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Analysis of Export Instability and Economics of Major Exported Agricultural Commodities in Ethiopia: Panel Data Approach

[1]Hika Wana and [2]Nasir Ababulgu

[1]Wollega University, Department of Agricultural Economics,
P.O. Box: 38, Shambu, Ethiopia
[2]Wollega University, Department of Agribusiness and
Value Chain Management, P.O. Box: 38, Shambu, Ethiopia

Abstract: This article examines instability in export earnings, trade balance, trends in export and the contribution of major export commodities on real gross domestic product over the period of 1986-2018 in Ethiopia using panel data approach. Analysis of the exports through time reveals that Ethiopia export earnings depend on only a few agricultural products. In fact, the results of this study show that major exported agricultural commodities accounted for about 71.82 percent of the total export earnings of the country in periods of 1986-2018. The results of descriptive analysis show that among major export commodities oil seed, coffee and fruit and vegetables were more important in explaining instability in earnings than other agricultural products. Analysis of Ethiopian trade balance shows, there is a trade deficit in which import is much greater than export due to dependency on raw agriculture-based export and unrecorded data like import of aircraft and petroleum product adjusted by the recent data. The result of multiple linear regression model revealed that coffee, oilseeds, Fruit and vegetables, total export earnings and exchange rate affected economic growth significantly and statistically. From the analysis, about 87 percent variation in Real Gross Domestic Product is due to variation in total export earnings. Therefore, there should be strong policy intervention to promote these variables to further increase export earning which further promote economic growth of the country.

Key words: Export Earnings · Economic Growth · Trade Balance · Multiple Linear Regression Model

INTRODUCTION

Back Ground of the Study: Ethiopian export is dominated by few raw or semi processed agricultural products which have been the main contributors to the country's foreign exchange earnings. This feature is expected to continue without significant change, in the near future, due to the overall underdevelopment of the country's economy. The prevailing investment friendly policies and strategies are not expected to bring about a sound export growth in the short run. The secondary data results show that the private peasant holders grow various crops for own consumption and/ or economic benefits. Pulses are also among the various crops produced in all the regions of the country after cereals. Pulses are grown in different volumes across the country. From pulses crop Faba beans, haricot beans (white), haricot beans (red) and chick peas were planted to 3.40% (about 427, 696.80 hectares), 0.63% (about 78, 910.13 hectares), 1.68% (about 211, 292.30 hectares) and 1.79% (about 225, 607.53 hectares) of the grain crop area [1].

Oilseeds refer to crops which are also classified within grain crops category, nonetheless. Oilseeds are grown to flavour the food consumed at home and earn some cash for peasant holders in the country. Various oil crops are produced in all the regions with differing quantity as illustrated in the survey results. Oil seeds added 6.40% (about 804, 752.00 hectares) of the grain crop area and 2.89% (about 8, 392, 021.85 quintals) of the production to the national grain total. Neug, sesame and linseed covered 2.24% (about 281, 206.42 hectares), 2.69% (about 337, 926.82 hectares) and 0.64% (about 80, 353.74 hectares) of the grain crop area. Ethiopia is the 129th largest export economy in the world and the 116th most complex economy according to the Economic Complexity Index [2].

Corresponding Author: Hika Wana, Wollega University, Department of Agricultural Economics,
P.O. Box: 38, Shambu, Ethiopia.

In 2017, Ethiopia exported $2.2B and imported $8B, resulting in a negative trade balance of $5.8B. In 2017 the GDP of Ethiopia was $80.6B and its GDP per capita was $1.9k. As export is concentrated in a few commodities, there have been serious short-run and long-run Economic risks being experienced in Ethiopia. The short term economic risks are felt to the economy through volatility and instability of foreign exchange earning which could have adverse macroeconomic effects on growth, employment, investment planning, import and export capacity, foreign exchange cash flow, inflation, capital flight and undersupply of investments by risk averse investors and others. In the long term, secular and unpredictable declining terms of trade trends may exacerbate short run effects. Reducing dependence upon limited number of geographical destinations for the export sales can also be another way of reducing, if not avoiding, the economic risks of less diversification [3].

Ethiopia has been and still is highly dependent on few agricultural products. Undoubtedly, this structure of the country's export sector would prevail in the coming two or three decades with slight change in favor of the industrial sector. Generally, Ethiopian export trade is constrained by major problems:-Low level of industrial development; the volume and quality of industrial export commodities are inadequate; Lack of diversification; limited by type and volume, i.e., confined to few items of which one commodity (coffee) accounts for about 60 percent, Limited capability of the private sector to bring about effective production process and technological progress in order to be competitive in the international trade, due to low level of entrepreneurship or venturesome spirit.

The trade potential is exploited when the maximum possible trade that could occur between any two countries that liberalized trade restrictions. It refers to the situation of trade in free trade with no restrictions that constitute optimum trade frontier. It predicts the trade that could be possible given the current level of trade, transport and institutional technologies. In other words, it is the maximum level of trade given the current level of determinants of trade as well as the least level of restrictions within the economic system [4]. Given the potential gains of trade, countries are interested to liberalize their economies to enjoy the benefits of trade and globalization through bilateral and multilateral process. It is important that each country may know its full trade potential with other countries or other regions in order to get the engagement process started.

