

An Analysis of the Contribution of Agriculture Sector to the Somali Economy

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Abstract

This paper examines the contribution of agriculture sector to the economic growth in Somalia. The study is a time series data sourced from the Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRI) and covers up to 35 years ranging from 1985 to 2017. To analyze the data the Ordinary Least Squares was employed. The empirical results exposed a positive and strong relationship between agriculture sector and Gross Domestic Product (GDP) in Somalia and estimated that it contributes 19.7 percent which is approximately 20 percent. Also 95 percent of the variation in GDP is explained by agriculture sector. At the end of analysis the paper suggests some policy recommendations.

Keywords: Local government debt; Debt replacement risk; Audit governance; Evolutionary game; Computational experiments

Introduction

The majority of the population in Africa lives in the rural areas, where the source of their livelihood immensely depends on farming and livestock keeping. For many years agriculture has been the most important sector in most of the developing countries as well as almost all African countries and is considered as a key sector in overcoming poverty. Consequently the vast majority of the households directly or indirectly rely on agriculture; hence the common expectation would be to be viewed agriculture as a fundamental constituent of the growth and development.

However, while considering the determinations that many communities and their states collectively do to eliminate poverty through enhancing and fostering agriculture sector, it's a noteworthy that many Asian and Latin American countries have slashed poverty and transformed their economies. Likewise Somalia is fortunate to have an abundant arable land and fertile soil along with a climate suitable for cultivation. Agriculture has been the backbone of the Somali economy constituting the biggest portion of its GDP and a prominent sector that plays a vital role in creating employment opportunities, poverty reduction and most notably is a key driver of its economy [1].

In the last three decades, despite the decline of the sector's overall productivity due to the lack of government role, the agriculture sector still maintains to be the biggest contributor of the country's export sector that consequently brought an increase in its overall gross domestic product.

Therefore; since there are no enough studies that have been conducted so far, in this paper using a time series data of up to 35 years sourced from SESRI, the researcher's main intention is to examine the causality relationship between agriculture sector and the GDP and also the extent to which the agriculture sector contributes to the economy of Somalia.

Literature Review

For most of African countries, agriculture is the biggest sector that contributes to the growth of their economies, averaging 21% and ranging from 10% while reaching up to 70% of the GDP [2]. As the World Bank stated; in 2014 globally the agriculture sector accounted for one third of the global GDP [3]. The extent to which African countries

rely on agriculture sector may vary, but the feature that most of them have in common is that; they heavily depend on agriculture sector.

Likewise Somalia's agriculture sector plays a vital role and is a key driver of its economy. More than two thirds of the country's labor force is employed in the agriculture sector and it accounts for more than sixty percent of the country's productivity [4].

The report, which conducts a wide-ranging historical review of Somalia's main agricultural sub-sectors (livestock, forestry, crops, and fishing), analyses the subsectors' key medium and long-term development potential and restraints and outlines policy and potential investment opportunities. It is part of a wider Country Economic Memorandum (CEM) series investigating growth potential across sectors to assist Somalia in its implementation of the National Development Plan (2017-2019), and the groundwork of the subsequent plan.

According to the World Bank 2018; Agriculture's share of gross domestic product (GDP) is nearly 75%, and denotes 93% of total exports, mostly associated with robust livestock exports in the recent pre-drought years. Sesame is by far the biggest export among crops, followed by dried lemon, in the wake of the total collapse of banana exports.

On his article North (1959) discussed two arguments based on agriculture's contribution on the growth of the economies. The first argument focused on incentives that industrialized activities occur relies on punctual obtainability of the agricultural commodities to run the industrial activities. The additional argument proposes that the procedure of economic growth is varying in accordance with period, and even locational matrix. Furthermore the researcher added that the effective agricultural productivity comes through proper division of the workforce.

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Olajide et al. have employed Ordinary Least Squares (OLS) regression method to estimate the relationship among agricultural resource and economic growth in Nigeria between and used a time series data of 40 years that ranges from 1970 to 2010 [5]. Their results revealed a positive causal relationship between GDP and agricultural output in Nigeria.

In Indonesia, Fuglie identifies the drivers of growth in agriculture between the 1960s and 2000 [6]. He argues that although agricultural productivity in the 1970s and 1980s was increasing, this trend has been flat since the early 1990s, with most growth in agriculture being explained by increases in production inputs (labor and land). Fuglie also argues that the reason for the productivity stagnation from the 1990s onward is the low levels of both private and public investments in particular, public investments in research and development, rural infrastructure, and irrigation (which are necessary complements to private investments in the sector)

According to Gollin et al., the researchers argued on their research low agricultural productivity can considerably delay industrialization [7]. By postponing the commencement of industrialization, poor and in effective agricultural technologies or policies result in a country's per capita income falling far behind than that of the leader. Additionally the researchers suggested that Improvements in agricultural productivity can accelerate the start of industrialization and, hence, have considerable effects on a country's relative income.

