



Agriculture and economic growth in Republic of Ghana

Gana Cumhuriyeti'nde tarım ve ekonomik büyüme

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ABSTRACT

The main objective of this work was to examine the contributions of the agricultural, service and industrial sectors to economic growth in Ghana, and to show the distribution and changes in growth rates by year and the current performances of the sectors. Time series data from 1984-2013 on all the variables of interest obtained from various organizations was used for the analysis. The Ordinary Least Squares estimation technique was used for the analysis. The results show that a 1% increase in the growth of the agricultural sector will cause GDP growth to increase by 0.248%. Also, a 1% increase in the growth of the services sector will lead to 0.472% increase in GDP growth. Finally, 1% increase in the growth of the industrial sector will bring 0.32% increase in GDP growth. It is concluded that the service sector contributed most to the overall growth. It is recommended that for Ghana to achieve higher GDP growth rate, she should activate / strengthen the agricultural sector as well as its services. Therefore, for Ghana to attain higher GDP growth rates as her key dream, more of her resources should be channeled into the service sector (0.472). Nevertheless the government should make structural changes in agricultural sector as it also forms the core of growth and development of the economy and employs the highest labour force. The agricultural sector should also be modernized for further growth and further, government must provide enough subsidies and incentives to motivate farmers especially for cocoa.

Key Words: GDP Growth rates, Agricultural sector, Services sector, Industrial sector, Ordinary Least Squares method, Economic development, Sectoral growth

öz

Bu çalışmanın temel amacı, tarım, hizmet ve sanayi sektörlerinin Gana'daki ekonomik büyümeye olan katkısını incelemek ve büyüme oranlarının yıllara göre dağılımını ve değişimini sektörlerin mevcut performansını ortaya koymaktır. Analiz için çeşitli kuruluşlardan elde edilen tüm değişkenler üzerinde 1984-2013 arası zaman serileri verileri kullanılmıştır. Analiz için En Küçük Kareler tahmin tekniği kullanılmıştır. Sonuçlar, tarım sektörünün büyümesinde% 1'lik bir artışın GSYİH büyümesinin% 0,24 oranında artacağını göstermektedir. Ayrıca, hizmet sektörünün

büyümesinde %1.0'lik bir artış, GSYİH büyümesinde %0.472 oranında bir artışa yol açacaktır. Son olarak, sanayi sektörünün büyümesindeki %1.0'lik artış, GSYİH büyümesinde %0.32 oranında bir artış sağlayacaktır. Hizmet sektörünün genel büyümenin çoğuna katkıda bulunduğu sonucuna varılmıştır. Gana'nın daha yüksek GSYH büyüme oranına ulaşması için, hizmetin yanı sıra tarım sektörünü de aktive etmeli / güçlendirmelidir. Bu nedenle, daha fazla kaynak hizmet sektörüne yönlendirilmelidir (0.472). Bununla birlikte, hükümetin, ekonominin büyümesi ve gelişmesinin çekirdeğini oluşturduğu ve en yüksek işgücünü istihdam ettiği için tarım sektöründe yapısal değişiklikler yapması gerekmektedir. Tarım sektörü, daha fazla büyüme için modernize edilmeli ve ayrıca, hükümet çiftçileri özellikle kakao için motive edecek yeterli sübvansiyon ve teşvik sağlamalıdır.

Anahtar Kelimeler: GSYİH Büyüme oranları, Tarım sektörü, Hizmet sektörü, Sanayi sektörü, En küçük kareler yöntemi, Ekonomik gelişme, Sektörel büyüme

Introduction

Economic growth is one of the macroeconomic indicators that every country seeks to achieve (Faridi, 2012). Gross Domestic Product is the total dollar amount of all goods and services produced. The growth rate is the percentage increase or decrease of GDP from the previous measurement cycle. The GDP growth will increase if retail expenditures, government spending, and exports increase. The growth rate increases with increasing in exports, inventory, and declines in consumer, business or government spending. The GDP growth rate is the most important and valuable indicator of economic health. It has a direct effect on businesses, jobs and personal income, that is: if GDP grows, so will business, jobs and personal income. If GDP is slowing down, then businesses will hold off investing in new purchases and hiring new employees, waiting to see if the economy will improve. This, in turn, can easily further depress GDP and consumers will have less money to spend on purchases. When the GDP growth rate actually turns negative, then the economy heads towards a recession.

