

# Economic and policy foundations of agricultural exports

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Minimization of both short and long-run inhibitions could further enhance agricultural export growth for Ghana. Based on estimates observed in this study, sustenance and scaling up of the Ghanaian agricultural export sector requires addressing of existing structural weaknesses and inefficiencies in production, trade and marketing, increased diversification of agricultural exports, increased openness to trade, attraction of export enhancing foreign direct investments, and increased domestic production. H Received 24 March, 2014 Received in revised form 18th April, 2014 Accepted oh May, 2014 Published online 25th June, 2014 Key words: Agricultural exports; Co-integration; Export diversification; Export growth; Ghana Copyright 0 2014 Bonsais, D. Et al.

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INTRODUCTION Anchoring economies on firm economic and policy roots is key to shielding such economies from economic storms. A key tot in this regard for most developing economies has been, is and would continue to be agriculture. Agriculture employs not only over 50% of the total workforce in most developing countries, but most importantly, the sector has been a relevant and effective tool in the fight againstpovertyworldwide. In addition, the sector has been a key source of income generation for many small-holder farmers, processors and marketers in rural economies, and enhances earning of foreign exchange.

Being primarily agrarian, Shania's economy has since the immediate post-independence period been steered by developments and oppressions in the <https://assignbuster.com/economic-and-policy-foundations-of-agricultural-exports/>

agriculture sector. Having inherited fortune from the pre-independence era, use of inappropriate domestic policies (under the socialist model of the 1970s) including currency overvaluation, fueling of inflation, extreme reliance on cocoa exports, import licensing, price controls (Striker 1999 and Sanderling, 2000; \*Corresponding author: insignia Department of Economic and Technological Change, Center for Development Research (ZEE), Bonn, Germany Diktat, 1999) and ineffective state interventions exposed the Ghanaian economy to a "pseudo" resource curse.

This in April 1983 incited the country's adoption of a more liberal model under the auspices of the MIFP and the World Bank. Opting for a more liberal model by the then government was to help address prevailing fiscal, financial and marketing inefficiencies in the country to enhance revival of the agriculture sector and the economy on a broader perspective. Achievement of this was sourced through the Economic Recovery Program (ERP) and accompanying vital policy measures/programs initiated. Most important among such initiatives was the Medium Term Agricultural Development Programme (MATED, 1991-2000), and its subs including the Agricultural Diversification Project (1991-1999), National

Agricultural Research Project (NARD, 1991-1999), and National Agricultural Extension Project (NAPE, 1992-2000) among others. These initiatives together with the Accelerated Agricultural Development Strategy (SAGAS) initiated in 1996 led to a revival of the agriculture sector and the economy on a broader perspective from its collapse in the pre-ERP period. This development is perceived to have been primarily steered by diversification in

agricultural exports, devaluation of the country's currency, increasing investment by 1241 Bonsais David et al. Economic and policy foundations of agricultural exports from Ghana: A co-elongation analysis international agencies and donors in the Ghanaian economy, and improvement in the macroeconomic environment.

Although these initiatives are believed to have enhanced revival of the country's agriculture sector, the export-oriented dimension (as against the crop-production dimension) is believed to have benefited the most (Welter, 2008). Value of agricultural exports increased from as low as US\$268, 927 (thousand) in 1983 to (thousand) 2011. Growth of the agriculture sector since initiation of the Economic Recovery Program up to date is believed to have as well been steered by developments in the export-dimension of the sector. To ensure continuous growth of the sector (and the economy as a whole) requires not only improvement in the crop-production dimension (which lags behind and NAS received much attention over the past two decades), but as well sustenance and scaling up of both traditional and nontraditional export sectors.

Efforts made so far to inform policy decision on how the export-dimension could be sustained have primarily been directed towards identifying key determinants of exports for sub-sectors considered under the Agricultural Diversification Project (1991-1999) including cocoa (Bonsais, 013), oil palm (Koruna et al, 2009), pineapple (Gateau et al, 2013, Taken, 2004) and horticultural exports (including mango, papaya, etc. ) (Egger et al, 2012; Danielson and Rave, 2005). These studies among others have revealed both

affirmative and contrasting implications of various economic and policy indicators on agricultural exports. In spite of the numerous researches (in the form of articles and dissertations) conducted along this line, very little has actually been done to ascertain how such indicators influence aggregate agricultural exports on a broader perspective (as against focus on the sub-sectors).

To inform policy prescriptions in this regards, effort is made in this study to identify the primary economic and policy foundations (drivers) of aggregate agricultural exports from Ghana. Achievement of this is sourced through a congregation analysis, specifically, the use of Johannes Full Information Maximum Likelihood test. LITERATURE REVIEW As funny as it may sound, efforts made to inform policy decisions on drivers of export growth have produced affirmations, contradictions and modifications to previous findings, while other researchers tend to misinterpret outcomes based on their understanding or perception about some key indicators. These observations are primarily attributed to differences in sub-sectors considered under the various research works.

