

RETHINKING THE DEVELOPMENT OF GHANA: THE ANSWER IS HERE

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Abstract: Ghana is struggling to become a middle income economy even with discovery of oil and gas in commercial quantity. The paper presented an alternative approach on how to rethink and develop Ghana using mix approach. In this paper, the researcher attempt to compare Ghana's GNI to her cohort especially China in 1963 and 2016 and how China developed with greater GNI than Ghana. We also examine the relationship between GDP growth and other factors such as Inflation, Foreign Direct Investment (FDI), Import and Export in Ghana. The researcher found FDI and Inflation to have negative relationship on GDP but Import and export have positive impact on GDP. We concluded that, Ghana must learn from developed world and tap from the experience of Chinese, should desist from exporting raw product and move from import economy to an export one like China in other to improve our balance of trade.

Key words: Growth Domestic Product, Inflation, Foreign Direct Investment, Export, Import, Qualitative analysis, Regression, Unit Root Test, Autocorrelation, Heteroscedasticity.

JEL Classification: N10

Introduction

Ghana is struggling to become a middle income economy based on the years of sustained economic development, and has recently discovered oil and gas in commercialization quantity and hoping to attained the middle income status by 2020 and to continue to become a developed country one day in the world. Ghana is currently lower-middle-income country like China and India. According to the World Bank (table 1) GNI per capita (Atlas method), in Ghana in 1963 was \$ 200 which was higher than China, Korea Republic, and Thailand and \$50 higher less than Malaysia. From the table 1 you can observe that Ghana was overtaken by her cohorts in the recent years, in 2016 the per capita income of a Korean was \$ 27,600 over \$ 26000 richer than a Ghanaian, and a Chinese was also close to was over \$ 6500 richer than a Ghanaian counter parts in 2016. Surprisingly Thailand that had lower GNI per capita than Ghana in 1963 are doing very well than Ghana now, for example a Ghanaian was \$ 80 richer than Thai in 1963 but now a Malaysian and a Thai were \$ 8480 and \$ 4260 respectively richer than a Ghanaian in 2016. The questions the researcher is asking now is that what went wrong with the Economy of Ghana? China has done it through introduction of market mechanisms, modern technology and management from the West, better governance (government has done an extraordinary job in managing a difficult transition from an isolated communist nation, to a largely open, economic driven nation without falling into turmoil), extremely motivating competitive workforce (human capital), culture of saving (every Chinese saves 25% personal income), rich Confucianism culture that teaches the citizen to be loyal, motivated, responsible, and educated, to enhance sense of commitment, organizational identity, and loyalty to various institutions of the country, YuKong Zhao (2014). The author (YuKong Zhao)

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revealed and summarized the secrets of China's development success to be built upon an inseparable three-legged stool: Pro-development government policies, learning from the West and great cultural values that help create highly motivated and competitive human capital. According a publication by Massachusetts Institute of Technology (<https://atlas.media.mit.edu/en/profile/country/chn/>) Chinese consumed most of the products made in China, and they are largest export economy in the world, she exported \$2.06 Trillion and imported \$1.32 Trillion, resulting in a positive trade balance of \$736 Billion.

Table 1.

GNI per capita of countries from 1963 and 2017

| Name of Country | GNI per capita in 1963 (\$) | GNI per capita in 2016 (\$) |
|-----------------|-----------------------------|-----------------------------|
| China | 80 | 8250 |
| Ghana | 200 | 1,380 |
| Korea Republic | 120 | 27,600 |
| Thailand | 120 | 5,640 |
| Malaysia | 250 | 9,860 |

Source: <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD>

As Ghana switches to an established middle income country, we expect the investment climate to continue to improve, but the government will regulate the rate at which those improvements take place. According to a researcher at ISSER (Dr. Nketiah-Amponsah) and I quote "Ghana, at a per capita income of about \$1,820, is an MIC (Middle Income Country), but this classification masks wide gaps in infrastructural and human development," this research was published by Bi-Annual Newsletter of ISSER Issue: 2015 Vol. 3. According to the World Bank, Ghana's economy is doing well, that the economy expanded for the third successive quarter in March 2017 to 6.6% up from 4.4% the previous year (2016). The industry sector recorded the highest growth of 11.5%, compared to 1.8% in 2016, with significant contributions of this from mining and petroleum. The agriculture sector grew by 7.6%, up from 5% the previous year, driven by good performances in the crops, fisheries, and cocoa sub-sectors. However, growth in the services sector slowed to 3.7% from 6.6%, due to slower growth in information, communication, and finance. Non-oil growth slowed to 3.9% from 6.3% in the same period of 2016. Another question that come to mind is does all successful governments implement the plan(s) of Ghana? Ghanaian governments from Nkrumah up to today have made about ten attempts to plan Ghana's development. However, only four of such attempts deserve mentioning Kwabena Osei-Bonsu (2012). According to him, those that are justified to be mentioned are: Guggisberg's Colonial Infrastructure Plan of 1919 – 1926, Dr. Nkrumah's 7 Year Development Plan of 1963 – 1970, Rawlings's Economic Recovery Program 1984 – 1990 and Ghana Vision 2020 (1996 – 2020). Other developmental plans includes president Kufour's plan between 2001 and 2008 which include The Accelerated Agricultural Growth and Development Strategy (AAGDS, 2001) Food and Agriculture Sector Development Policy (FASDEP I & II), National Aquaculture Development Plan, CAADP, etc and Professor Mills's Ghana Shared Growth and Development Agenda (GSGDA) (2010 – 2013). Many of these Developmental plans were not achieved even half way; the situation in Ghana could be describe as policy paralysis on part of all successive governments.