Ghana is generously endowed with abundant natural resources including biological and non-biological resources. The resources of the entire world should be developed to the fullest extent possible with

available means as a whole can progress only by the efficient and rational use of the natural resources. Resources depend on importance attached to it. Hence, agriculture constitutes one of the most important sectors of the economy. The significance of agriculture resource in bringing about economic growth and sustainable development of a nation cannot be underestimated. Agriculture plays a key role and indeed contributes to the growth of the economy, provides employment opportunities for the teeming population, export revenue earnings and eradicates poverty in the economy. Stated that stagnation in agriculture is the principal explanation for poor economic performance, while rising agricultural productivity has been the most important driving force of successful industrialization (Abayomi, 1997).

Agriculture is said to play a very key role in contribution to socio-economic development in many countries. It is the primary source for employment, livelihood, and food security for the majority of rural people. The success of this continuation largely depends on the direct influence it has on the national economy as well as how the agricultural sector stimulates the growth of other sectors in the economy. Consequently, understanding the role of agriculture and its linkages to the rest of the economy is of good importance.

A stable, strong and efficient agricultural sector would enable a country to feed its growing population, generate employment, earn foreign exchange and provide raw materials for industries. The agricultural sector has a multiplier effect and a great influence on any nation's socio-economic and industrial fabric because of the multifunctional nature of agriculture (Ogen, 2007).

In addition, the effects of the various sectors and subsectors in an economy mainly agriculture (crops and livestock, cocoa production and marketing, fishing, forestry and logging), service (transport, storage and communication, wholesale and retail trade, restaurant and hotels, finance, insurance, real estates, and business services, government services, community, social and personal services and producers of private non-profit services) and industry (mining and quarry, construction, electricity and water and manufacturing) have not been left out of the growth literature. These various sectors might contribute either positively or negatively to GDP growth in an economy depending on the kind of policies put in place by the policy makers (Johnston, 1970).

Ghana's economic reform program was implemented in three phases: In the first phase between 1983 and 1986, the attention was focused on getting prices right, and on reducing the government's budget deficit by increasing revenues. Between 1987 and 1990, efforts were geared towards the initiation of structural changes, such as the liberalization of the exchange rate and the trade system, the start of the SOE divestiture program, and civil service reforms. In the third phase, after 1990, the government started to look at the more demanding structural and institutional reforms.

Ghana's agriculture is dominated by smallholders which are rarely larger than 4 ha each enterprise. The popular method of production is mixed cropping, which ensures the combination of crops with roots and other agricultural products. The introduction of large scale, mechanized farming during the 1960s proved to be a failure, and as of now hardly any large farms continue to be in operation. Food crops are said to be the main contributors to agricultural output, followed by cocoa, timber and fishing. Ghana's most important staple crops are root crops like cassava and yams. The most valuable tree crops are palm fruit and cocoa.

Historically, most important cash crops like palm oil and cotton had been marketed by government monopolies. During the ERP, the government removed food price controls, and abandoned most marketing monopolies except for cocoa. The results of these measures were mixed. After the removal of price controls, mainly the production of starchy staples and cereals, and fresh fruit appear to have risen, while the production of most other crops has not taken off. Overall, the productivity of Ghana's agricultural sector is quite low, estimated to operate only at 20 percent of its capacity because of low investments and poor technology (EIU, 1998a). Low records on investments since 1983, coupled with the removal of subsidies on fertilizers and other agricultural inputs, have not helped to improve its productivity, leaving a good proportion of unexploited potential for further expansion.

Ghana's mining sector is dominated by gold mining. With the introduction of a new mineral law in 1986 and the privatization of the country's largest gold mines, the mining industry has been thriving, and gold output has increased more than five-fold between

1987 and 1996. Ghana is one of the world's largest exporters of manganese, and mines some bauxite and diamonds. The diamond, manganese and bauxite sectors have also recovered after considerable contraction during the decline in the 1970s, increasing its output by almost 50 percent between 1990 and 1996 (IMF, 2000a).

