

ACHIEVING HIGHER GDP GROWTH RATES IN GHANA: WHICH SECTOR IS TO LEAD?

Patrick Enu¹, E. D. K. Havi², F. Osei-Gyimah³, Prudence Attah-Obeng⁴, C.D.K. Opoku⁵

^{1-3,5} Methodist University College, GHANA, &
⁴ University of Ottawa, CANADA.

¹patrickenu@yahoo.com, ²haviemma@yahoo.com, ³losty2000@yahoo.com,
⁴patta039@uottawa.ca, ⁵cdkopoku@yahoo.com

ABSTRACT

The study is on achieving higher GDP growth in Ghana: which sector is to lead. The main objective of this paper was to examine the contributions of the agricultural, service and industrial sectors to economic growth in Ghana. Time series data from 1966 to 2011 on all the variables of interest was obtained from the World Development Indicators 2012 series. The Ordinary Least Squares estimation technique was used for the analysis. The results showed that a 1% increase in the growth of the agricultural sector will cause GDP growth to increase by 0.452849%. Also, a 1% increase in the growth of the services sector will lead to 0.376308% increase in GDP growth. Finally, 1% increase in the growth of the industrial sector will bring 0.1827% increase in GDP growth. All the explanatory variables are statistically significant at the 5% level of significance. It is concluded that the agriculture 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 to lead the growth in the Ghanaian economy.

Keywords: GDP growth rates, Agricultural sector, Services Sector, Industrial Sector, OLS

INTRODUCTION

Economic growth is one of the macroeconomic indicators that every country seeks to achieve (Faridi, 2012). Growth theorists and other researchers have identified several factors that can help an economy to grow. For instance, classical economists like Adam Smith and David Ricardo argued that international trade is the main engine of economic growth and more gain is attained from specialization. In addition, the Harrod – Domar model suggests that savings rate, capital/output ratio and depreciation rate determine growth. Again, from the Keynesian point of view, more exports generate more income growth through the foreign exchange multiplier in the short run. Also, from the endogenous growth theory, the catalysts of economic growth in a particular country are improvement in productivity through a faster pace of innovation and investment in human capital, government and private institutions and markets which bring up innovation and provide incentives for individuals to be inventive. Skill and knowledge was seen by them as the center of economic growth. The other factors include advancement in technology, human capital, capital accumulation, innovative research and development, economic policies, institutional framework, political factors, socio-cultural factors, geography, and so on. Each of these factors has been identified to affect economic growth either positively, negatively or otherwise depending on the kind of economy (Weil, 2005; Lucas, 1988; Romer, 1990; Grossman & Helpman, 1992; Barro, 1991; Knack & Keefer, 1995; Grier & Tullock, 1989; Landes, 2000; Gallup et al., 1999).

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

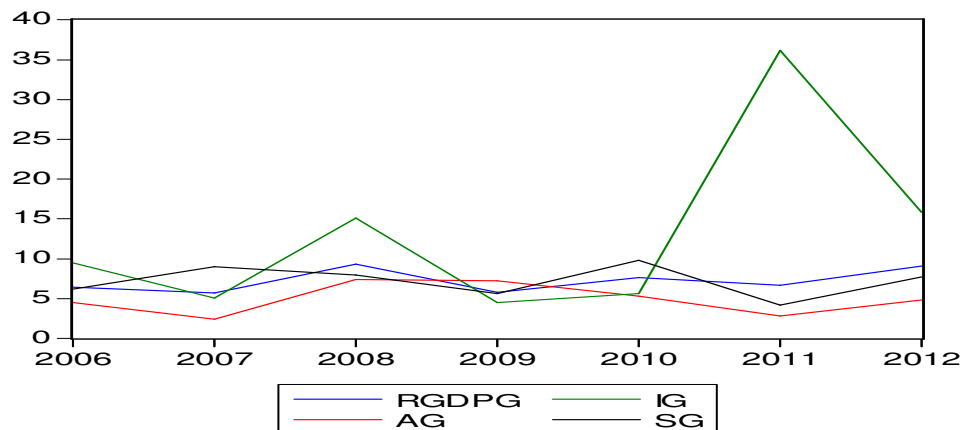
logging), service (transport, storage and communication, wholesale and retail trade, restaurant and hotels, finance, insurance, real estates, and business services, government services, community, social and personal services and producers of private non-profit services) and industry (mining and quarry, 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).