The development of country's GDP has always been treated as existing problem studied by many academicians, policy makers and researchers. Unpredictability growth of GDP per capita within a state will lead to higher incidence of poverty as well as hinder the progress in health,

education, crime control and finally the economic growth. According to World Bank (<http://blogs.worldbank.org/endpovertyinsouthasia/can-political-stability-hurt-economic-growth>) country that has a stable and increasing GDP growth, citizens always enjoy social and political stable economy which leads to growth, and unsound political location may lessen investment and the speed of economic development. The question the researcher is asking is that, Ghana is stable and has good democratic election and political stable environment but with poor economic development and hence low GDP, what is the problem?

The figure 1 shows the trend of GDP in Ghana from 1993 to 2016. It can be seen that the country experienced negative growth of 0.841 from 1993 to 1994 (election period), and started to grow again until 1999 to 2000 when it declined by the difference of 4.47. The economy of Ghana started to appreciate again until 2008 to 2009 when it dropped from 28.528 to 25.59. The country experienced arithmetic growth from 2010 to until 2013 with a little drop in election year 2012. Ghana experienced a drop again from 2014 and 2015 and thereafter the country started to appreciate again country from 2015 and started to appreciate to 2016. The highest GDP growth in the country (Ghana) was 47.806% in 2013.

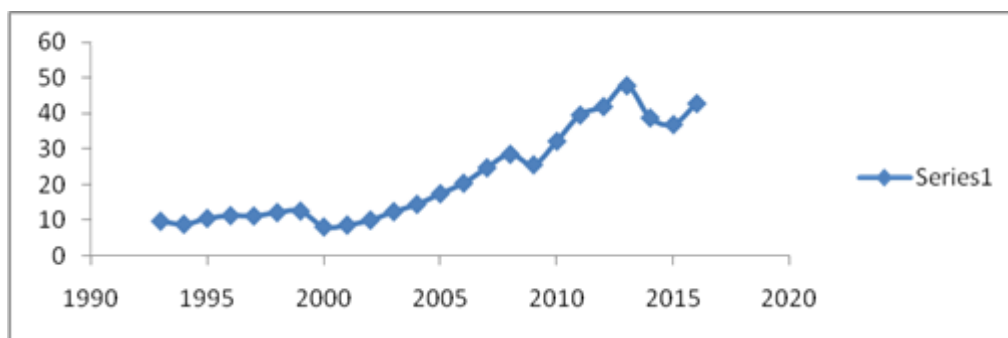


Fig. 1 GDP growth of Ghana

The researcher did empirical analysis on elections in Ghana based on the GDP and the finding above (figure 1) indicated that elections had disturbing recurring effect on the GDP of Ghana, during and after election periods from 1996 to 1997 the GDP shrieked by 0.103, 2000 to 2001 by 3.929, 2008 to 2009 by 2.938 and dropped drastically from 2013 to 2014 by 9.028. To sum it all Ghana lost averagely 4 point of her GDP during and after elections periods in Ghana.

Objectives of the Study

This paper examines the relationship between GDP growth and the factors such as Inflation, Foreign Direct Investment (FDI), Import and Export in Ghana. Through these four variables, researcher would like to investigate which of these variables is relevant in predicting GDP (growth) of Ghana today, and also compared GNI of Ghana and other countries in 1963 and 2016.