The influence of the ERP on the manufacturing sector has been mixed. Ghana has a broad industrial base across almost all sectors. Most of today's larger manufacturing companies were established as state-owned enterprises in the 1960s. Between 1983 and 1990, the manufacturing sector grew by 8.1 percent per year, benefiting from the availability of imported inputs, which enabled them to use their existing excess capacity. From 1990 onwards, growth slowed to 2.2 percent, mainly because of the exposure to import competition; and the abandonment of subsidies forced companies to rationalize and improve their performance. Employment in manufacturing fell from 78'000 in 1987 to 28'000 in 1993, (Lall, 1995) and the number of companies between 1987 and 1993 declined by 21 percent, from 634 companies to 500 companies.

Ghana's service sector has been the fastest growing sector of the economy, The bulk of service activities are in trading and public services. Trading in particular is one of the activities that benefited from the contraction of the manufacturing services and absorbed part of their unemployed workers. Transportation services have grown only slowly because of substantial structural problems, such as a poor road and railway system. One of Ghana's promising service sectors is tourism, which has become the country's third largest foreign exchange earner (EIU 1998b). In addition, there are

about 16 insurance companies active in Ghana, as well as several security brokerages, export financing and leasing companies, and venture capital funds. The Ghana stock exchange, currently the fifth largest in Africa, has 21 companies listed. At 4 percent turnover and with very high bid/ask spreads, the country's stock market remains one of the world's least liquid exchanges (EIU, 1999c).

The primary objective of this research is to present the current economic position (growth) of the country and to analyze the impact of agriculture on the economy of Ghana, to show the growth and decline between 1984-2013, to examine the performance, impact and contributions of the agricultural sector, service sector and industrial sector on economic growth.

Materials and Methods

Data set of this work has consisted of time series data on GDP, browsing studies and databases searching for information relating to our research questions. Thus it has been similar to a secondary analysis of already existing data, although it has been drawing on the original authors' arguments, explanations and analyses in addition to their data (see for example World Bank, 2007, Country Intelligence: Ghana, 2008, 2011, 2013). Also, data and relevant information were drawn from the Ghanaian Newspapers, published articles and journals. The Ghanaian Statistical Services and the Bank of Ghana were contacted for the yearly update of statistical figures of the country's GDP. Literature review has been helpful in the data collection as the theories on development and growth illuminate factors that could be important and indicate what data that should

be collected.

Data from other reliable sources which include the time series data such as the Ministry of Food and Agriculture, Bank of Ghana, Budget Statement, Statement of the Ghanaian Economy and the World Bank were collected for the purpose of this study. Calculations and analysis were also made using statistical package programs.

All estimates, including those presented here as comparatively reliable, can potentially be wrong. Nevertheless, using them, but with caution, is the most reasonable approach. Since data is seldom perfectly reliable and totally free of error most research would be impossible if data used could be one hundred percent sure of. Or, in the words of Maddison (2001), even if estimates were based from earlier times on weaker evidence it is —a meaningful, useful and necessary exercise to attempt to find as good numbers as possible.

In order to examine the contributions of the agricultural sector, service sector and industrial sector on economic growth, the following econometric model is specified.

Model:

$$\text{GDPG} = (\text{AG}, \text{IG}, \text{SG}) \quad (1)$$

$$\ln \text{GDP} = \ln (\beta_0 \text{AG}^{\beta_1} \beta_1 \text{IG}^{\beta_2} \beta_2 \text{SG}^{\beta_3} \beta_3 e^{\epsilon} \epsilon) \quad (2)$$

$$\ln \text{GDPG}_t = \beta_0 + \beta_1 \ln \text{AG}_t + \beta_2 \ln \text{IG}_t + \beta_3 \ln \text{SG}_t + \epsilon_t \quad (3)$$

$$\text{GDPG}_t = \beta_0 + \beta_1 \text{AG}_t + \beta_2 \text{IG}_t + \beta_3 \text{SG}_t + \epsilon_t \quad (4)$$

Where;

%GDPG = GDP growth

%AG = Growth of the agricultural sector

%SG = growth of the service sector

%IG = growth of the industrial sector

β_0 = intercept (if $\text{AG}_t = \text{SG}_t = 0$)

β_1 = coefficient of AG

β_2 = coefficient of SG

β_3 = coefficient of IG

ϵ_t = error term (normally distributed with zero mean and constant variance)

The following are the expected results

$$\partial \text{GDPG} / \partial \text{AG} > 0; \partial \text{GDPG} / \partial \text{SG} > 0; \partial \text{GDPG} / \partial \text{IG} > 0; (5)$$

To determine which sector is to lead the growth process of Ghana, all the variables of interested has been standardized. That is, finding the means of each variable and subtracting them from each year's value over the study period respectively.