For instance, in Ghana, the policies/ strategies directed toward agriculture to achieve higher expected growth between the period 2003 and 2012 were to: (1) modernize rural technologies for more efficient agricultural production and processing; (2) improve research competence and promote the application and transfer of new technologies, such as biotechnology, to support improved agricultural production; (3) drastically reduce pre-harvest and post-harvest losses in agricultural production, through the development and adaptation of improved technologies, particularly for food storage and preservation; (4) develop and implement suitable irrigation methods and techniques in all agro-ecological zones in the country; and (5) develop new agricultural non-traditional export products and strengthen the production and value addition to existing ones in order to boost the rural economy. Again, the policies/strategies put forward for the industrial sector between 2003 and 2012 were to: (1) establish systems and mechanisms for acquisition, assessment, adaptation, adoption and application of essential technologies for industrial development; (2) encourage R & D activities that develop tools, equipment and machinery for industries; (3) encourage quality assurance in manufacturing; (4) promote S & T activities that would accelerate technology transfer and innovations; (5) create incentives to promote investment in research and development or support by the private sector; (6) facilitate capacity building in all science and technology areas, which hold promise for enhanced national development, including engineering design and industrial technology systems; (7) enhance industrial technology development infrastructure; (8) promote and facilitate recyclable material technologies and application to minimise industrial waste in the environment; and (9) promote knowledge acquisition and development of technologies in the new and emerging sciences of biotechnology, material science, microelectronics and laser technology. Finally, the policies/strategies outlined for the services sector include: (1) positioning Ghana as a major financial hub and centre of excellence in financial transactions in West Africa; (2) supporting and strengthening the banking sector to enable financial institutions, among other things, to go into mortgage banking, term and start-up financing and other activities and services in support of a growing economy; (3) developing new, high-value options in the leisure market; (4) according export status to hotels by granting them the benefits and concessions enjoyed by export manufacturers as tourism is an invisible export; (5) assisting the private sector to be more effective, efficient and competitive in the transport industry; (6) supporting more domestic airlines with opportunities for flights in the sub-region; (7) supporting rapid development of the country's ICT infrastructure including the establishment of a reliable national backbone with capacity to carry high-speed voice, video, data and internet facilitates to all districts of the country; (8) removing barriers to trade and investment; (9) reducing the cost of doing business by removing internal value chain and institutional constraints; and (10) providing an appropriate legal and regulatory framework for promoting a creative economy and for protecting intellectual property rights (The Coordinated Programme of Economic and Social Development Policies, 2010).

To some extent, some of these policies/strategies put in place by governments of Ghana have yielded some benefits to the economy of Ghana. For instance, the agricultural sector, the backbone of the Ghanaian economy, averagely contributes about 40.3% to GDP in Ghana