The increasing volume and value of trade performance requires good trade policies based on reliable information. In this regard, although there have been some studies on trade issues of the country, they are not updated and some of them couldn't explain the major factors of export instability in Ethiopia. In this paper investigation on the major determinants of trade (export, import and total trade) was made. Furthermore, the study is devoted to assess the economic shares of major agricultural commodities in total Value of Exports earnings, to examine the Ethiopian trade balance, to analyze the effect of total export earnings on economic growth: Gross Domestic Product and to assess trends of major exported agricultural commodities in Ethiopia. Therefore, this article attempts to explore the export instability and economics of the top prominent crops coffee, oilseed and pulses in Ethiopia.

MATERIALS AND METHODS

Description of Study Area: This study was carried out in Ethiopia located in the horn of Africa. Ethiopia is located at 3 degrees and 14.8 degrees latitude, 33 degrees and 48 degrees longitude in the Eastern part of Africa and situated between the Equator and the Tropic of Cancer. It is bounded on the Northeast by Eritrea and Djibouti, on the East and Southeast by Somalia, on the South by Kenya and on the West and North West by Sudan and South Sudan. Ethiopia has a total area of 1, 127, 127 square kilometers with the population of 85 million which makes her the tenth largest in the world and the third most populous state in Africa after Nigeria and Egypt [5].

The country has 10 regional states divided according to the main ethnic lines such as Oromiya regional state, Amahara regional state, Tigray regional state, Afar regional state, Benishangul-Gumuz regional state, Harari regional state, Somalia regional state, Southern Nation Nationalities and People regional state, Gambella regional state and sidama region. The main export commodities of Ethiopia such as coffee, oilseed and pulse production are mainly from Oromiya, SNNP, Amahara and Tigray region.

Coffee is produced in two regions; Oromiya and SNNP. The export standard coffee from Oromiya region is mainly from four areas such as Jimma, Nekemte, Harar and Bebeka. There are three areas in SNNP such as Kefa, Sidamo and Yirgacheffee. Oilseed is produced mainly in the north and western parts of the country. The export standard oilseed production comes from Amhara region specifically in Metama, from Tigray region In Hummera and Oromiya region in Wellega. Almost all regions of the country produce pulses but Tigray, Amhara, Oromiya, Benshangul-gumz and SNNP regions produce more than 99 percent of the total national production.

Fig. 1: Map of the study area, Ethiopia

Methods of Data Collection: This study is mainly based on secondary yearly export data on selected commodities and for other control variables mentioned in the model from Central Statistical Agency (CSA), National Bank of Ethiopia (NBE), Ministry of Finance and Economic Development (MoFED), Ethiopian Revenue and Customs Authority (ERCA) and various publications of International Monetary Fund (IMF) and World Bank (WB) covering the period from 1986 to 2018.

Multiple Linear Regression Model

Model Specification: Various economic growth theory have been discussed in this study under theoretical frame work, such as Classical growth theory which assumes non-economic factors of production like population growth, political instability, the security of private property and the role of law and institutions in addition to economic factors of production land , labor, capital and technology. However, for the sake of our analysis we used multiple linear regression models to analyze the effect of total export earnings, exchange rate and the major exported item on RGDP. Since our amount of years is 32, which is greater than 30 observations, we just took as the number of observation, to see the factors that distort total export earning among periods from 1986-2018.

For this study, the function intended to be used is specified below [6].

$$\ln Y = \ln A + \alpha_1 \ln X_1 + \alpha_2 \ln X_2 + ,..., \alpha_n \ln X_n + U_i$$

where:

Y: real gross domestic product (in million dollars)

A: The intercept

$X_1, X_2,...,X_n$: are continuous explanatory variables

$\alpha_1, \alpha_2,...,\alpha_n$: are coefficients/parameters of explanatory variables

Parameters: $\alpha_1, \alpha_2,...,\alpha_n$ are estimated by OLS (Ordinary Least Squares) methodology via statistical software (STATA).

RESULT AND DISCUSSION

Descriptive Analysis: Before going to provide a comprehensive econometric analysis, the study gives the brief interpretation of statistical analysis. Table 1 report the descriptive statistics and interprets that the average real GDP at market prices is 382144million USD. the average exchange rate of one dollar to birr in the past 32 year is 9.11. On the average pulse export is 70 million USD. From 1986 to 2005, pulses have been exported in Ethiopia below its average export. By 2017, pulse export had an increment of 279.9 million USD from its mean export. After this period pulse exported from Ethiopia stood high from its mean value. The average coffee export is 384.1 million USD. In Ethiopia, coffee export stood below its average from 1986 to 2006 except where it witnessed an increase in 1998. After that year coffee has been exported above its mean export. On average, oilseed export is 158.15 million USD. From 1986 to 2005 oilseeds has been exported below its mean value, but after that period on ward, oilseeds export experienced a dramatic increase above its mean value. This could be attributed to many reform programs that have been put in place by the government. Skewness is a measure of departure from symmetry. The analysis is positively skewed or is rightward skewed.

Export Instability of Coffee, Oilseeds and Pulses: By taking the data from 1986-2018 production seasons from central statistical agency and National bank of Ethiopia, there were tremendous instability in both production and exporting situation in Ethiopia.