The method of data estimation technique used is Ordinary Least Squares (OLS). The reason is that it is one of the simplest methods of linear regression. Its goal is to closely fit a function with data and it does so by minimizing the sum of squared errors from the data.

Results and Discussion

Ghana's economy continues to be dominated by the agricultural sector. Although its importance has diminished since 1972, it is still responsible for 40 percent of the GDP. The second largest sector after agriculture is the service sector, in particular trading. Industry only commands about 15 percent of the GDP showing that Ghana is still at the initial stage of industrialization, even when compared with other countries in the region (IMF, 2000a).

Majority of Ghana's industrial activity is concentrated around the capital Accra and the adjacent industrial area of Tema. Kumasi, the capital of the Ashanti region, is the home of most sawmills and wood processing companies. Most of the country's precious natural resources are mined in the Western, Central, Ashanti and Accra region. Ashanti also has the largest share of the country's

cocoa trees, as well as a large part of the country's timber resources. Northern Ghana is the area noted for the production of staple foods.

From the Table 1, 2 and 3, it which shows the values of the percentage contribution of the various sectors, that is Agriculture, Industry and Service to the total GDP of the country. It could be said that Agriculture sector recorded the highest contribution to the gross domestic product of Ghana for the

past 22 years followed by the Industry then the Service sector. This means that agriculture had been the country's major source of income, which also confirms the fact that this sector had employed 70% percent of the country's population. Also from the same table, the opposite could be seen, that is the Service sector took over the lead as the major contributor of gross domestic product from 2006 to date, then followed by the Industry then Agriculture.

Table 1. GDP Figures by sectors (%) (1984-2013)
Çizelge 1. Sektörlere göre GSYİH(%) (1984-2013)

Year (Yıllar)	Agriculture (Tarım)	Industry (Endüstri)	Service (Hizmet)	Total (Toplam)
1984	51.9	11.1	37.0	100
1985	48.4	18.1	33.5	100
1986	48.0	17.3	34.7	100
1987	50.7	16.4	32.9	100
1988	49.7	16.7	33.6	100
1989	49.4	16.9	33.7	100
1990	45.0	17.0	38.0	100
1991	45.5	17.1	37.4	100
1992	44.9	17.6	37.5	100
1993	41.3	27.9	30.8	100
1994	41.9	27.8	30.3	100
1995	42.7	26.8	30.5	100
1996	43.8	26.7	29.5	100
1997	40.0	28.8	31.2	100
1998	40.2	28.3	31.5	100
1999	39.9	28.4	31.7	100
2000	39.4	28.5	32.1	100
2001	39.3	28.2	32.5	100
2002	39.2	28.3	32.5	100
2003	40.2	27.8	32.0	100
2004	41.5	27.2	31.3	100
2005	40.9	27.5	31.6	100
2006	30.4	20.9	48.7	100
2007	29.0	20.8	50.2	100
2008	30.9	20.5	48.6	100
2009	31.8	26.3	41.9	100
2010	29.7	19.2	51.1	100
2011	25.3	25.7	49.0	100
2012	22.9	28.8	48.3	100
2013	21.8	28.6	49.6	100

Source: World Bank Africa Database 2004, Bank of Ghana, Ghana Statistical Service,

Table 2. GDP growth figures by sectors (%) (1984-2013)
 Çizelge 2. Sektörlere göre GSYİH'daki büyüme (%) (1984-2013)