(The state of the Ghanaian Economy, various issues). The other benefits of this sector includes avenue for job creation (the highest in Ghana, about 40% of the Ghana labour force), foreign exchange through the export of agricultural commodities, raw material for our local industries, government revenue through duties paid on exports of selected agricultural commodities particularly cocoa and so on (The state of the Ghanaian Economy, various issues). For example, in 1996, the GDP growth of the Ghanaian economy was 4.5%. The contribution of the agriculture sector to GDP was 42.7%, the contribution of the service sector to GDP was 26.7% while that of the industrial sector was 30.6%. Again, in 2004, the GDP growth of the Ghanaian economy was 5.8%. While the contribution of the agriculture sector to GDP was 41.5%, the contribution of the service sector to GDP was 27.1% and that of the industrial sector was 31.4%. Furthermore, in 2008, the GDP growth of the Ghanaian economy was 6.6%. In this particular time, the contribution of the agriculture sector to GDP was 36.7%, the service sector's contribution to GDP was 27.7% and finally, that of the industrial sector was 35.7% (The state of the Ghanaian Economy, various issues). The other two sectors, service and industry, also give us a mixture of the following benefits in the Ghanaian economy: employment, export earnings, transfer of technology, mobilization of domestic savings for investment in physical and human capital, communication services-telephone network, email and radio and television transmission to improve the operation of the products and factor markets by facilitating contacts between buyers and sellers, provision of transportation (The state of the Ghanaian Economy, various issues). These benefits also lead to further economic growth (The State of the Ghanaian Economy, various issues; Husain et al, 2011; Obasan et al, 2010).

The trends in the sectorial growth rates of the various sectors of the Ghanaian economy and real GDP growth are illustrated in figure 1 below.



Source: *The State of the Ghanaian Economy; Ghana Statistical Service (various issues)*

Figure 1. Showing the real GDP growth and Sectorial Growth Rates, 2006 – 2012

From figure 1, from 2006 and onwards, the growth in the agricultural sector, the industrial sector, and real GDP growth has been fluctuating.

Even though several policies have been put in place by various governments to strengthen these sectors in order to effectively and efficiently strengthen their capacities to achieve higher growth rates leading to higher GDP growth rates of averagely above 8% ,this has not been achieved. The question then is which sector of the Ghanaian economy is to lead this drive?

Ghana, as a developing country, has limited budget to allocate to the various sectors of the economy. That is, about 50% of her budget is supplemented by donor nations (Budget

Statement, various issues). The little that is available must therefore be used efficiently. This implies that the strategic sectors of the Ghanaian economy should get priority or precedence over the other sectors. According to Hirschman (1958), in accelerating the process of growth, investment should first be made in the key sectors of the economy (Gillis et al., 1992). In addition, there are arguments that currently, the industrial and service sectors grow faster than the agricultural sector (The Coordinated Programme of Economic and Social Development Policies, 2010-2016). Is this assertion true? In addition, according to Kaldor (1966), industrial sector is the engine of growth. Is that the case for Ghana? To be able to resolve these issues, our empirical study is needed, hence, this paper.

The main objective of this paper is to examine the contributions of the agricultural, service and industrial sectors to economic growth in Ghana using an econometric technique from the period 1966 to 2011.

LITERATURE REVIEW

Modern Theories of Development

This section of this paper discusses some modern theories of development. The discussion includes the theories of Big Push, Balanced Growth, Unbalanced Growth and Stages of Growth.

Stages of Growth Theory

This theory was propounded by Walt Whitman Rostow. This theory claims that economic modernization occurs in five (5) basic stages through which all societies pass. These stages as identified by Rostow include:

- i. Traditional society
- ii. Transitional stage
- iii. Take-off stage
- iv. Drive to maturity
- v. Stage of high mass consumption

The characteristics under each of the stages as propagated by Rostow are outlined below.

Traditional Society

1. More than 75% of the population is engaged in food production.
2. Political power is in the hands of landowners or of a central authority supported by the army and the civil servants.

Transitional Stage

1. There are radical changes in the non-industrial sectors.
2. Export of raw materials gains momentum.
3. A new class of businessmen emerges.
4. The idea of economic progress coming from outside spreads through the elite.

Take-off Stage

1. There is a sharp increase in the rate of investment in the per capita output.
2. There are radical changes in the techniques of production.
3. Expansion takes place in a small group of leading sectors at first.

4. On the social side, there is the domination of the modern section of society over the traditional one.

Drive to Maturity

1. Growth spreads from the leading sector to the other sectors.
2. There is a broader application of modern technology followed by necessary changes in the society at large.

