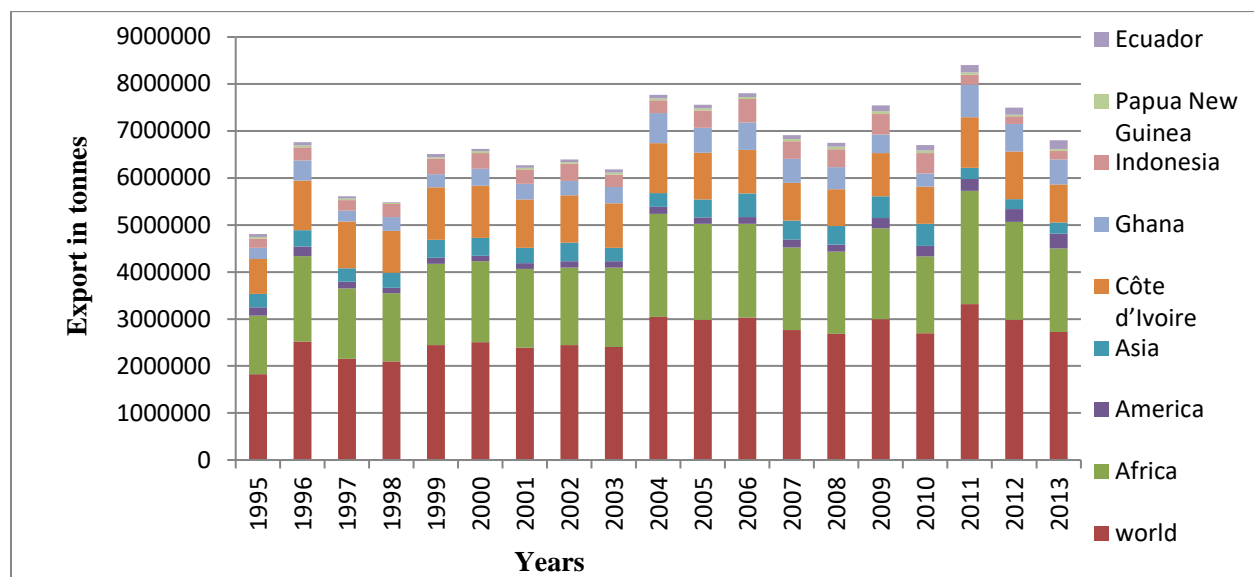


been performed, the beans are sold through either individual collectors or producer cooperatives to cocoa buying centres established in major cocoa producing areas. Such centers are occupied by purchasing clerks of the Licensed Buying Companies. The beans are purchased from the farmers at minimum price set by a Producer Price Review Committee (PPRC) which comprises of COCOBOD officials, farmers' representative, government representatives and representatives of the Licensed Buying Companies (LBCs). By this, the revenues of the LBCs are not based on prices differentials, but rather on volumes of cocoa marketed. Under this condition, LBC's maximize their profits by minimizing "turnaround" times (thus, the period from purchase of the beans at farm gate to selling of them at the takeover centers). After purchasing the cocoa, the LBCs invite the Quality Control Division to grade and seal the cocoa at a fee determined by the PPRC. The graded and sealed cocoa is then evacuated by the LBCs using private cocoa haulers to designated take over points at Tema, Takoradi and an inland port at Kaase (in Kumasi). The rates offered for evacuation are determined by the PPRC, and so are the LBCs paid by the COCOBOD according to margins set by the PPRC. On reaching the take-over points, the graded and sealed cocoa is taken over by officials of the Cocoa Marketing Company. The Cocoa Marketing Company (Ghana) Limited (CMC) is a wholly-owned subsidiary of the Ghana Cocoa Board and has the sole responsibility for the sale and export of Ghana cocoa beans. Its major responsibilities include procurement of graded and sealed cocoa beans from the LBCs at the take-over points, stocking of cocoa prior to shipment, securing optimal prices and maximizing foreign exchange revenues, managing sales and collecting receipts, and settling of any disputes via direct arbitration (World Bank, 2011). After the take-over, management of cocoa becomes the responsibility of the CMC until it is shipped overseas. Prior to shipment however, the Quality Control Division inspects and fumigates all shipping vessels and cocoa consignments. A greater share of purchased cocoa beans is exported in the raw form. The smaller sized (light crop) beans are sold to processing industries in the country at a discount. Light crop beans are smaller in volume than the main crop variety exported in the raw form, although the quality of the bean is the same. About 90% of all processed cocoa is exported while the remaining 10% is used in the production of confectionery products (Ashitey, 2012). Exports of the domestically processed cocoa products to overseas destinations are as well done by the CMC. The processed products that are not exported are sold to domestic consumers, and some of the processed products on the international market find their way back into the country. Such imports attract a tariff of 20%.