Year (Yıllar)	Agriculture (Tarım)	Industry (Endüstri)	Service (Hizmet)	GDP Total (GSYİH Toplam)
1984	9.7	9.0	6.9	8.4
1985	0.6	17.6	7.8	5.1
1986	3.3	7.6	7.1	5.2
1987	0.0	11.5	9.0	4.8
1988	3.6	7.3	7.8	5.6
1989	4.2	2.6	6.7	5.1
1990	-2.0	6.9	7.9	3.3
1991	4.7	3.7	6.3	5.3
1992	-0.6	5.8	7.7	3.9
1993	2.5	4.3	7.2	4.9
1994	1.9	3.5	5.0	3.3
1995	3.7	4.1	4.7	4.1
1996	5.2	4.7	4.2	4.6
1997	4.3	6.4	6.5	4.2
1998	5.1	3.2	6.0	4.7
1999	3.9	5.0	5.0	4.4
2000	2.1	3.8	5.4	3.7
2001	4.0	2.9	5.1	4.2
2002	4.4	4.7	4.7	4.5
2003	6.1	5.1	4.7	5.2
2004	7.5	5.1	4.7	5.8
2005	4.1	7.7	6.9	5.9
2006	4.5	7.2	6.1	6.3
2007	-1.7	6.0	7.6	6.4
2008	7.4	15.0	7.9	8.4
2009	7.2	4.5	5.6	3.9
2010	5.3	6.9	9.8	8.0
2011	0.8	41.6	9.4	15.0
2012	2.3	11.0	12.1	8.7
2013	5.2	6.6	10.3	7.3

Source: World Bank Africa Database 2004, Bank of Ghana, Ghana Statistical Service,

Table 3. GDP figures by sectors (\$BN) 1984-2013
 Çizelge 3. Sektörlere göre GSYİH (Milyar Dolar) (1984-2013)

Year (Yıllar)	Agriculture (Tarım)	Industry (Endüstri)	Service (Hizmet)	GDP Total (GSYİH Toplam)
1984	2.28	0.48	1.64	4.4
1985	2.17	0.81	1.50	4.50
1986	2.74	0.98	1.98	5.72
1987	2.57	0.83	1.66	5.07
1988	2.57	0.86	1.74	5.19
1989	2.59	0.88	1.76	5.25
1990	2.64	0.99	2.23	5.88
1991	3.00	1.12	2.46	6.60
1992	2.87	1.12	2.40	6.41
1993	2.46	1.66	1.83	5.96
1994	2.27	1.51	1.64	5.44
1995	2.75	1.73	1.97	6.46
1996	3.03	1.85	2.04	6.93
1997	2.75	1.98	2.14	6.89
1998	3.00	2.11	2.35	7.48
1999	3.07	2.18	2.44	7.71
2000	1.96	1.41	1.59	4.98
2001	2.08	1.49	1.72	5.31
2002	2.41	1.74	2.00	6.16
2003	3.06	2.12	2.44	7.63
2004	3.68	2.41	2.77	8.88
2005	4.38	2.95	3.39	10.73
2006	6.20	4.26	9.93	20.41
2007	7.17	5.14	12.42	24.75
2008	8.81	5.84	13.86	28.52
2009	8.25	6.83	10.88	25.97
2010	9.55	6.17	16.43	32.17
2011	10.00	10.16	19.38	39.56
2012	9.55	12.02	20.16	41.74
2013	10.49	13.76	23.87	48.13

Source: World Bank Africa Database 2004, Bank of Ghana, Ghana Statistical Service,

Mean of dependent variable = 1.6768;
Standard deviation of dep. var. = 0.33041;
Sum of squared residuals = 0.971; Standard
error of estimate = 0.19325; Unadjusted R^2 =

0.693; Adjusted R^2 = 0.658; F-statistic (3, 26)
= 593.038 (p -value < 0.00001); DurbinWatson
statistic = 1.925. Variance Inflation Factors
(1.1, 1.6, 1.7).