Stage of High Mass Consumption

1. It is attained after reaching a certain level of national income.
2. In formulating an economic policy, priority is given to increased private consumption.

According to Rostow, the critical phase of development is the take off stage. At this stage, for a sustained growth to be realized, net investment rates have to increase from 5% to 10% of national product and also political, social and institutional framework has to be built. In addition, for a continuous flow of financial resources, the financial resources must be accumulated internally by higher saving rates and if possible income distribution favoring classes and strata which are willing and able to use capital more productively than others should be encouraged.

This model is criticized on the basis that the model does little to explain why some societies go ahead on this ladder and others do not. Again, its value for forecasting the results of development activities is limited.

Theory of Big Push

The Big Push theory was propagated by Paul Rosenstein-Rodan (1948). The center piece of his theory is that large scale industrialization and infrastructural development is the engine of growth and development of an economy. What he meant was that more investment is needed in many places of an economy at one time but this cannot be left to the market due to market failures (externalities). According to Paul Rosenstein-Rodan, the big push needs to come from the state to escape the low-level of equilibrium trap (Gillis et al., 1992).

Theory of Balanced Growth

This theory of development emanated from Nurkse in 1953. The theory of balanced growth advocates the simultaneous growth of all sectors of the economy. The balanced growth hypothesis seeks to accelerate the process of growth through simultaneous investment across all sectors of the economy. The balanced growth strategy is a long period strategy of growth. According to Nurkse (1958), exports cannot be depended upon as the source of growth. He rather stated that the key to development is massive injection of new technology, machines and production processes leading to domestic industrialisation. Nurkse ended his argument by concluding that large scale industrial investment would generate large scale demand, hence, balanced growth (Gillis et al., 1992). The principal limiting factor in this theory is the size of the market (Gillis et al., 1992).

Unbalanced Growth Theory

This theory of growth was propounded by Hirschman (1958). This model is used as a strategy of development by the underdeveloped countries. The unbalanced hypothesis seeks to accelerate the process of growth through imbalances in the economy. The unbalanced growth is a short term strategy for economic growth. The theory claims that there is the need for investment in strategic sectors of an economy rather than all the sectors simultaneously. That is, the theory of unbalanced growth focuses on the growth of some key sectors of the

economy to begin with. Consequently, the other sectors of the economy would automatically develop themselves through what is known as “linkage effect”. This theory explains two main kinds of linkages. They are the backward linkages where growth of a set of industries stimulates the growth of those which supply the needed raw materials and the forward linkages which refers to the growth of certain industries owing to the initial growth of those which supply raw materials. For instance, expansion of the steel industry will encourage industries making machines, tools and others using steel as their basic input to grow (Gillis et al., 1992).

From the Big push theory, investment in infrastructural development is the key to economic expansion. This theory performs insufficiently in under-developing countries since they lack savings and Ghana is no exception. Also, according to Rostow and Prof. Hirschman, for a sustained economic expansion and progression, a key sector needs to be identified before further growth and development can take place. The question is, which sector is to lead in the case of Ghana?, the essence of this paper.

EMPIRICAL REVIEW

Dutt and Lee (1993) regressed the growth rate of GDP on share of services in employment. They found negative and significant coefficient suggesting that relative increase of the services’ share in employment is associated with a decline in the output growth rate. Also Kaldor (1996) found positive and statistically significant correlation between the rate of growth of the manufacturing sector and rate of growth of output.

Wilber (2002) examined the relationship between service sector expansion and growth rate of output using panel data of 25 OECD countries over the period from 1960 to 1994. He found that causality runs from services to growth. Also, the relative expansion of the service sector as a whole was associated with a reduction in the rate of growth of total output. He did disaggregated analysis for the service sector and found that not all services retard economic growth. Producer services have positive impact on growth while consumer and government services have a negative impact.