Literature Review

Foreign Direct Investment (FDI)

Many researchers observed the impact of FDI on economic growth of a country including Nuzhat Falki (2009) studied the Impact of FDI on Economic Growth of Pakistan and used data from the Handbook of Pakistan Economy-2005 version and World Bank data such as domestic capital,

foreign owned capital and labour force and concluded that that FDI has adverse relationship between GDP and FDI inflows in Pakistan. Similarly Pardeep Agarwal (2000) also found relationship of FDI on GDP growth is found to be negative prior to 1980, mildly positive for early eighties and strongly positive over the late eighties and nineties in South Asia. A research by Jyun-Yi, Wu and Hsu Chin-Chiang (2008) and Raja Nurul Aini Raja Aziz & Amalina Azmi (2017) also found FDI has a significant factor and positive relationship towards GDP growth in Malaysia. Researchers Johnson (2006), Lensink and Morrissey (2006), Li and Liu (2005), opined that FDI inflows have a positive impact on the economy growth. Alternatively FDI can have indirect impact on the whole productivity in the economy (de Vita and Kyaw, 2009) but have a direct impact in the sectors in which these funds were allocated. Anokye M. Adam & George Tweneboah (2009) apply multivariate co-integration analysis and Vector Error Correction Model (VECM) to date on market capitalization as a percentage of GDP, Ghana cedi-Dollar exchange rate and Net FDI inflow quarterly data from 1991 to 2006 and summarized that FDI has significant impact on the development of stock market in Ghana. In addition studies by Kogid et al. (2010), Karim and Yusop (2009); Duasa (2007); Lim (2001); found that there is no causal relation between FDI and GDP growth.

Inflation

Inflation can be defined as an increase in money supply or escalation in overall price level of goods and services. The buying power reduces when price level increases. In Ghana from the regime of Jerry John Rawlings in 1993 to John Dramani Mahama in 2016 the nation has achieved single digit inflation only in the era of Professor John Evans Atta Mills where we had 9.459, 6.868, 8.372, and 8.124 in the year 2009, 2010, 2011 and 2012 respectively. Inflation has not ever done well in any country however, when there is likely inflation, governments around the globe take suitable steps to curtail the ill effects of inflation to a certain level. This was evaluated by a researcher Nell (2000) that single digit inflation was favourable to economic growth, on the other hand double digit inflation led towards sluggish growth. And another researcher Balac (2008) stressed that inflation is the major cause of wealth loss in nations.

Imports and Export

Ghana export less than she imports which worsens its balance of payment. Ghana imports products such as vehicles of all types, Agriculture implements and machinery, pharmaceutical products, rice, mobile phone just to mention few from China, Thailand, United States, United Kingdom, United Arab Emirates and Germany. The trend of import is always fluctuating but higher than export in many years. Ghana mostly exports unprocessed products such as gold, diamond, cocoa and oil. This approach of exporting without adding value to it always degrades country's position of balance of trade.

Yuhong Li et. al. (2010) researched on the Relationship between foreign trade and the GDP Growth of East China and used co-integration analyses with the data of import, export and economic, and the outcomes recommends that growth of import greatly promoted economic growth of China, whereas that of export performed an opposite one.

The interconnection of Exports, Imports and Economic growth was investigated in Saudi Arabia by Hussain M and Saaed A.(2014) using annual data for the period 1990- 2011 and Granger Causality and Cointegration test were employed in the analysis. At 5% level of significance both Trace and Maximum Eigenvalue showed cointegration pointing to the fact that the variables have a long-run relationship and economic growth was identified to Granger Cause import. There was a

unidirectional causality prevailing between export and import. But the result of the causation between Exports and economic growth and imports and economic growth was statistically insignificant.

The effect of Election on Economic Development

The development of a nation depends on its Gross Domestic Product (GDP) or Gross National Income (GNI). The World Bank defines GNI as the summation of value added by all local resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from resident abroad. New growth philosophers (Aghion & Howitt 1992; Chauvet, L., & Collier, P. 2009) linked the technological change to the production of knowledge. The new growth theory stresses that economic growth grades from increasing returns to the use of knowledge rather than labour and capital. The theory contends that the higher rate of returns as expected in the Solow model is greatly eroded by lower levels of complementary investments in human capital (education), infrastructure, or research and development (R&D). What is the current economic development of infrastructure in Ghana compared to its cohorts in the development brackets?