Mehboob, on their intention to examine the role of the agriculture sector's contribution to the Pakistani economy and sub sector's contribution they used an Ordinary Least Squares (OLS) method and proved their hypothesis by finding that agriculture sector contributes

significantly to the Pakistan economy and concluded that there is a positive relationship between Pakistan's economic growth and agriculture sector [8,9].

Methodology

This study employed time series data on the dollar value of the overall agricultural productivity in Somalia and Economic growth over the period of 1985 to 2017. The study was a univariate structured data as it only analysis the extent to which agriculture sector contributes Economic growth in Somalia. The method of data analysis is the ordinary least square (OLS) method. The researcher made use of econometric software, particularly STATA 13.

Model specification

$GDP = f(\text{Agricultural productivity})$

With its associated linear function: $GDP = \beta_0 + \beta_1 \text{Agrpro} + e$

Where: GDP=Gross Domestic Product, β_0 =Intercept, β_1 =estimation coefficient

Agrpro=agricultural productivity, and e=error term

Estimation and Results

We used linear specification to investigate the contribution of the agricultural sector on gross domestic product in terms of goodness of fit. The below table illustrates the results of the regression.

Table 1 summarizes the regression output of the observed variables, in this case GDP and agriculture sector. The regression results at 5% level of significance for the variables indicate that there is positive relationship between the dependent variable GDP and the independent variable Agriculture. Thus concludes with the rejection of the null hypothesis. Referring the regression output the estimated model has an adjusted R2 of 0.95 which demonstrates that fit was impressive and about 95 percent of the total variation in GDP is explained by agriculture. One unit change in agricultural productivity will come up with 19.7 percent increase in GDP (Figure 1).

Table 2 illustrates the estimated results of correlation test. The results indicated that there was a strong positive correlation between

(1)	GDP
Agriculture	1.976*** (0.000)
_cons	-171242659.6* (0.015)
N	33
R2	0.954
p-values in parentheses *p<0.05, **p<0.01, ***p<0.001	

Table 1: Regression output.

GDP and Agricultural productivity trends over time

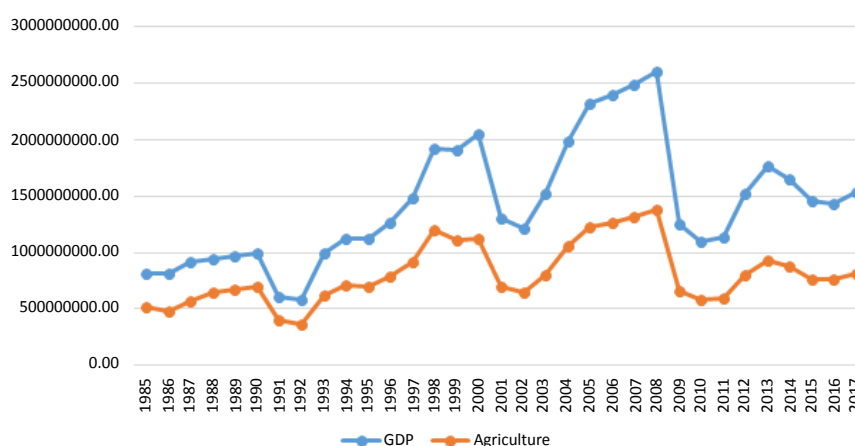


Figure 1: Figure showing GDP and Agricultural productivity trends over time.

Correlate GDP Agriculture (obs=33)	
GDP	1.0000
Agriculture	0.9768 1.0000

Table 2: Correlation test.

economic growth and agriculture sector. This denotes that growth in agriculture sector will lead to the growth in GDP.

Conclusions and Recommendations

In general, using the case of Somalia the paper demonstrated in a simple econometric model that agriculture sector significantly contributes to the economic growth. The results revealed that agriculture sector contributes to the Somali economy approximately 20 percent as the regression output showed 19.7 percent. Also in testing the correlation between GDP and agriculture sector, the test showed that there strong positive correlation between them.

With regard to the findings of the research paper several recommendations are suggested:

➤ While considering the extent of the sector's contribution to the economy, the government should provide much support to the farmers.

➤ Given that the very little consumption of fertilizer products used by the Somali farmers, there is a need for fertilizer ingredients to boost agricultural productivity.

➤ Now that the cultivation methods practiced in Somalia is a primitive approach, there is need for more sophisticated methods to enhance the agricultural output.

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