Table 4. OLS estimate on GDP growth figures by sector (%)

Çizelge 4. Sektörlere göre GSYİH'daki büyümenin (%) en küçük kareler yöntemi ile tahmini

	Coefficients	Standard Error	t Stat	Sig.
Intercept	-2.33	0.332	-0.701	0.489
LAG	0.248	0.066	3.781	0.001
LIG	0.315	0.078	4.030	0.000
LSG	0.472	0.175	2.692	0.012

The method of Ordinary Least Squares (OLS) was used in the determination of the regression coefficient and other statistical parameters required in analysis (Table 4). This method gives Best Linear Unbiased Estimates (BLUE) that is efficient (Gujarati, 1995). Simple log linear regression model was used to analyse the time series data which

was collected. The original OLS results did not give us any indication of the presence of multicollinearity judging from the t-ratios and R^2 . However, it was decided to do another test to confirm the above results or otherwise. Therefore it was conducted the Auxiliary regression. The results are as presented in Table 5.

Table 5. Test for the presence of multicollinearity using auxiliary regression

Çizelge 5. Yardımcı regresyon kullanarak çoklu doğrusallık varlığının test edilmesi

Function	R^2 of auxiliary reg.	R^2 of original reg.	Conclusion
LAG=f L(IG,SG)	0.103	0.693	No multicollinearity
LIG=f L(AG,SG)	0.227	0.693	No multicollinearity
LSG=f L(AG,IG)	0.267	0.693	No multicollinearity

Here, it was compared the two R^2 values. Using Klein's Rule of Thumb, if the R^2 for the auxiliary regression is higher than for the original regression, then there is probably multicollinearity. Multicollinearity is not present in the regression since the original value of the R^2 is greater than the R^2 of the auxiliary regression. The value of Durbin Watson statistics is 1.925, which indicates the presence of no autocorrelation since the value falls between 1.5 and 2.5 judging from the rule of thumb. Also, based on the variance inflation factor (VIF), variables are not multicollinearity since the VIF is below the threshold which is 3, beyond which it

would be said to exist.

From table 4 and 5, it could be seen that this regression result is not affected by the problems of multicollinearity and autocorrelation. In addition, the regression result is not nonsense that is not spurious since DW (1.925) > R2 (0.693). Therefore, meaningful analysis and conclusions can be drawn from it. The value of R^2 (0.692) though not very high. Statistically, it has a very good fit. Economically, about 70% of the total variation in GDPG is explained by the independent variables. The remaining is 3.041% which is attributed to other factors. Overall, the regression equation is statistically significant since F-calculated > F-critical.

Agriculture sector performed well as a result of the introduction and proper implementation of Economic Recovery and Structural Adjustment Program, ERP and SAP respectively in 1983 just after famine period under President Jerry John Rawlings regime.

It could be said that agriculture was given much attention which therefore improved the sector. Also, the subsequent decline in agricultural sector in the other years could be attributed to shift of attention away from it, change of government which led to other introduction of new policies and other natural factors such as drought.

In terms of the GDP or economic growth, there has not been consistent in the growth figures though there have not been any negative values in the total gross domestic product (GDP) of the economy of Ghana. Therefore, this indicates that the economy has not entered into recession or depression for the past thirty years, which is from 1984-2013. Table 2, shows the GDP growth figures in percentage of the economy, which indicates that there has been a little sustainability in the growth with highest record of 15.1% in 2011 followed by 8.7% and 8.4% in 2012 and 1984 respectively and currently at 8.3%. To attain a maximum sustainable economic growth coupled with price stability continues to be the central objective of macroeconomic policies for most countries in the world today.

From the summary output (Table 4), the unstandardized coefficient of agricultural (AG), industrial (IG) and service (SG) sectors in terms of growth are 0.248, 0.315, and 0.472 respectively. In the statistical table above, the service sector recorded the highest mean of 1.897 which shows that this sector has been the main sector that contributes the most to GDP growth of

Ghana. Also from the regression model above, 1% growth in GDP of service sector will lead to 0.472% rise in the total GDP of the economy, followed by industrial then the agricultural sector with 0.315% and 0.248% respectively for every 1% rise in GDP growth of these various sectors. This infers that all the three sectors growth shows a positive relationship with GDPG and it is statistically significant since t-ratio is greater than critical value in all case.

Even though Table 1 and 3 shows that agriculture had been the major contributor to real GDP and is the backbone of the country, its impact on the economic growth is the least. This is because the GDP growth is based on the differences in yearly values expressed as percentage and if the change or the difference is insignificant the growth will be low and vice versa. This had been the case of the agricultural sector for the past 27 years that is only in 2003, 2004 and 2009 it recorded the highest growth, nevertheless this sector remains the key in the economic development of the country.