Table 1: Description of The Exported Commodities, Earnings, Exchange Rate And RGDP

STAT	COFFEE	OILSEED	PULSES	TOEXP	EXRATE	RGDP
Mean	384.1	158.15	70.07	1135.93	9.11	382144
Min	37.4	.085	.085	66.72	2.07	111910
Max	883.2	651.88	279.9	3272.78	22.4	1719491
Skew	.7234	.9958	1.17	.984	.73	2.24

Source: computed from the data National Bank of Ethiopia, 2019

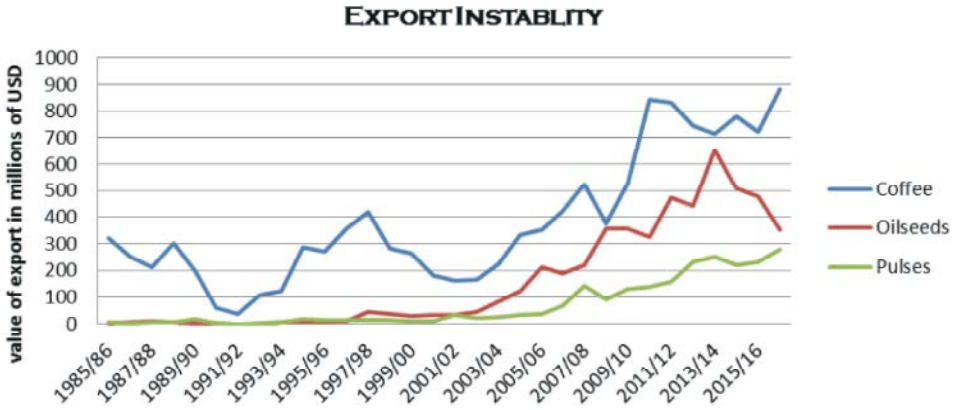

Fig. 2: Value of coffee, oilseed and pulses exports in millions of USD
Source: own computation from Ethiopian custom authority

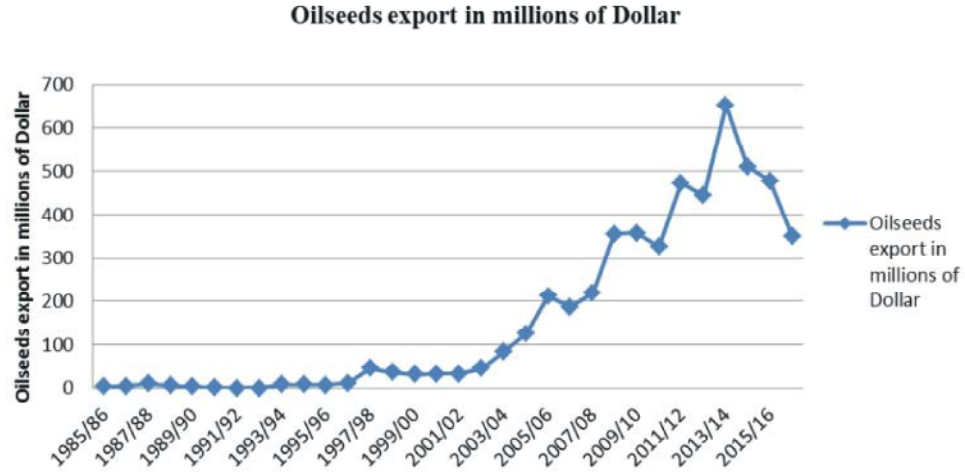

Fig. 3: Value of oilseed exports in millions of USD
Source: own computation from World Bank data

Despite the production in hectares of land in these period were highly boom, the exporting pattern of agricultural commodity like coffee, oilseed and pulse were fluctuated due to border conflict, ethnic clash, poor technology, price instability, quality standard and black market.

Oil Seed Export in Ethiopia: Oil seeds are the second largest merchandise export for Ethiopia, representing 12 percent of total exports in 2017. Though oilseed could have great role in economy of the home land it was drastically reduced from 651.8 million USD to 351.02 million USD in 2014 and 2017 respectively in arena of Ethiopia exporting. This confirms that peace and stability is must for growth because in 2017 the country was under big rally, ethnic clash and protesting. Among oil seeds, sesame is the most important. In 2013/14 oil seed exporters have enjoyed stable and attractive prices and the share of Ethiopian exporters that export oil seeds is high at around 19.9 percent. In 2014 and 2017, the years with large increases in export quantities, the share of entrants was larger than the share of exciters (Figure 3). The average size of oil seeds exporters increased from US$2 million in 2008 to US$2.5 million in 2012.

The main production regions of oilseed in Ethiopia are Tigray, Amhara, Oromia and Benshangul Gumuzi [7]. Among oilseed production sesame is the leading crops all the time. Despite the high oil seed crop productivity variations across the region, the growth rate of productivity is significantly increased within each region except sesame during the same period. The annual average oil seed crop productivity growth rate was: Neug 11.12%, 8.61% & 4.81% Linseed 12%, -8.45% & 9.36% and Sesame 0.01%, 5.62% & -1.04% in Tigray, Amhara and Oromia regions respectively, Sesame crop productivity shows the list productivity growth among the other oil seed crops in the last ten years in all three major oilseed growing regions of Ethiopia [8]. According to CSA (2017), in 2013/14 production year, sesame covered 299, 724 ha of land at national level. The total production of sesame in the same year at national level was 2.2 million qt. In the same year, the total productivity of the crop at national level was 7.35qt per ha. From 2013/14 to 2014/15 production season, production of sesame has increased by 27.27% but productivity has decreased by 6.53% at national level.