The finding of (Chauvet, L., & Collier, P. 2009) suggests that the route to policy improvement is through accountability of governments to their citizens through proper elections but does it lead to development in developing nations? The researchers also advise that more regular elections are essentially more effective in improving but do not improve governance in these low income countries. The researcher's emphasis is on how one aspect of democracy, four year tenure regular elections of leaders, affects economic growth in Ghana. The research would contribute to the literature by using a mixed approach research method. Essayists have recently shown that democracy certainly affects the level of growth, especially when transition to democracy is consolidated (Papaioannou and Siourounis 2008a, and Persson and Tabellini 2009). Acemoglu et al. (2014) also used estimations lagged GDP in the estimations and using an instrumental variable (IV) strategy and concluded that there positive and statistically significant effect of democracy on economic growth. Democratic Elections remains statistically significant and can shrink the country's GDP by 2-3% (Persson, T., & Tabellini, G. 2004) and in addition stated without controlling for other determinants of welfare spending, legislatures elected under proportional electoral systems spend 8% of GDP much more in social security and welfare compared to majoritarian elections. In Ghana elections are held in every four year and it comes with heavy expenditure. The Minority leader, Osei Kyei Mensah Bonsu disclosed in the parliament of Ghana in December 2015 that election cost growing astronomically, in 2008; the cost of election budget presented to the house was approximately \$ 138 million, \$ 267 million in 2012 and \$377, 892030.85 in 2016.

Methodology

Data and Variable Descriptions

The data used for this research was obtained from International Monetary Fund (IMF) website. The researcher adopt mixed approach (combination of qualitative and quantitative) to

since the mixed methods approach uses both forms alongside each other, the overall strength of a study is greater than either qualitative or quantitative research (Creswell & Zhang, 2009; Tumaku et.al 2015). The researcher used the Ordinary Least Square Method (OLS) and Augmented Dickey Fuller (ADF) for the analysis of time series data from year 1993 to 2016 in Ghana. The democracy and election in Ghana was analyzed qualitatively and compared countries with the same GNI from 1963 to 2016. Quantitatively, the researcher used regression analysis to draw conclusion on how import, export, FDI and Inflation influence GDP in Ghana.

The dependent variable GDP (y) is the real GDP measured on annual percentage growth rate. While the independent variables are the variable Inflation or CPI (X1) measured as annual percentage. The variable X4 is our measure for Foreign Direct Investment measured as percentage of GDP. Variable X3 represents the Volume of Imports of goods (Percent change).

Percent change of volume of imports of goods refers to the aggregate change in the quantities of imports of goods whose characteristics are unchanged. The goods and their prices are held constant; therefore changes are due to changes in quantities only and last but not the least X2 represents Volume of exports of goods (Percent change). Percent change of volume of exports of goods refers to the aggregate change in the quantities of exports of goods whose characteristics are unchanged. The goods and their prices are held constant; therefore changes are due to changes in quantities only.

Ordinary Least Square Method (OLS) was used to estimate multiple Regression analysis of GDP growth in Ghana. Unit Root test known as Augmented Dickey Fuller (ADF) was applied to test the stationarity of the variables. While for testing the model, several tests were conducted such as Breusch-Godfrey Test and White Heteroscedasticity Test to examine whether the regression model satisfy the typical Linear Regression Model assumption or not. The supposed techniques let us to test the availability of the assumption of multicollinearity, autocorrelation and heteroscedasticity in the model. Through this research the researcher would managed to measure on how the independent variables such as Inflation, FDI, Import and Export can influence GDP of Ghana.

Model specification

The econometric model was estimated as:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \varepsilon_t \dots\dots\dots \text{eqn(1)}$$

where t (t = 1,2,3, ... 24) represent time series data and $\beta_1, \beta_2, \beta_3, \beta_4$ are the coefficient of the independent variables (Inflation, Import, Export, and FDI represented be X_1, X_2, X_3 and X_4) to be estimated and ε is the random error term or disturbance error term that represent the missing variables or factors that are not mentioned in the model.

Hypothesis

The researcher's hypotheses are as follows,

- H₁:** There is a relationship between Inflation and GDP in Ghana
- H₂:** There is a relationship between Import and GDP in Ghana
- H₃:** There is a relationship between Export and GDP in Ghana
- H₄:** There is a relationship between Foreign Direct Investment (FDI) and GDP in Ghana

Method of Analysis (Regression)

Regression analysis

The main purpose of employing regression analysis especially ordinary Least Square (OLS) is to be able to explain the causality between dependent variable and independent variables.

Augmented dickey-fuller test

As expectation for spurious regression, Unit Root Test and Cointegration were carried out to identify the presence of unit root in the series. For mean and variance are not constant, the variables are considered to have unit root or non-stationary. In order to check for it Augmented Dickey Fuller (ADF) were performed. The null and the alternative hypothesis of the Augmented Dickey-Fuller t-test are;

H₀: θ = 0 (i.e. the data needs to be differenced to make it stationary)

H₁: θ < 0 (i.e. the data is trend stationary and needs to be analyzed by means of using a time trend in the regression model instead of differencing the data)

Results and discussion

From table 1 below you can observe that R squared is .7522 or 75.22% and Adjusted R square is 0.700 Or70%. The R-square of 75.22% indicated that the model is good therefore GDP can be influenced by other variables such as inflation import export and Foreign Direct investment (FDI). The R-square also means that the regression line is fitted to the data strongly.