While some researches investigate determinants of cotton exports, others investigate cocoa exports, while others investigate rubber, oil-palm and pineapple exports among others. Based on the role each of these commodities play in the countries covered under such studies, the competitiveness of such sub-sectors, quality of such exports, global demand for such commodities, prevailing fiscal, marketing and infrastructural constraints and prevailing barriers to trade in such commodities, quite

different outcomes are usually anticipated and observed. This tends to keep policy makers at sea (in confusion) on the actual effect of such indicators on aggregate exports (due to different implications observed for the sub-sectors).

Among the common determinants noted in economic and trade literature are domestic production (sectorial production or real gross domestic product), foreign direct investment(FDI), nominal or real exchange rate(ERE or R), domestic and international demand, domestic and foreign prices, official development assistance, global stock/grainings ratio, and previous export growth. In this study over, effort is made to review literature on only variables that are of key interest to our current research besides other new indicators considered. Although FDI is perceived to fuel growth in less developed economies, its role in export promotion has been quite controversial.

In as much as several cross-country studies affirm the hypothesis of a negative relationship between FDI and export growth (including Jon 1992), others (including Hickman and Adjacent (1997), Sahara (2000) and Amazed and Madam (2006)) find no significant association between FDI and export growth, while others including Blake and Pain (1994), Cabal (1995), ND Preferably (1996) reveal a significant positive effect of FDI on export performance of the recipient/host country. These respective studies propose that the true role of FDI in export promotion to a greater extent depends on the motive behind such investments and prevailing domestic conditions.

In as much as investments made to tap export markets through exploitation of competitive advantage of the recipient country stands stimulating export growth, domestic market capturing and tariff-jumping types of investment mostly inhibit growth (Amazed and Madam, 2006). In contrast to the notion that increased production in a closed economy yields an adverse implication for trade due to the price decreasing effect of such increments, in an open economy, increased domestic production is deemed the primary cause of export expansion since the surplus is what is exhausted on the international market (Ball et al, 1966). In a study on the determinants of exports in developing countries, Amazed and Madam (2006) found a positive and highly significant effect of production (proxies respectively with Gross Domestic Product (GDP) and GDP growth) on export growth.

Level of production, they explained can be utilized at both domestic and international level at the same time, adding that, benefits of lower production (based on relative advantage of such countries in agriculture goods) could be exhausted by export growth policies. In assessing determinants of export growth rate in Uganda for the period 1987-2006, although Gash (2009) discovered that GDP has a significant positive effect on exports in the long run, none of the three lags introduced in the short-run had a significant effect on export growth. In affirmation of a positive association between GDP and export growth, Anadem et al (2012) found a significant positive effect of GDP on exports from Pakistan.

Similarly, in investigating the determinants to export performance in developing countries, Fugal (2004) found a significant positive association

between lagged GAP and export growth rate. Hussy and Hussy (2007) also found a significant positive association between lagged GAP and export growth for Nigeria. In contrast to the noted beneficial association between production and exports, Kumar and Aria (2007) discovered a significant negative association between production and export growth for tomato in India. This observation was however attributed to a possible coincidence between domestic and international production of the commodity, which triggered a depression in export price for the commodity, and hence 1242 International Journal of Development Research, Volvo. , Issue, 6, up. 1240-1248, June, 2014 decreased exports from India. In addition to this observation, they found a significant positive association between tomato exports from the country and volume of international trade, signifying that international demand for the commodity is a key driver of exports from India. In affirming this association, Kumar et al (2008) found a positive association between volume of international trade in cucumber and Gherkin and the corresponding exports of these commodities from India. Foreign demand has as well been confirmed a key determinant of export growth for fruits and vegetables in sub-Saharan Africa by Taken (2004).

In assessing the competitiveness and determinants of cocoa exports from Nigeria, Inasmuch et al (2010) also found a significant positive effect of domestic production and world volume of exports on exports of cocoa from Nigeria. Besides the aforementioned indicators visited so far, another driver of exports that has received much attention and coverage in economic and trade literature is terms of trade. In as much as unfavorable terms of trade is perceived to generally dampen exports, favorable terms of trade has mostly

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been associated with export growth. In a study on the use of econometrics in policy design and implementation, Musing and Bonbon (2000) discovered that terms of trade and lagged export growth are significant determinants of exports in the current period, although effect of the former (TOT) was marginal.

In a similar study, but under the title " Rethinking policy options for export earnings", Jaunt (2006), also covered that deterioration in terms to trade index is associated with contraction of export earnings. In assessing the effect of agricultural and financial sector reforms on export growth of cotton lint from Pakistan, Inward et al (2010) revealed that exports of cotton lint is positively driven by increasing world demand for the commodity, export competitiveness of the country, and increase in trade openness. Ingenuous and Manacle (2013) also found a significant positive association between export growth and openness to trade for Cameroon. A more controversial and highly misinterpreted driver of exports in literature has been and continues to be exchange rate (ERE and ERE).