The GDP growth rate increases if retail expenditures, government spending, and exports increase since it depend on these factors. The growth rate will decline with increases in exports, inventory, and declines in consumer, business or government spending (BEA). The GDP growth rate is the most important indicator of economic health. If GDP is growing, so will business, jobs and personal income. If GDP is slowing down, then businesses will hold off investing in new purchases and hiring new employees, waiting to see if the economy will improve. This, in turn, can easily further depress GDP and consumers have less money to spend on purchases. If the GDP growth rate actually turns negative, then economy is heading

towards a recession.

Another key factor that has great impact on economic growth is the force of inflation. Basically the rate of economic growth depends primarily on the rate of capital formation and the rate of capital formation depends on the rate of savings and investment (Datta and Kumar, 2011). World economic growth and inflation rates have been fluctuating. Likewise, inflation rates have been dominating to compare with growth rates in virtually many years (Madhukar and Nagarjuna, 2011) and relationship between inflation and the economic growth continued to be one of the most macroeconomic problems.

Several studies have estimated a negative relationship between inflation and economic growth for instance in 1970s, countries with

high inflation especially the Latin American countries began to experience a decrease in growth rates. In 1990 and 1994 the country's inflation was 37.2% and 24.7% respectively, and this could be one of the many reasons why the country experienced the least economic growth in those years. Further, in 2011 the inflation was at 8.6% at the end of the year, and that recorded the peak in the economic growth. This confirms the study of Mubarik (2005) which states that low and study inflation promotes economic growth and vice versa.

Other factors such as poor government policies, low level of investment coupled with decline in consumer and government spending all contributes to low real GDP growth of a country.

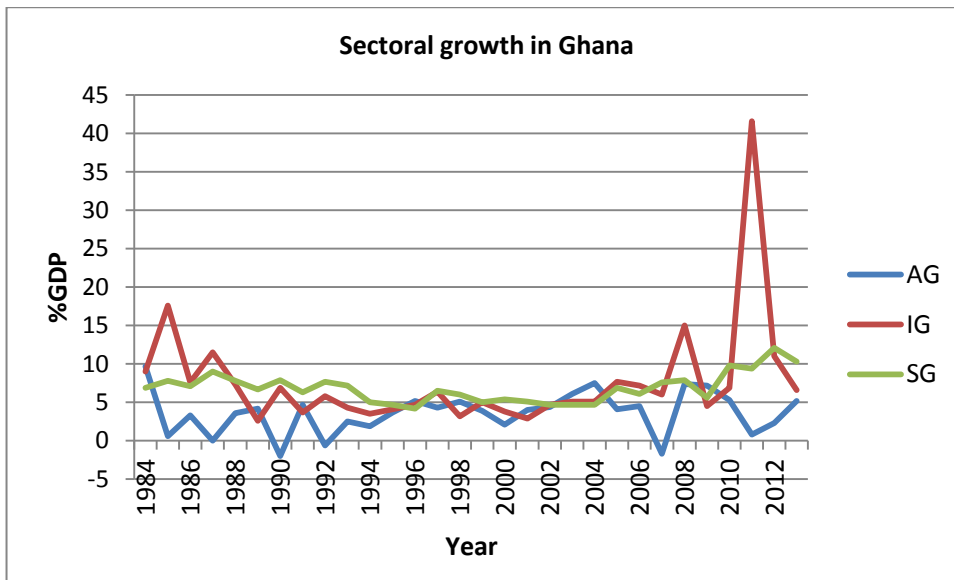


Figure 1. Comparison of sectoral growth in Ghana.

Şekil 1. Gana'da sektörel büyümenin karşılaştırılması.