The same source indicated that in Oromia region, the total area covered by sesame in the production year of 2013/14 was 48, 182ha and 379, 240qt of sesame have been produced with the productivity of 7.87qt per ha. From 2013/14 to 2014/15, production of sesame has increased by 41.3% but productivity has decreased by 6.6% in Oromia region. Even though there is an effort by some research centers in Ethiopia in variety development and agronomic practices, surprisingly from 1995/96 (1988 E.C) to 2014/15 (2007 E.C) sesame productivity was drastically reduced from 9.8qt per ha to 6.87qt per ha. This implies the research attention that has been given to improve this crop is not comparable with the contribution of this crop in Ethiopian economy for long period of time. Therefore, possible ways should be sought to improve the efficiency of the farmers in Ethiopia.

Coffee Exports in Ethiopia: Among agricultural export commodity, coffee is the leading and had lion share of the total export all the time representing 30 percent in 2017. As indicated from above major grid lines of the graph there were export instability in three crops: coffee, oilseed and pulses due to some reason. For instance if you look at 1985/86, 1991/92, 1999/00 and 2001/02 coffee exporting situation was declined due to transition government between Derg regime and EPRDF of the time and border conflict between Ethiopia and Eritrea that seems two bald men are fighting over the comb of during. This indicated that war and transition in government can reduce GDP and growth in the long run.

The leading export destination of Ethiopian coffee is Germany, Saudi Arabia, the USA and Japan. This reflects the tremendous growth in Ethiopia coffee output following liberalization of the sector which increased by 275% in the decade from 1986-2017. The country provides between 220, 000 and 250, 000 tons of coffee annually and coffee covers 34 percent of all exports of the country [9]. According to Ethiopian revenue and customs authority, the country exported 70 million kilograms of coffee, valued at about US dollars 321.2 million in 1985/86 and 225.7 million kilograms of coffee, valued at about US dollars 883.2 million in 2016/17 which shows an increasing trend.

The country exported 3.2 million bags of coffee and accounted for 3 percent of internationally traded coffee in 2012 [10]. However, Ethiopian exports have been prone to fluctuation as a result of periodic falls in output, volatile international prices and pressures of supplying the domestic market. Figure 4 indicates the trend of coffee exports in US dollar over the last 32 years. Two observations can be made: first, there were high growth rates in the values of coffee exported and the real value at the end of 1986, 1989, 1995, 2008, 2011, 2015 and 2017 was attractive when we compare with other consecutive years. Second, there was a significant drop in the real value of exports from the trend line in 1992, 2002 and 2009. This was because of reduction in volume of production, transitional government (derg regime - EPRDF), border conflict, low international price and disturbance to coffee export licenses by government

Pulses Export in Ethiopia: Pulses have been cultivated and consumed in large quantities in Ethiopia for many years. Pulses grown covered 12.33% (1, 549, 911.86 hectares) of the grain crop area and 9.69% (about 28, 146, 331.73 quintals) of the grain production was drawn from the same crops. Faba beans, haricot beans (white), haricot beans (red) and chick peas were planted to 3.40% (about 427, 696.80 hectares), 0.63% (about 78, 910.13 hectares), 1.68% (about 211, 292.30 hectares) and 1.79% (about 225, 607.53 hectares) of the grain crop area. The production obtained from faba beans, haricot beans(white) haricot beans (red) and chick peas was 3.02% (about 8, 780, 108.79 quintals), 0.43% (about 1, 259, 801.75 quintals), 1.23% (3, 579, 424.75 quintals) and 1.53% (4, 441, 459.26 quintals) of the grain production, in that Order [11].

Pulses production and exports is increasing from time to time as a result of increasing in the number of importing countries and tangible and positive effort of organizing supplies through Ethiopia commodity Exchange (ECX). Export of pulse crops were increasing and contributing 7.03 percent to total export of the country (Figure 5).

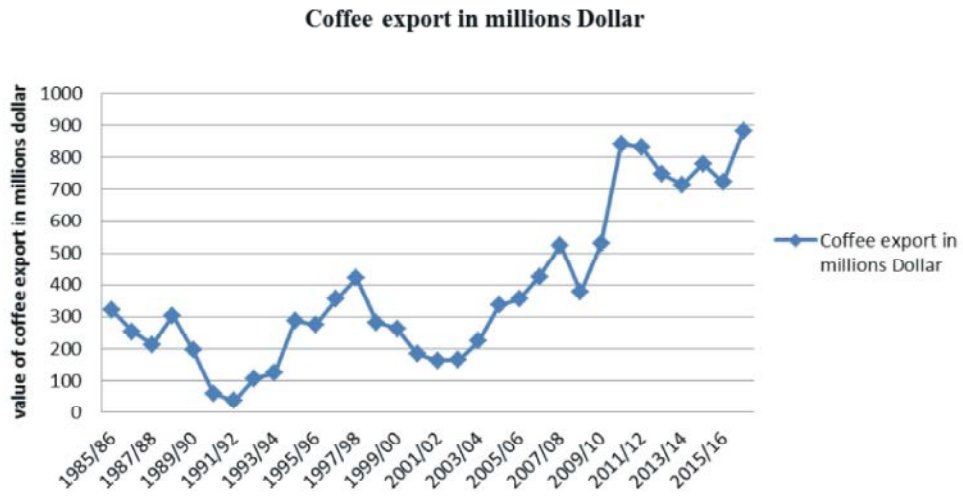

Fig. 4: Coffee export in millions of Dollars
Source: computed from the data of national bank of Ethiopia