Table 1

| | |
|---------------------------|-----------------|
| R-squared | 0.752219 |
| Adjusted R-squared | 0.700055 |

The regression model for eqn (1) above can be estimated from the table 2 below as:

$$Y = 10.2057 - 0.02761X1 + 0.0941X2 + 3.2349X3 - 0.1779X4 \dots\dots\dots \text{eqn (2)}$$

The regression equation shows that import and Export has positive influence on GDP growth in Ghana whiles FDI and inflation can negatively affect the growth of GDP. For example most of the independent variables X1(inflation), X2 (Import), X3 (export) and X4 (Foreign Direct Investment (FDI)) should be individually significant to influence the dependent variable GDP. Using the probabilities that correspond with the independent variables below on table 2 the researcher conclude that it is only X3 which has 0% which is lower than 5% showing it is significant to influence the dependent variable (Y) but the rest of X1, X2, and X4 have 83.6%, 66.8% and 17.6% respectively which are not significant because they are more than 5%, indicating they cannot influence GDP. Based on the hypothesis that has been tested, it is a confirmations that H3 (Import) is proved to be a statistically significant factor in the explaining GDP growth of Ghana based on the probability of 0%.

Table 2

| Variable | Coefficient | Prob. |
|-----------------|--------------------|--------------|
|-----------------|--------------------|--------------|

| | | |
|-----------------------|------------------|-----------------|
| C | 10.20566 | 0.0495 |
| X1 (Inflation) | -0.027612 | 0.8363 |
| X2 (Import) | 0.094069 | 0.6687 |
| X3 (Export) | 3.234897 | 0.0000 |
| X4 (FDI) | -0.177889 | 0.1767 |
| F-statistic | 14.42016 | 0.000014 |

Also independent variables should be jointly significant to influence or explain the dependent variable. The researcher hypothesized the following

H0: All the independent variable cannot influence Y

H1: All the independent variable cannot influence Y

From table 2 above F-statistic is 14.42 with a corresponding probability of 0.00%. We can reject null because the probability of 0.00% is less than 5%. This is a good sign because the four independent variables can jointly influence the dependent variable. This also indicates that the model is good and the four independent variables can jointly influenced the dependent variable.

Stationarity and correlation

The researcher conducted Breusch-Godfrey Serial Correlation LM Test to find out if there is serial or autocorrelation in the residual. The hypothesis is as follows:

H0: Residuals are not autocorrelated

H1: Residuals are autocorrelated

The result on table 3 below shows that we have obs*R-Squared of 58.98% and has a corresponding probability value of 5.2% which is more than 5% meaning we can accept the null hypothesis and reject the alternative hypothesis and conclude that there is no autocorrelation problem with model.

Table 3

| | | | | |
|--|----------|------------------------|--------|--|
| Breusch-Godfrey Serial Correlation LM Test: | | | | |
| | | | | |
| F-statistic | 2.769635 | Prob. F(2,17) | 0.0910 | |
| Obs*R-squared | 5.898260 | Prob. Chi-Square(2) | 0.0524 | |
| | | | | |
| | | | | |
| Test Equation: | | | | |
| Dependent | | | | |

| | | | | |
|--|-------------|--------------------------|-------------|--------|
| Variable: RESID | | | | |
| Method: Least Squares | | | | |
| Date: 01/06/18 Time: 03:07 | | | | |
| Sample: 1993 2016 | | | | |
| Included observations: 24 | | | | |
| Presample missing value lagged residuals set to zero. | | | | |
| | | | | |
| | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| | | | | |
| | | | | |
| C | -2.461773 | 4.589953 | -0.536340 | 0.5987 |
| X1 | 0.069761 | 0.126961 | 0.549468 | 0.5898 |
| X2 | -0.085348 | 0.211008 | -0.404478 | 0.6909 |
| X3 | 0.152160 | 0.533177 | 0.285383 | 0.7788 |
| X4 | 0.090733 | 0.122673 | 0.739630 | 0.4696 |
| RESID(-1) | 0.589022 | 0.262147 | 2.246913 | 0.0382 |
| RESID(-2) | -0.107251 | 0.296484 | -0.361744 | 0.7220 |
| | | | | |
| | | | | |
| R-squared | 0.245761 | Mean dependent var | -7.70E-15 | |
| Adjusted R-squared | -0.020441 | S.D. dependent var | 6.590750 | |
| S.E. of regression | 6.657771 | Akaike info criterion | 6.867939 | |
| Sum squared resid | 753.5406 | Schwarz criterion | 7.211538 | |
| Log likelihood | -75.41527 | Hannan-Quinn criter. | 6.959096 | |

| | | | | |
|-------------------|----------|--------------------|----------|--|
| F-statistic | 0.923212 | Durbin-Watson stat | 1.877855 | |
| Prob(F-statistic) | 0.502759 | | | |
| | | | | |
| | | | | |