Singh A. et al (2005) investigated on the topic ‘Will Service be the new engine of Economic Growth in India?’ Six different kinds of simple linear growth equations were estimated by them. They found that all the equations indicated high correlation between sectoral and overall growth. Unfortunately, only four (4) of those equations relating to manufacturing and services respectively satisfactorily passed the various diagnostic tests. More importantly, the estimated beta coefficient for manufacturing was less than one (1) as Kaldor had suggested and those for services were however greater than one (1). They also found that agricultural rates were highly correlated with GDP growth, but the correlation was not as high as that of manufacturing.

Mikeal L. et al (2007) studied the long run relationship between sectors’ share and economic growth using panel data of Schengen region from the period 1970 to 2004. Their main objective was to analyse how sectors’ shares are related to economic growth. They employed the product function, did dynamic econometric modeling, and used cointegration and error correction model and also conducted Granger causality test in panel setting. Their dependent variable was GDP capita growth rate and the independent variables were agriculture share as a percentage of GDP; industry share as a percentage of GDP and service share as a percentage of GDP. After their analysis of the panel data, they found out that shocks in industry sector share cause turbulence in sector share relationships which slowly correct to equilibrium. Their results of GC – tests suggested that unidirectional causality runs from the growth of GDP per capita to agriculture share growth, but a two – way causality runs

between industry share growth and growth rate of GDP per capita. The relationship between services share growth and growth rate of GDP per capita was also bi-directional. They concluded that feedback impacts were found between sector shares and the growth rate of GDP per capita. Also the link between GDP per capita growth rate, service, and agriculture shares are complex but industry sector is still the engine of economic growth.

Obasan et al (2010) investigated on the role of industrial sector in the economic development of Nigeria. The key issue in their paper was to examine the effect of industrial sector on economic development in Nigeria. The model adopted was the endogenous growth model and their method of estimation was Ordinary Least Squares. The dependent variable of their specified model was real gross domestic product and the independent variable plus other exogenous variables were industrial proxy by manufacturing output, exchange rate, inflation rate, interest rate and government expenditure. Their results showed that there is positive relationship between the endogenous variable and all the exogenous variables except for exchange rate and government expenditure. The study also indicated that in countries where industrialization is given a primary place, it acts as a catalyst to economic development process. They suggested that there is the need for cooperation between the manufacturing sector and research institutes with a view to making R&D activities more demand driven. Also, there is the need for Nigeria to engineer infrastructure in order to facilitate the local production of machinery and equipment to strengthen the industrial development and so on.

Hussain et al (2011) studied the relationship between agriculture and GDP growth rates in Pakistan using an econometric analysis for the period 1961 – 2007. The main objective of the study was to ascertain the role of agriculture in the process of economic growth in Pakistan. A linear growth equation was specified by them and they employed the Ordinary least squares estimation techniques in their analysis. The dependent variable was GDP growth rate measured as GDP growth rate (%) at factor cost in Pakistan. The independent variable was agriculture growth rate measured as agriculture growth rate (%) at factor cost in Pakistan. The key finding was that agriculture growth rate and GDP growth rate positively correlated. A one percent increase in the agriculture rate brings about 0.34 percent increase in GDP growth rate. They concluded that the government of Pakistan should make structural changes in the agricultural sector so as to ensure that agriculture leads overall growth in the Pakistan.

From the above, we can conclude that the various sectors (agriculture, industry and service) of an economy influence economic growth and development in one way or the other. The question then is: What is the case of Ghana?