From the figure 1, it shows the trend in the growth of the three sectors over 30 years (1984-2013). It is clear from the graph that agriculture sector recorded the least growth even though its real GDP values in billion dollars recorded the highest from 1985 to

2006. Also, apart from agricultural sector which recorded negative growth which indicated that the sector was on its way to economic recession in 1990, 1992 and 2007, the other sectors show positive growth throughout the years under study. Even

though this sector employs the largest portion of Ghanaian labour force and as the matter of fact the biggest sectors it has declined in growth despite its greatest proportion of real GDP values over the past years. The decline in this sector could be due to lack of attention, poor policies, lack of incentives and inadequate improved planting material and natural disasters such as storms and drought. It could also be seen from the graph the industrial sector peaked in 2011 and also recorded the highest GDP owing to the discovery of the petroleum and increased export of other natural resources such as gold and diamond and bauxite boosted the industrial sector.

The growth of the agricultural sector has been variable. A particularly dismal agricultural growth performance was recorded in 1990 and 1992. The annual average rate of agricultural growth was 1.97% during the 1990s, whereas it was 3.57% during 1980s. Hence, agricultural growth had declined during the 1990s. Agriculture's share of aggregate output growth averaged 12.78% per annum during 1990s, and -2.0% and -0.6% in 1990 and 1992, respectively. It could be noted that the negative shares originated in the fall in agricultural real output during 1990 and 1992. On the other hand, the services sector seemed to have recorded high growth rates during the period.

The agricultural sector in Ghana had been characterized by a number of constraints during the period 1983-2001. First, financial sector liberalization and monetary policy in general resulted in very high agricultural lending rates of the order of over 45% per annum and a crowding out of agriculture in formal domestic credit allocation, precipitating a fall in the share of agriculture

during the period. Since the initiation of financial sector liberalization, the formal financial institutions have tended to allocate smaller proportions of domestic credit to agriculture and, indeed, to direct productive activities. These financial institutions have rather tended to invest in treasury bills and other high-interest bearing assets. This has been because of the lower effective return on lending to the agricultural sector. In addition, agriculture in Ghana is still largely rainfed and subject to the vagaries of weather and biological cycles, making agriculture a rather risky business. Notably, weather conditions, particularly the amount, frequency, timing and distribution of rainfall, have been very uncertain, whereas access to irrigation facilities has been inadequate. Further, farmers' access to rural infrastructure has been inadequate. The share of agriculture in total government expenditure declined. Access to appropriate processing and storage facilities has also been inadequate, leading to high levels of post-harvest losses. Notably, the linkage between agriculture and industry has been rather weak.

It must be emphasized that concrete economic policies made had been the driving force behind the country's general economic growth and success especially in the area of agriculture. Financial Sector Adjustment Programme (FINSAP), Agricultural Sector Investment Project (ASIP), Market Liberalization, Increased Growth in Income Programme, Food Security and Emergency Preparedness with others had been the key policies that affected agricultural sector most (ISSER 2013).

Economic policies have had important implications for the roles of agriculture in the socioeconomic development of Ghana because of agriculture's dominance of the

economy. The performance of the agricultural sector has generally directed the overall economic performance since independence. Past agricultural policies have ranged from the socialist model of the 1960s to a liberalized market of the 1980s and 1990s, with differing effects on the roles of agriculture. In particular, the externalities generated by agriculture in response to the policy changes have varied across different policy regimes, and trade-offs have emerged among the different roles.

Conclusion

From table 4, it could be seen that the service sector contributes most to the growth process of Ghana (0.472), the industry sector comes second (0.315) and then the agricultural sector (0.248). This shows that agriculture which used to be the country's major sector which contributes most to the GDP growth since pre-independence has currently lost its position. Though it could be seen from table 1 and 3 that agriculture recorded the highest contributor to real GDP figure from 1984 until 2006, also the economic growth has not been constant as showed in figure 1. The economy entered into its peak in terms of growth in 2011 and fell again. Ghanaian economy could be said to fall in the region of take-off stage according to Rostow and sometimes it is referred to as developing country.

Therefore, for Ghana to attain higher GDP growth rates as her key dream, although she has found oil, more of her resources should be channeled into the service sector (0.472). Nevertheless the government should make structural changes in agricultural sector as it also forms the core of growth and development of the economy and employs

the highest labour force. The agricultural sector should also be modernized for further growth and further, government must provide enough subsidies and incentives to motivate farmers whilst ensuring the availability of improved and disease resistant planting materials especially cocoa.

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