### 3.4. Global Exports and Imports of Cocoa from Ghana.

With global exports of cocoa having increased in recent years from 1919079 tonnes in the year 1995 to 2943227 tonnes in 2013, the role of Africa in global exports of cocoa cannot be overstated. Exports from Africa accounted for approximately 68% of world cocoa exports between the years 1995 and 2013, with the Americas accounting for 6.6%, and Asia and Oceania 13%. Most of the global exports of cocoa however are recorded in the names of three main countries, namely; Côte d'Ivoire, Ghana, and Indonesia. These three countries accounted for 64% of cocoa exports between the years 1995 and 2013. Individually, exports from Côte d'Ivoire represent 36.1% of global exports, Ghana 16.1%, Indonesia 11.8%. As displayed in Fig 3, together with some selected ICCO member countries like Ecuador and Papua New Guinea, these countries accounted for approximately 68.82% of net global cocoa exports during the period 1995-2013

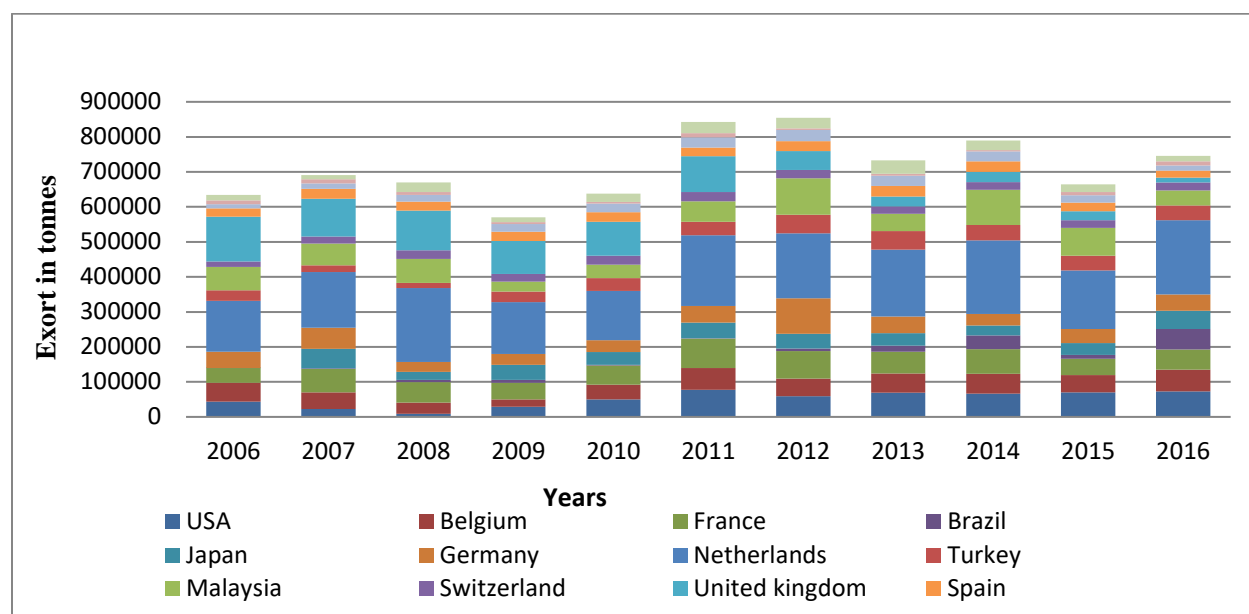
**Figure 3. Net Export of cocoa.**



On the import side, as shown in Figure 4, Most of the imports of cocoa from Ghana however were into the European Union, the United States and Asia. A sample of fifteen highest importing countries was chosen for this study survey between 2006 and 2016. Total import of cocoa of the fifteen countries from 2006 to 2016 accounted for 7832729 metric tonnes. The United States accounted for 7.3%, Belgium 6.8%, France 8.6%, Brazil 1.9%, Japan 5.1%, Germany 6.6%,

Netherlands 25%, Turkey 5.1%, Malaysia 8.95%, Switzerland 3.1%, United Kingdom 10.1%, Spain 3.7%, Russia 3.2%, Canada 1.1% and China 3.3%. Total imports of cocoa of the fifteen countries increased from 634127 tonnes in the year 2006 to 745344 tonnes in the year 2016. This represents 17.5% increase in cocoa import.

**Figure 4. Net import of cocoa from Ghana by country from 2006-2016.**



#### 4. Conclusion

The study revealed that cocoa production, aggregate exports of cocoa beans and processed cocoa witnessed an increase in the years under review. Annual production of cocoa in Ghana increased by 112%, from 404 thousand metric tons in 1995 to 859 thousand metric tons in 2016, representing an average year-over-year production increase of 5.3%. The country's cocoa exports even though fluctuating; it steadily increased from 239 thousand tonnes to 526 thousand tonnes between 1995 and 2013. This represents an annual export increase by 120%, and an average year-over-year export increase of 5.7%. This improvement has been attributed to government support in the cocoa subsector in Ghana.

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