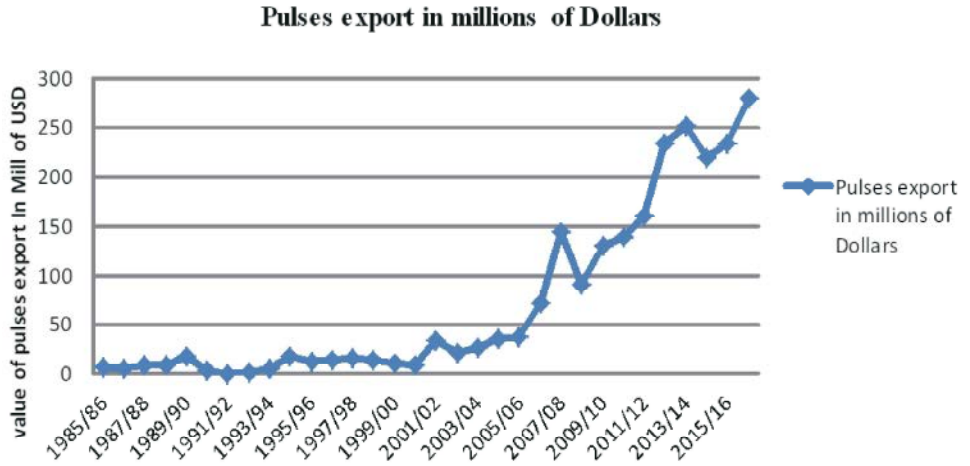

Fig. 5: Pulses export in millions of Dollars
Source: computed from the data of national bank of Ethiopia

In 2004, 37, 395 metric tons worth US$ 11.8 million were exported, but declined to 19, 018 metric tons or US$ 6.2 million in 2005. Exports again picked up in 2006 and 2007 increasing from 41, 668 metric tons (US$18.8 million) to 105, 400 metric tons (US$ 51.7 million). However, Ethiopian pulses export is experiencing fluctuation as a result of varying in output level, low international price, high domestic demand and buyer's perception about quality of products is so low[12]. Figure 5 depicts the trend in pulses exports.

Shares of Major Export Items in Total Value of Exports Earnings: The country's export structure can be characterized by its heavy dependence on few agricultural commodities. OECD and ADB (2002) reported that the country's diversification index in 1999 was 2.5. This shows that the economy is less diversified compared to some other African countries like Cameroon (6.8), Côted'Ivoire (4.6), Egypt (9.6), Ghana (7.1), Kenya (10.5), Senegal (9.2) and Zimbabwe (8.9). As indicated in table 2, six export commodities (Coffee, Hides and Skins, Oilseeds, Pulses and Fruits and Vegetables) accounted, on average, for 71.82 percent of the country's total export earnings during the 1986-2017 period. Coffee alone accounted for more than half of the total export earnings of the country over the period 1986-2017. It was distantly followed by hides and skins and oilseeds.

The figures in Table 2 indicate that agricultural commodity trade is an important source of export earnings. Available empirical evidence reveals that such an overwhelming dependence on few agricultural commodities has an adverse effect on the economies of

Table 2: Percentage Shares of Major Export Items in Total Value of Exports: 1986-2018

Export item	1986-1995	1996-2005	2006-2018
Coffee	64	51.3	27.4
Oilseeds	1.5	8.7	16.2
Hide & skin	15.3	10	4.3
Pulses	2.3	3.6	7
Vegetables & fruit	1	1.4	1.45
Subtotal	84.1	75	56.35
Others	15.9	25	43.65
Total	100	100	100

Source: Computed from data in National Bank of Ethiopia, 2019

developing countries like Ethiopia. As the result shows the export of coffee and hide and skin which are the country's export commodities, are decreasing. In fact, a closer look at Table 2 shows that the average shares of coffee and hide and skin have shrunk from 64 percent and 15.3 percent respectively in the 1986-1995 period to 51.3 percent and 10 percent, respectively in the 1996-2005 period and then drastically decline to 27.4 percent and 4.3 percent in 2006-2017 period respectively. Despite the average shares of coffee and hide and skin is high in the 1986-1995 period as compared to that of the period 1996-2005, they were still decreasing in 2005-2017 period. The principal explanation for the decline in the average shares of coffee and hide and skin is the fact that during 1974-1991 the combined effect of recurrent droughts, political instability and military conflicts, in the major producing areas of these commodities, has severely affected the total volume of production and consequently the quantity of exports [13].

As to the average share of fruits and vegetables in the total export earnings of the country, it increased from 1 percent in the period 1986-1995 to about 1.4 percent in the 1996-2005 period. It then increased slightly to 1.45 percent in the period 2006-2017 periods. Another important change in the export earnings is the rapid increase of relative importance of oilseed in the total export earnings of the country. In this respect, the relative share of oilseed in export earnings has been growing at increasing rate over the 1986-2017 periods. It is also interesting to note that oilseed is the second important export commodity next to coffee, in terms of export earnings over the period 1986-2017. In recent years, oilseed is the second largest export crop after coffee, accounting for 8.7 percent and 16.2 percent of export earnings in 1996 and 2017, respectively [14]. Some of the reasons for the increasing importance of oilseed include: the persistent decline of coffee price in the world market, since the second half of the 1990s, has led the shifting of the coffee farmers to other oilseed crops in coffee producing areas; the market for oilseed has been growing over the years (it has been legally exported to Djibouti and the United Arab emirates and in recent years with the liberalization of exports to Somalia its market has grown considerably); and the oilseed crop is produced in lowland areas and relatively drought resistant, fetches higher income per unit area as compared to other crops.