RESEARCH METHODOLOGY

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

$$GDPG_t = \beta_0 + \beta_1 AG_t + \beta_2 SG_t + \beta_3 IG_t + \varepsilon_t$$

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 $AG_t = SG_t = 0$)

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)

Expected Results

The following are the expected results

$$\frac{\partial \text{GDPG}}{\partial \text{AG}} > 0; \frac{\partial \text{GDPG}}{\partial \text{SG}} > 0; \frac{\partial \text{GDPG}}{\partial \text{IG}} > 0$$

The expected effect of growth of agriculture, service, and growth of industrial sectors are assumed to be positive (Johnston, 1970; Hussain A. et al, 2011; Obasan Kehinde A. et al 2010; Wilber, 2002).

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

Estimation Technique Used

The method of data estimation technique used is Ordinary Least Squares. 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.

Data Sources

The study is based on secondary source of data. It covers the time series period from 1984 to 2010. The major sources of data are Bank of Ghana, Budget statement, State of the Ghanaian Economy and Ghana statistical Service (various issues).

Statistical Package Used

The statistical package used is Gretle.

DISCUSSION AND FINDINGS

Table 1. Model: OLS Estimates Using the 46 Observations 1966-2011 Dependent Variable: GDPG

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-statistic</i>	<i>t-critical</i>	<i>p-value</i>
<i>Const</i>	0.0106	0.139335	0.0761	2.02	0.93972
<i>AG</i>	0.453115	0.0194191	23.3335	2.02	<0.00001
<i>IG</i>	0.182838	0.0119872	15.2527	2.02	<0.00001
<i>SG</i>	0.376697	0.0202689	18.5849	2.02	<0.00001

Mean of dependent variable = 3.39641; Standard deviation of dep. var. = 4.68799; Sum of squared residuals = 22.8086; Standard error of residuals = 0.736927; Unadjusted R^2 = 0.976937; Adjusted R^2 = 0.97529; F-statistic (3, 42) = 593.038 (p-value < 0.00001); Durbin-Watson statistic = 1.81546.

The original OLS results did not give us any indication of the presence of multicollinearity judging from the t-ratios and R^2 . However, we decided to do another test to confirm the

above results or otherwise. We therefore conducted the Auxiliary regression. The results are as presented in table 2.

Table 2. Test for the Presence of Multicollinearity Using Auxiliary Regression

Function	R ² of the auxiliary regression	R ² of the original regression	Conclusion
AG = f(IG,SG)	0.0496609	0.976937	No multicollinearity
IG = f(AG, SG)	0.123404	0.976937	No multicollinearity
SG = f(AG,IG)	0.141938	0.976937	No multicollinearity

Here, we compare the two R² values. Using Klein’s Rule of Thumb, if the R² 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 R² is greater than the R² of the auxiliary regression.

Table 3. Test for the Presence of Autocorrelation Using DW test

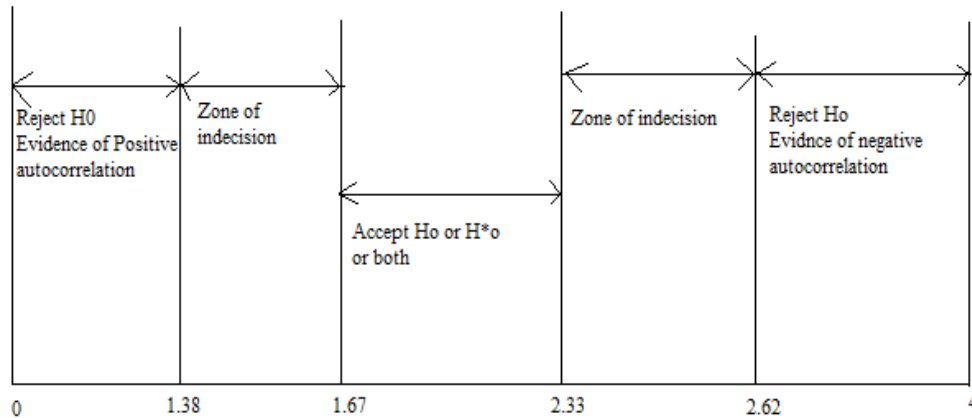
Hypotheses:

H₀ : no autocorrelation

H₁: autocorrelation

DW Test Statistic:

$$d^* = \frac{\sum_{t=2}^N (e_t - e_{t-1})^2}{\sum_{t=1}^N e_t^2} = 1.81546 \text{ Decision rule (n = 46, k = 3; } d_L = 1.38, d_u = 1.67):$$



Autocorrelation is not present in this regression. This is because the DW statistic of 1.81546 lies within 1.67 and 2.33 which indicates the acceptance of H₀.