As a surrogate measure of incentive for exports, various researches have observed both positive and negative association between export growth and these indicators, but usually infer the same meaning to either signs. In as much as nominal exchange rate reflects the amount of currency an entity can receive in exchange for another currency, it fails to account for differences in price levels. The real exchange rate on the other hand, is the purchasing power of a currency relative to another at current exchange rates and prices, the two rates thereby holding different meanings. The real

exchange rate, by its purchasing power component, facilitates comparison of prices of goods in different countries.

Because of the capacity of real exchange rate to take price differential and inflation into account, a rise in the level of this index indicates appreciation of a host country's currency, which is mostly associated with declines in export volume/growth. In contrast however, entirely the opposite holds for the nominal exchange rate due to the index's inability to adjust for inflation and price differential. Increments and declines in these two indices therefore have different implications and need to be factored-in in interpretation of results instead of them being mostly used interchangeably by various researchers. In line with usage of these indices in various studies, Gash (2009) found a mixed signal (positive effect) for the association between real exchange rate and export growth in the long-run.

The effect for any of the three lags introduced in the short-run model was however not significant. This discovery affirms a relevant finding by Musing and Bonbon (2000) that real exchange rate has insignificant effect on export growth rate. In contrast to these however, Sahara (2000) observed a significant negative association between real exchange rate and export growth for India, inferring appropriately that a fall in domestic prices due to exchange rate depreciation makes exports cheaper in the global market, which consequently stimulate increased demand. Similarly, Current al (2009) and Cline (2004) found a valid positive association between depreciation in real exchange rate and export growth.

Attending to the nominal side of this index, Hussy and Hussy (2007) found a significant positive association between nominal exchange rate and exports of rubber from Nigeria. Although use was made of the nominal exchange rate, a significant negative association observed between the index and export growth by Obligate al (2010) and Ingenuous and Manacle (2013) was misinterpreted as holding a meaning similar to the association between export growth and real exchange rate. A priori expecting a positive association between nominal exchange rate and exports of cocoa from Nigeria, Knackwurst al (2010) rather found a significant negative association between these two variables. This observation was attributed to a declining productivity of the Nigerian economy and a corresponding cake currency.

**MATERIALS AND METHODS Analytical Framework** Although three unique techniques (namely the Engle-Granger approach (Engle and Granger, 1987), Phillips-Lariats residual-based test (Phillips and Lariats, 1998) and the Johannes Full Information Maximum Likelihood test Enhances and Julius, 1990) have been proposed in literature for co-integration analysis/exploration, the Johannes technique is made use of in this study due to the unique advantages it holds over the other methods. Besides being criticized of small-sample biases (Stock, 1987; Banner]teeth al, 1986), the Engle-Granger method tends to produce inconsistent estimates, as short-run dynamics are primarily ignored in production of the long-run estimates. This results in provision of short-run effects that are not guided by and inconsistent with long-run estimates.

In addition, both the Engle-Granger and Phillips-Iariats approaches assume a single concentrating vector in a system of variables regardless of the number of variables in that system. In reality however, there is a possibility of observing  $n-1$  co-integrating equations in a system of  $n$  variables, a system attribute mostly precluded by these approaches. Under the Johannes technique, cointegration variables are built directly from maximum likelihood estimation, with short-run effects guided by and consistent with long-run outcomes. In addition, this technique allows for all possible co-integrating relationships and permits empirical determination of the number of co-integrating vectors.

In spite of these positive attributes of the Johannes procedure, the selected technique for our analysis is heavily reliant on asymptotic properties and extremely sensitive to specification errors. Having selected it as the choice approach, the Johannes Full Information Maximum Likelihood test commences with the definition of a vector auto-regression given as follows: Where Exist an  $(n \times 1)$  vector of  $(1)$  variables,  $RL$  through  $NP$  represents  $(mix)$  matrix of coefficients, and is  $(n \times 1)$  vector of innovations. Following identification of appropriate lags to use in various specifications and confirmation of concentrating equation(s) in the system under study, equation (1) becomes a less appropriate set-up.

In its stead, a more appropriate set-up dubbed "vector equilibrium correction model" (VICE) (Ljtakeout and Kerrætweig, 2004) or "vector error correction model" is used. The VICE is obtained through a special parameterization that supports analysis of the co-integrating structure(s).

This is obtained through subtraction of Ext-loon both sides of equation (1), yielding the following expression: , and In equation (2), Act is (Stationary), 1, 2, ... , p-l are all stationary and UT is also assumed(O). For the equation to be meaningful and valid, next-p is expected to and must be stationary. The matrix in the above specification determines the extent to which the system under study is co-integrated and is primarily referred to as the impact matrix (Assume, 2011).