Government policy regarding to agriculture are the prominent factor to change exporting share, for instance if we back to above table 2 the total exporting share of major crops were drastically reduced from 84.1% in 1986-1995 to 75% in 1996-2005 and then unexpectedly declined to 56.35% in 2006-2017 periods. This might be due to government policy changing from ADLI to industrial development, this policy changes undermined agriculture by reducing the expenditure of the government on the sector and black market was aggravated on the past three decades in which a huge amount of export crops were exported illegally by unlicensed traders. It's undisputed that there was border conflict between Ethiopia and Eritrea and ethnic clash with in the country which resulted in reduction of production, productivity, marketing as well as export of major industrial crops for several years.

Analysis of Trade Balance from 1986-2018 in Ethiopia: The Government has implemented many export incentives packages besides the reduction of tariff rate for import of raw materials and capital goods to the manufacturing sector. Nevertheless, according to the data of Ethiopian Revenue and Customs Authority (ERCA), during the period 2004 to 2012, the value of the country's export increased from USD 615.26 million to USD 2, 772.12 million, while import rose from USD 3, 040.84 to 11, 556.14 million over the same period (figure 6). As a result the fast growth of import compared to export, trade deficit of the country increased from USD 2, 425.58 million to 8, 784.02 million over the period. This merchandise trade deficit divergence has resulted to wider current account deficit in the country.

The trade deficit and its economic and social implications are matters of concern to both the public and private sectors. Thus, it is important for both parties to work together with respect to the contents and marketing strategies of export items. There is an urgent need to address the trade deficit not only from export side but also from the expenditure or import side by identifying products that can be locally produced to reduce foreign exchange out flows. At the same time, expanding the volume of trade and diversifying of export products and market destinations need to be investigated in detail to narrow the deficit.

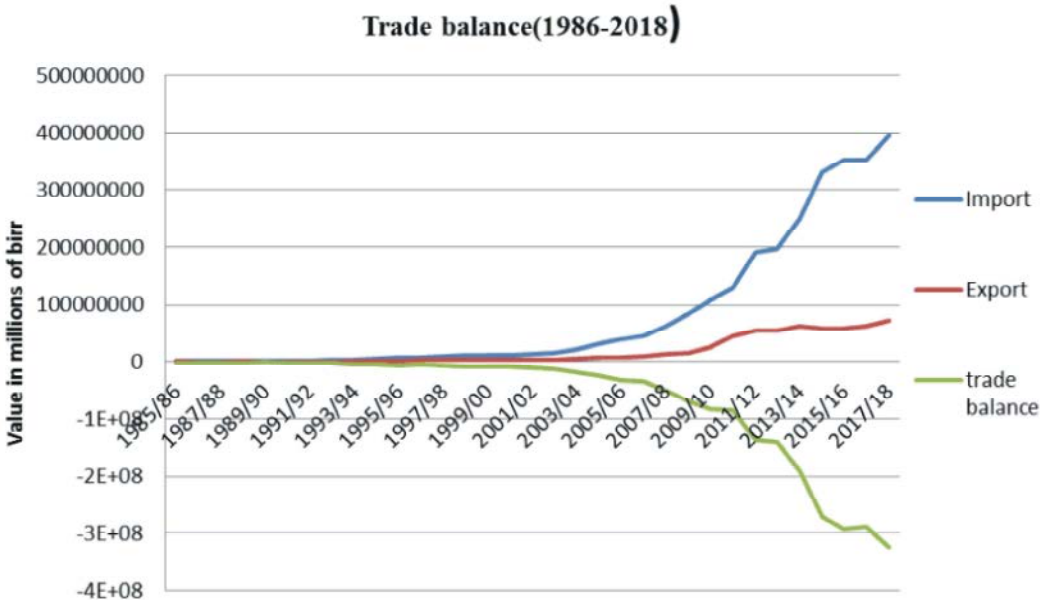

Fig. 6: Trade balance of Ethiopia
Source: Computed from data of Ethiopian custom authority