According to the park test, if a statistically significant relationship exists between $\text{Ln}e_t^2$ and $\text{Ln}X_t$ then, the null hypothesis of no heteroscedasticity can be rejected in which we will have to take some remedial measures.

Table 4. Test for the presence of Heteroscedasticity using the Park Test

<i>Function</i>	<i>t-ratio</i>	<i>Critical value of t</i>	<i>Status</i>	<i>Conclusion</i>
$Lne_t^2 = f(\ln AG)$	-1.5058	2.04	Statistically insignificant	No heteroscedasticity
$Lne_t^2 = f(\ln IG)$	1.2647	2.04	Statistically insignificant	No heteroscedasticity
$Lne_t^2 = f(\ln SG)$	2.0229	2.04	Statistically insignificant	No heteroscedasticity

Heteroscedasticity is not present in this regression.

From the above, it could be seen that this regression results is not affected by the problems of multicollinearity (see table 2), autocorrelation (see table 3) and heteroscedasticity (see table 4). In addition, the regression result is not nonsense that is not spurious since DW (1.81546) > R² (0.97529). Therefore, meaningful analysis and conclusions can be drawn from it.

The value of the R² is 0.97529. Statistically, it has a very good fit. Economically, about 98% of the total variation in GDPG is explained by the independent variables. The remaining is 2.471% which is attributed to other factors. Overall, the regression equation is statistically significant since F-calculated > F- critical.

Theoretically, we expected a positive relationship between agricultural output and economic growth. This result confirms it. Specifically, a 1% increase in the AG will cause GDPG to increase by 0.453115%. It is statistically significant at the 5% significance level since the t-ratio is more than the critical value of t (23.3335 > 2.02).

Also, we expected the relationship between GDPG and IG to be positive. The result confirms it. That is, a 1% increase in IG will lead to a 0.182838% increase in GDPG. It is statistically significant since the t-ratio is more than the critical value of t (15.2527 > 2.02).

Finally, there is a positive relationship between GDPG and SG. 1% increase in SG will cause GDPG to increase by 0.376697%. It is statistically significant at the 5% level of significance since the t-ratio is more than the critical value of t (18.5849 > 2.02).

From the above analyses, it can be inferred that all the three sectors are key to economic growth in Ghana. However, the most pressing one is the agricultural sector, followed by the services sector and then, by the industrial sector without standardization of the data.

To determine which sector should lead the growth process of Ghana, the result must be standardized. The coefficient of the standardized variables will show which sector to lead. The result is shown below in table 5.

Table 5. Model 1: OLS Estimates Using the 46 Observations 1966-2011 Dependent Variable: SGDPG

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-statistic</i>	<i>p-value</i>	
Const	0.0128223	0.135751	0.0945	0.92520	
SAG	0.452849	0.0194529	23.2793	<0.00001	***
SIG	0.18279	0.0119899	15.2453	<0.00001	***
SSG	0.376308	0.0195034	19.2945	<0.00001	***

Mean of dependent variable = 3.32257; Standard deviation of dep. var. = 4.83565; Sum of squared residuals = 22.8031; Standard error of residuals = 0.736839; Unadjusted R² =

0.978329; Adjusted $R^2 = 0.976781$; F-statistic (3, 42) = 632.035 (p-value < 0.00001); Durbin-Watson statistic = 1.8157.