Test for homoscedasticity

The researcher test for variance of the residuals to find out if they are constant in other words having homoscedasticity or heteroscedasticity

H0: Variance of the model is homoscedasticity

H1: Variance of the model is heteroscedasticity

The test was done using Breusch-Pagan-Godfrey test. From table 4 below it can be observe that Obs*R-squared = 6.56724 Prob. Chi-Square(4) = 0.1606 or 16.06% which more than 5% meaning that we cannot reject the null hypothesis and conclude that the model has homoscedasticity which suggests that the model is good for prediction.

Table 4

| Heteroskedasticity Test: Breusch-Pagan-Godfrey | | | | |
|---|----------|---------------------|--------|--|
| | | | | |
| | | | | |
| F-statistic | 1.789413 | Prob. F(4,19) | 0.1727 | |
| Obs*R-squared | 6.567243 | Prob. Chi-Square(4) | 0.1606 | |
| Scaled explained SS | 5.296804 | Prob. Chi-Square(4) | 0.2582 | |
| | | | | |
| | | | | |
| | | | | |
| Test Equation: | | | | |
| Dependent Variable: RESID^2 | | | | |
| Method: Least Squares | | | | |
| Date: 01/06/18 Time: 03:09 | | | | |
| Sample: 1993 2016 | | | | |
| Included observations: 24 | | | | |
| | | | | |
| 9.71300 | | | | |
| 13.4251 | | | | |

| | | | | |
|----------|--|--|--|--|
| -3.71209 | | | | |
| . * . | | | | |
| 8.87200 | | | | |
| 18.3876 | | | | |
| -9.51561 | | | | |
| * . . | | | | |
| 10.5170 | | | | |
| 3.46043 | | | | |
| 7.05657 | | | | |
| . * | | | | |
| 11.2980 | | | | |
| 11.2736 | | | | |
| 0.02436 | | | | |
| . * . | | | | |
| 11.1950 | | | | |
| 9.90669 | | | | |
| 1.28831 | | | | |
| . * . | | | | |
| 12.1600 | | | | |
| 16.3047 | | | | |
| -4.14467 | | | | |
| . * . | | | | |
| 12.5760 | | | | |
| 18.8756 | | | | |
| -6.29961 | | | | |
| . * . | | | | |
| 8.10700 | | | | |
| 14.0104 | | | | |
| -5.90343 | | | | |
| . * . | | | | |
| 8.64700 | | | | |
| 11.0733 | | | | |
| -2.42634 | | | | |
| . * . | | | | |
| 10.0320 | | | | |
| 10.4295 | | | | |
| -0.39750 | | | | |
| . * . | | | | |
| 12.4180 | | | | |
| 11.4185 | | | | |
| 0.99947 | | | | |
| . * . | | | | |
| 14.4510 | | | | |
| 13.4141 | | | | |
| 1.03690 | | | | |
| . * . | | | | |
| 17.4610 | | | | |
| 11.6646 | | | | |

| 5.79641 . * . | | | | |
|--------------------|-------------|------------|-------------|-------|
| 20.4010 | | | | |
| 18.5525 | | | | |
| 1.84855 | | | | |
| . * . | | | | |
| 24.7580 | | | | |
| 26.0007 | | | | |
| -1.24270 | | | | |
| . * . | | | | |
| 28.5280 | | | | |
| 37.8764 | | | | |
| -9.34842 | | | | |
| * . . | | | | |
| 25.5900 | | | | |
| 38.6524 | | | | |
| -13.0624 | | | | |
| * . . | | | | |
| 32.1740 | | | | |
| 34.6315 | | | | |
| -2.45750 | | | | |
| . * . . | | | | |
| 39.5650 | | | | |
| 37.5591 | | | | |
| 2.00594 | | | | |
| . * . | | | | |
| 41.9390 | | | | |
| 34.4525 | | | | |
| 7.48650 | | | | |
| . * | | | | |
| 47.8060 | | | | |
| 30.5404 | | | | |
| 17.2656 | | | | |
| . . * | | | | |
| 38.7740 | | | | |
| 36.1540 | | | | |
| 2.62004 | | | | |
| . * . | | | | |
| 36.8930 | | | | |
| 34.0358 | | | | |
| 2.85724 | | | | |
| . * . | | | | |
| 42.7780 | | | | |
| 34.5536 | | | | |
| 8.22436 | | | | |
| . . * | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |