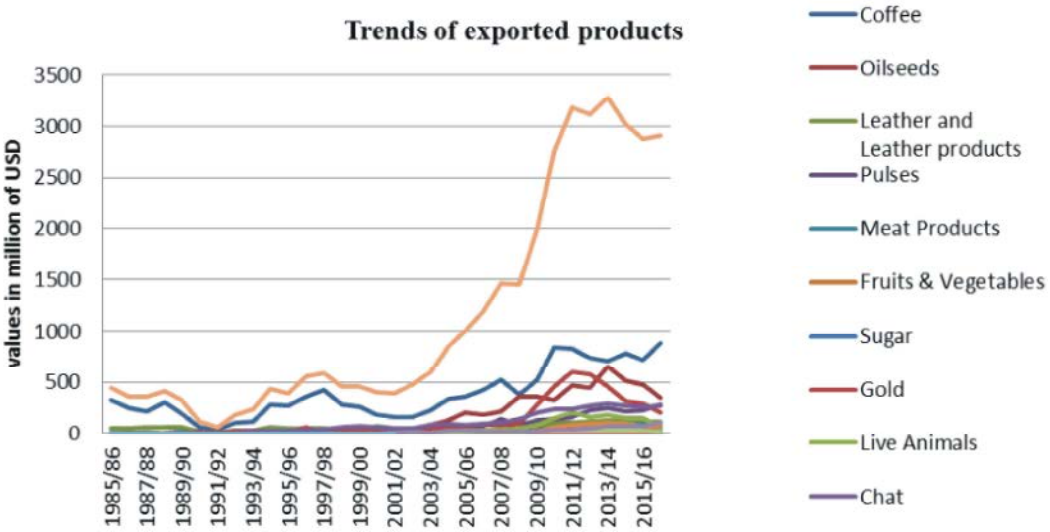

Fig. 7: Contribution of major exported product
Source: Computed from data of National bank of Ethiopia

As a matter of the export basket of the country is concentrated on few agricultural products such as coffee, oilseeds, pulses and semi processed leather. The export destinations of the country's products are very limited as well. On the other hand, as a consequence of the grow of the domestic economy; the demand for consumer and capital goods as well as various other services is growing. Given such circumstances, the fiscal and non-fiscal incentives will not be effective enough to bring solution for narrowing the trade deficit. Furthermore, the foreign exchange controls and procedures which have been established by the government in response to the shortage of foreign currency caused additional costs and delays for all firms in Ethiopia as it affected their dealing with foreign trade partners.

According to the Ministry of Foreign Affairs Foreign Trade Promotion Manual [15] Ethiopia's foreign trade policy has three general objectives. The first is developing and ensuring broad international market for the country's agricultural products and the second one is

generating sufficient foreign exchange which is essential for importing capital goods, intermediate inputs and other goods and services that are necessary for the growth and development of the economy. The third one is improving the efficiency and international competitiveness of domestic producers through participation in the international market. Though there was trade deficit from 1986-2018, it becomes severe since 2004 as shown in figure 6. The deficit in 2018 increased to 18 per cent relative to that of 1986. The ration of export to import was drastically reduced at increasing rate, for instance in 1986 the export ratio was reduced from 41.7 to 18 percent in 2018 period. This indicated that there is high trade deficit from time to time showing disproportional increment in import than export in Ethiopia.

From above figure 6, one can observe import is increasing at increasing rate while export is increasing at decreasing rate resulting in a huge gap in trade balance. This might be due to government policy, black market, poor quality standard, lack of technology, high domestic demand for foreign product. Another very important challenge for the gap in trade balance is unrecorded data. For example in the year 2013 and 2014 adjusted unrecorded import of birr 740.38 million, adjusted unrecorded aircraft imports of birr 510.0 million and petroleum product adjusted by the recent data from IBOD were the prominent witness of the during.

Trends of Ethiopian Agricultural Exported Commodities: The increase in export receipts in recent years was attributed to progresses in both prices and volumes of all commodities mainly the export of coffee, oilseeds, pulses, chat and gold. The increase in receipts from these export items moved up the overall export receipt of the year. The export revenue from coffee was remarkable and it has continued to be the major and reliable export crop of the country over the last previous years [16].

Generally, the fact that Ethiopia's export is mainly dependent on few primary commodities has worsened the vulnerability of receipt instability from merchandise export. The export receipt from five commodities, namely coffee, oilseeds, Pulses, Chat and Live Animals has accounted the lion share that any effect on these dominant commodities' price could adversely affect the entire external trade balance (Figure 7). For depth investigation on Ethiopian agricultural exported product for 32 years data is highly appreciated in this analysis. Looking for the challenges and the common problems in least developing country has paramount importance; however, factors like technological gap, distance from market center and late entry into international market, policy and weather condition are highly aggravated in Ethiopia. Following Figure 7 confirms high export instability and the shares of important agricultural product in Ethiopia.

RESULT

Effect of Total Export Earnings on Economic Growth: Real Gross Domestic Product: In order to achieve a meaningful regression with time series data, using number of years as number of observations, 32 years. After recording the data of all variable using real gross domestic variable as dependent variable and others as explanatory variable, the following result was postulated from the model. Ordinary least square was used for estimation.

As Table 3 revealed coffee, oilseeds, Fruit and vegetables, total export earnings and exchange rate affected Real Gross Domestic Product significantly and statistically. From the analysis, about 87 percent variation in RGDP was due to variation in export of coffee, oilseeds, Fruit and vegetables, total export earnings and exchange rate implying that there a need and strong target by policy intervention to promote these variables to further increase RGDP of the country.

Coffee export is the strong and significant variable affected RGDP. This implies in 32 years, on average as the export share of coffee increased by one percent, RGDP increases by 45 percent. Coffee is the top export of Ethiopia generating $883.9M during 2017 according to NBE.

Oilseed export plays a significant role in increasing the magnitude of RGDP and in turn economic growth of the country. On average, as the export of oilseed increases by a percent, the Real Gross Domestic Product increases by 23 percent. This indicates that oilseed export can contribute more in changing foreign earnings and affecting RGDP positively. Other most important variable in increasing RGDP is total export earnings. On average, as total export earnings increased by one percent, RGDP increases by 78 percent. This indicates that increasing export earnings play a crucial role in increasing Ethiopian RGDP. In 2017, Ethiopia exported $2.2B and the GDP of Ethiopia was $80.6B and its GDP per capita was $1.9k.