CONCLUSION AND RECOMMENDATIONS

From table 5, it could be seen that the agricultural sector contributes most to the growth process of Ghana (0.452849), the services sector comes second (0.376308) and then the industrial sector (0.18279). Based, on the rule of thumb, all the explanatory variables are statistically significant. 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 agricultural sector (0.452849). This confirmed the finding of Hussian et al., (2011) in Pakistan which also suggested that government should make structural changes in agricultural sector as it is the engine of growth. The agricultural sector should also be modernized for further growth.

REFERENCES

- Barro, R. J. (1991). Economic Growth in a Cross-Section of Countries. *Quarterly Journal of Economics*. 106: 407 – 444.
- Duffuor, K. (2009). *The Budget Statement and Economy Policy for the Financial year*. Accra: The Ghana Publishing Company Limited Assembly Press..
- Utt, A. K. & K. Y. Lee (1993). The Service Sector and Economic growth: Some Cross – Sectoral Evidence. *International Review of Applied Economics*, 7: 311 – 329.
- Faridi, M. Z. (2012). Contribution of Agricultural Exports to Economic Growth in Pakistan. *Pakistan Journal of Commerce. Social. Science*, 6(1), 133 – 146.
- Gillis et. al., (1992). *Economics of Development*. New York : W.W. Norton and Company,
- Gallup, et. al., (1999). *Geography and Economic Development*. CID working paper 1.
- Grier, K. B. & Tullock, G. (1989). An Empirical Analysis of Cross-National Economic Growth. *Journal of Monetary Economics*; 24: 51 – 77.
- Grossman, G. M & Helpman, E. (1992). *Innovation and Growth in the Global Economy* (2nd Edition.) Cambridge, Mass: and London England: MIT Press,
- John Evans Atta Mills. (2010). *The Coordinated Programme of Economic and Social Development Policies, 2010-2016: An Agenda for Shared Growth and Accelerated Development for a Better Ghana*. Accra: Presented to the 5th Parliament of the 4th Republic.
- Husain, A. & Khan, A. Q. (2011). *Relationship between agriculture and GDP growth rates in Pakistan: An Econometric Analysis (1961 – 2007)*. *Academic Research International*, 1(2), 322-326.
- Institute of Statistical and Economic Research. (2008). *The State of the Ghanaian Economy*. Accra: Sundel Services,
- Johnston, B. F. (1970). Agriculture and Structural Transformation in Developing countries: a survey of research. *J. Econ. Literature* 8: 369 – 404.
- Kaldor, N. (1966). *Causes of Slow Rate of Growth in UK*. Cambridge University Press.
- Killick, T. (2010). *Development in Action: A study of economic policies in Ghana*. London and New York: Routledge.

- Knack, S. & Keefer, P. (1995). Institutions and Economic Performance: Cross-Country Tests using Alternative Institutional Measures. *Economics and Politics*: 7: 207 – 227.
- Linden, M. & Mahmood, T. (2007). *Long run relationships between sector shares and economic growth – A Panel Data Analysis of the Schengen Region*. *Keskustelualoitteita*, 50, 1-36.
- Lucas, R. E. Jr. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics*, 22(1): 3 – 42.
- Landes, D. (200). *Culture Makes almost all the Difference in Culture matters* (eds.L).
- Obasan Kehinde A. & Adediran olanrewaju A. (2010). The Role of Industrial Sector in the Economic Development of Nigeria. *Journal of Management and Society*, 1(2).
- Romer, P. (1990). Human Capital and Growth: Theory and Evidence. *Carnegie – Rochester Conference series on public policy*, 32(199): 251 – 286.
- Sukti, D. ILO & Singh, A. (2005). *Will Services be the new Engine of Economic Growth in India?* Centre for Business and Research, University of Cambridge. Working paper No. 310.
- Wiber, S. (2002). *Are Services Bad for Growth?. Evidence from a Panel of OECD Economies*. Unpublished PhD. Thesis. Georgetown University Washington DC.