| | | | | |
|--------------------|-----------|-----------------------|-----------|--------|
| | | | | |
| | | | | |
| C | 17.35796 | 42.91971 | 0.404429 | 0.6904 |
| X1 | -1.971212 | 1.162832 | -1.695182 | 0.1064 |
| X2 | 1.763664 | 1.909125 | 0.923808 | 0.3672 |
| X3 | 6.554902 | 4.971698 | 1.318443 | 0.2030 |
| X4 | 0.100005 | 1.118367 | 0.089421 | 0.9297 |
| | | | | |
| | | | | |
| R-squared | 0.273635 | Mean dependent var | 41.62807 | |
| Adjusted R-squared | 0.120716 | S.D. dependent var | 68.22068 | |
| S.E. of regression | 63.97062 | Akaike info criterion | 11.33778 | |
| Sum squared resid | 77752.57 | Schwarz criterion | 11.58320 | |
| Log likelihood | -131.0533 | Hannan-Quinn criter. | 11.40289 | |
| F-statistic | 1.789413 | Durbin-Watson stat | 2.362499 | |
| Prob(F-statistic) | 0.172670 | | | |
| | | | | |

Normality Test

The researcher also tests the residuals to see how they are distributed. Jarque Bera statistics was used for the test. From the figure below we can observe that Jarque Bera statistics is 80% and its corresponding probability is 67% which is more than 5% meaning that we cannot reject the null (H₀) hypothesis. This show the residuals is normally distributed.

H₀: The residuals follow normal (U) distribution

H₁: The residuals do not follow normal (U) distribution

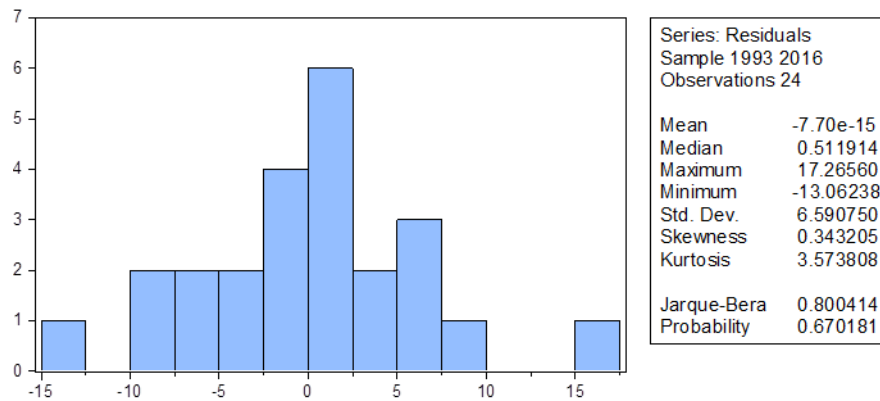


Fig. 3. Residual Analysis

Summary of Finding

The qualitative analysis at introduction section suggests that Ghana spent a lot of resources in organizing elections at the end of every four years. Ghana lost averagely 4 point of her GDP during and after elections periods in Ghana. This result revealed that four year tenure of regular elections of leaders and managers of economy of Ghana affects economic growth in Ghana negatively by reducing the growing GDP in four years tenure. The finding of Acemoglu et al. (2014) established the stable democracy can affect economic growth positively but the costs of elections within every four years negatively affect growth (GDP) in Ghana.

The econometric analysis of analysis of factors influencing GDP in Ghana revealed that FDI and inflation had negative relationship on GDP. This negative outcome of inflation causes the wealth of the nation to erode which is in line with Balac (2008) that inflation is the major cause of wealth loss in nations. From the study FDI was found to be having negative relationship towards GDP growth. This finding is line with the outcome of Pardeep Agarwal (2000) who also found the relationship of FDI on GDP growth to be negative prior to 1980, mildly positive for early eighties and strongly positive over the late eighties and nineties in South Asia. The finding also supported research by Nuzhat Falki (2009) in Pakistan who concluded that that FDI has adverse relationship between GDP and FDI inflows in Pakistan. However the finding is directly opposite the result of Jyun-Yi, Wu and Hsu Chin-Chiang (2008) and Raja Nurul Aini Raja Aziz & Amalina Azmi (2017) who found the variable to be significant and had positive relationship with GDP. Import and export have positive relationship toward GDP. Export was the only significant factor and had positive relationship on GDP growth in Ghana. This means that Ghana must increase production of goods and services that are exported by the country. The finding support Tekin (2012) that a raise in exports has a positive effect on growth and is contrary to the finding of Yuhong Li et al. (2010) where the researchers recommended that growth of import greatly promoted economic growth of China, whereas that of export performed an opposite one.