The variables of interest, coffee export, oilseed export and fruit and vegetables have a positive effect on economic growth and significant at 1% and 5% level. Pulse export is insignificant effect on economic growth, which contradicts what was expected. Real exchange rate

Table 3: Effects and shares of total exported on RGDP

Variables	coeff	Std. err	t	P>t
LNCoffee	.4543614	.2224598	-2.04	0.052
LNOilseed	.2322957	.073139	-3.18	0.004
LNHide & skin	.0068536	.2182718	-0.03	0.975
LNpulses	.0663775	.0974418	0.68	0.502
LNFruit &vegetables	.22832	.1061249	2.15	0.042
LNTotal export earning	.7857528	.276467	2.84	0.009
LNExchange rate	.4278619	.1396306	3.06	0.005
Const	9.20167	.853151	10.79	0.000
Adjusted R^2		0.87		
Number of years		32		

Source: own computation, 2019

has positive and significant effect on growth which is in line with what is expected. This confirm that from all agricultural exported product coffee, oilseed and fruit and vegetables has positive impact on real gross product which result increase in economic growth.

CONCLUSSION AND RECOMMENDATION

For this study the data of 32 years from 1986-2018 production seasons from central statistical agency and National bank of Ethiopia were used and analyzed. There were tremendous instability in both production and export situation in Ethiopia. Despite the production in hectares of land in these periods were highly boom, the exporting pattern of agricultural commodity like coffee, oilseed and pulses were fluctuated due to border conflict, ethnic clash, poor technology, price instability, quality standard and black market. As indicated from above major grid lines of the graph there were export instability in three crops: coffee, oilseed and pulses due to some reasons war and transition of government. This indicated that war and transition in government can reduce GDP and growth in the long run.

About six export commodities (Coffee, Hides and Skins, Oilseeds, Pulses and Fruits and Vegetables) were used and their share in export earnings are identified and they accounted about 71.82 percent of the country's total export earnings during the 1986-2017 periods. Coffee alone accounted for more than half of the total export earnings of the country over the period 1986-2017. As the result shows the export of coffee and hide and skin which are the country's export commodities, are decreasing. As result shows, the average shares of coffee and hide and skin have shrunk from 64 percent and 15.3 percent respectively in the 1986-1995 period to 51.3 percent and 10 percent, respectively in the 1996-2005 period and then drastically decline to 27.4 percent and 4.3 percent in 2006-2017 period respectively. However, Ethiopian coffee, oilseeds and pulses export is experiencing fluctuation as a result of varying in output level, low international price, high domestic demand and buyer's perception about quality of products is so low. Here it requires policy intervention through enough, on time and regular supply of input for producers, boosting and advertising Ethiopian commodities at international and domestic market to fetch better price and improving the quality of the products at both pre- and post-harvest handling, packing and processing.

At this point, the necessary measure should be taken to increase the share of export commodity which is declining recently to increase the share which in turn raises export earnings of the country. Government policy regarding to agriculture are the prominent factor to change exporting share, for instance, as the result indicates the total exporting share of major crops were drastically reduced from 84.1% in 1986-1995 to 75% in 1996-2005 and then unexpectedly declined to 56.35% in 2006-2017 periods. This might be due to government policy changing from ADLI to industrial development, this policy change undermined agriculture by reducing the expenditure of the government on the sector and black market was aggravated on the past three decades in which a huge amount of export crops were exported illegally by unlicensed traders. It's undisputed that there was border conflict between Ethiopia and Eritrea and ethnic clash with in the country which resulted in reduction of production, productivity, marketing as well as export of major industrial crops for several years.

Analysis of Ethiopian trade balance shows, there is a trade deficit in which import is much greater than our export. As a result of fast growth in import compared to export, trade deficit of the country increased from USD 2, 425.58 million to 8, 784.02 million over the period. This merchandise trade deficit divergence has resulted to wider current account deficit in the country. Another very important challenge for the gap in trade balance is unrecorded data. For example in the year 2013 and 2014 adjusted unrecorded import of birr 740.38 million, adjusted unrecorded aircraft imports of birr 510.0 million and petroleum product adjusted by the recent data from IBOD were the prominent witness of the during. There is an urgent need to address the trade deficit not only from export side but also from the expenditure or import side by identifying products that can be locally produced to reduce foreign exchange out flows. At the same time, expanding the volume of trade, encouraging and subsidizing exporters and diversifying of export products and market destinations need to be investigated in detail to narrow the deficit.

Trends of Ethiopian agricultural Exported commodities indicated that the export of coffee, oilseed, pulses, chat, fruit and vegetables, flowers, skin and hide, Gold, sugar, meat products, live animals, spices, cereals and bee's wax are increasing. This increase in export receipts of the country for which the government should take a care to bring a large incremental change in in export and its respective earnings in a nation. Econometrics analysis revealed that coffee, oilseeds, Fruit and vegetables, total export earnings and exchange rate affected Real Gross Domestic Product significantly and statistically. From the analysis, about 87 percent variation in RGDP is due to variation in total export earnings. Therefore there should be strong target by policy intervention to promote these variables to further increase RGDP of the country.

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