Conclusion

The research on GDP progression is a very multifaceted and evolved in many decades and centuries. Ghana must learn from developed world and tap from the experience of Chinese and move from import economy to an export one like China. The managers of the country must motivate the workforce and encourage them to save at least 25% personal income every month or day, religious group must teach the members (citizen) to be loyal, responsible, and be committed to where they work in order to improve organizational identity. The citizen must believe in Ghana and

patronize made in Ghana goods and consider all goods made outside the country as the second fiddle to domestic ones and this effort would lead to improvement in GDP. Though there are several other factors that enhance GDP but this paper also has presented a regression analysis of factors influencing GDP in Ghana. The finding established that the growth of GDP depends solely on Export in Ghana. This means that Ghana must increase production of goods and services that are exported by the country. Ghana must add value to the raw goods and services by processing before exporting them. Government must give incentives such as tax exemption, free tilling of agriculture land for any citizen who want to enter farming and provision of free seed, seedlings and others to people who are engage in productions of these export commodities. Gold and aluminum, manganese ore, diamonds and other products must be processed into finished product before exporting and government must come out with the policy and all successive government must support it that none of these minerals should be exported at it raw state from the country.

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Regression output

| Dependent Variable: Y (GDP) | | | | |
|-----------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares | | | | |
| Date: 01/06/18 Time: 01:03 | | | | |
| Sample: 1993 2016 | | | | |
| Included observations: 24 | | | | |
| | | | | |
| | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| | | | | |
| | | | | |
| C | 10.20566 | 4.865172 | 2.097698 | 0.0495 |
| X1 (Inflation) | -0.027612 | 0.131813 | -0.209476 | 0.8363 |
| X2 (Import) | 0.094069 | 0.216409 | 0.434683 | 0.6687 |
| X3 (Export) | 3.234897 | 0.563568 | 5.740032 | 0.0000 |
| X4 (FDI) | -0.177889 | 0.126773 | -1.403210 | 0.1767 |
| | | | | |
| | | | | |
| R-squared | 0.752219 | Mean dependent var | 21.94388 | |
| Adjusted R-squared | 0.700055 | S.D. dependent var | 13.24039 | |
| S.E. of regression | 7.251402 | Akaike info criterion | 6.983318 | |
| Sum squared resid | 999.0737 | Schwarz criterion | 7.228746 | |
| Log likelihood | -78.79982 | Hannan-Quinn criter. | 7.048431 | |
| F-statistic | 14.42016 | Durbin-Watson stat | 1.041508 | |
| Prob(F-statistic) | 0.000014 | | | |
| | | | | |
| | | | | |

Residual analysis output

| | | | |
|---------|---------|----------|--------|
| 9.71300 | 13.4251 | -3.71209 | . * . |
| 8.87200 | 18.3876 | -9.51561 | * . . |
| 10.5170 | 3.46043 | 7.05657 | . * |
| 11.2980 | 11.2736 | 0.02436 | . * . |
| 11.1950 | 9.90669 | 1.28831 | . * . |
| 12.1600 | 16.3047 | -4.14467 | . * . |
| 12.5760 | 18.8756 | -6.29961 | .* . |
| 8.10700 | 14.0104 | -5.90343 | .* . |
| 8.64700 | 11.0733 | -2.42634 | . * . |
| 10.0320 | 10.4295 | -0.39750 | . * . |
| 12.4180 | 11.4185 | 0.99947 | . * . |
| 14.4510 | 13.4141 | 1.03690 | . * . |
| 17.4610 | 11.6646 | 5.79641 | . * . |
| 20.4010 | 18.5525 | 1.84855 | . * . |
| 24.7580 | 26.0007 | -1.24270 | . * . |
| 28.5280 | 37.8764 | -9.34842 | * . . |
| 25.5900 | 38.6524 | -13.0624 | * . . |
| 32.1740 | 34.6315 | -2.45750 | . * . |
| 39.5650 | 37.5591 | 2.00594 | . * . |
| 41.9390 | 34.4525 | 7.48650 | . * |
| 47.8060 | 30.5404 | 17.2656 | . . * |
| 38.7740 | 36.1540 | 2.62004 | . * . |
| 36.8930 | 34.0358 | 2.85724 | . * . |
| 42.7780 | 34.5536 | 8.22436 | . . * |