

Impact of Monetary Policies on the Exchange Rate and Global Trade Evidence from Ghana

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Abstract

The impact of monetary policies and their implementation by the exchange rate covered the economic condition of Ghana. The social inclusion and conversion factors change the implemented policies of nations, where the real price, trade, technology, a price rate, and price level of ratio take an important part of growth. The reform of the financial sector favors the free-floating of the exchange rate and global trade under the premise of flexible exchange rates. The tragedy of country growth and exchange rate toward a trajectory of growth with the growth-enhancing effect through social inclusion, conversion factors, price level ratio, exchange rate, merchant rate, export, and trade services. The research study is based on the secondary study and social inclusion equity indicators with public resources, building human resources and social protection for economic development has determined. Different evidence and trade indicators classify the monetary policies. The significant influence of growth and internal policies has affected trade and exchange rates with growth and reserve policies. The results have computed by linear regression and it proved that social inclusion and alternative conversion factors impact on global trade and create short term binary relationships.

Keywords: Trade, Conversion Factors, Price Rate, Economic Growth.

1. Introduction

The main aims of this study paper are to examine the importance of monetary policies and their implication on the growth level with the exchange rate, which showed by the trade, conversion factor, a price rate, and the growth level of GDP. The economic growth in Ghana determines the two different policies of patents and promoting. 30% Ghanaians deal with the financial sectors and hold the big flow of financial circumstance, will this effect on monetary policies and or just creating the big gap in economic principle. There are two macroeconomic policies implemented to control government budgets and financial flow. Such as fiscal and metering policy, that can use the economic manager to control the budgeting and fiancé. (Khanna, Greener, Straka, & Adams, 2019) The health of fiancé to manage by expanding economic growth (GDP). The monitoring and fiscal policies are complementary to each other in Ghana. The monitoring policies are being worked by a civil society along with the strong policy program and strategies. (Agusto& Khan, 2018; Ahmed et al., 2020).

The insight policies and an agenda based on trade and fiscal policies. It is advance to understanding the policy agenda and trade sector pregame in Ghana. And, to determine the agenda of sector programs which influenced by how the national income level uses their sources of power to define the material of fiscal policies. (Adu, Marbuah, & Mensah, 2013) The power sources identified the structural authority; access by political influence, control, conversion factor, trade implementation, demographic change plan of trade, (Lin & Agyeman, 2019; Uddin, Sjö, & Shahbaz, 2013) The policies should not the pursuit of transformative changes and improvement of economic system by low-income countries. According to Rochefort the frame of label issues of economic decision influences trade, a price rate in economic development. (Kong & Khan, 2019) The policy agenda setting and planning the subsequent issues labeling and policy sector with a problem. (Bond, Söderbom, & Wu, 2011; Mensah & Botchway, 2013)

The importance of this research paper is showing the basic monetary policies under the state of social inclusion, conversion factors, economic growth, and global trade. However, prior research papers discussed the issues of global trade in a term of long term but not directly classify the issues of monetary policies under the above

indicators, therefore this research study based on novelty. (Murtazashvili, Murtazashvili, & Salahodjaev, 2019; Traoré, 2019) The research data based on World Bank indicators and the financial department of Ghana. 2nd section of a research paper is based on literature and expert theories. We base the 3rd section on the research method and 4th is an analysis and the last one shows the recommendation and conclusion of the research paper.

2. Literature

The prior work of research showed the financial development-economic growth with extensive attention in the development and have analyzed the finance-led growth hypothesis with the content of cal-innovation through the efficient allocation of resources from the trade and unproductivity sectors. (Adu et al., 2013) The development of robust financial factors can spur growth and services with non-financial sectors along a growth path. The content of this economic growth based on trade and implemented economic policies and financial sectors, and thus development financial sectors focus on the efficiency of trade and monitoring policies. (Amri, 2017) The financial development and efficiency of investment are important for financial liberalization in promoting domestic and hence investment. The works of the foundation for liberalization and developing countries including Ghana, as part of the IMF bank change program. (Herrerias, Cuadros, & Luo, 2016).

We must emphasize that variant argument has been an advance in the literature between economic growth and financial development. (Acheampong & Maryudi, 2020) The empirical studies in the literature have investigated the relationship between financial depth and growth with the impact of causality. The most studies across on the panel data affirm the fact that financial development influence on growth and covariates of growth and the potential simultaneity, and unobserved country-specific growth. Likewise, the 71 countries period 1960-1995 using indicators of financial development by regarding different expects of trade and monitoring policies. (Adom & Kwakwa, 2014) They conclude on the positive influence between financial development on economic growth with trade and the implication of a change in policies and strategies with global tradition change.

The non-tradable sector effect on the currency and different price issues similar to an export subsidy and import of tax by the foreign ministry of Ghana. We illustrate the literature from the great part of the exchange rate and the consequence of a different way of investment. There are several issues of the relationship between exchange rate and export value with misalignment and international trade. Hence, the part of the undervaluation of the exchange rate is different investing from which do not fully adjust their price of the evolution of the exchange rate. The vertical integration and importer currency network of large shapes in trade and investment. The final issue of the relationship between exchange rate and investment with trade and explored the effects of exchange with decision foreign ministry, especially they influence the investment rate and trade value of international trade. The prior research study is also showed the limited and largely focused contingency in the long period of overvalued.

The trade policy may compensate for the different levels of currency and domestic firm exchange rate and lose competitiveness because of the exchange rate and an overvalued currency. The dispute of the exchange rate policies among trade partners creates the relationship between trade and investment. In more general, the countries use trade and substitute for the exchange rate with persistent disequilibria in a trade of business and investment. This paper main finding showed the exchange rate with a vitality which it does not affect international trade except in the occurrence of union and pegged exchange and trade rate in international market, the rate is not directly covert the country monitoring policy in the long term, its effect on the short term but the economy directly volatility the trade and investment for the long term. Second, the currency directly flows the relationship of the exchange rate and pegged the trade and investment in an international market by the misalignment which is directly affected on the cross of sustain issues. The currency undervaluation found and restrict import also effect on the investment policies with huge interaction of magnitude, and it across the currency and evidence of trade policy. Third, the fund evidence converts evidence of support and compensates for the overvalued currency policies. However, the policies seem to be the anti-dumping intervention of international trade and investment. (Amoako, Cobbinah, & Mensah Darkwah, 2019) The recent persistence of the panel data affirms the fact that financial development influence on growth and covariates of growth and the potential simultaneity, and unobserved country-specific growth. Hence, the above countries indicators of financial development by regarding different expects of trade and monitoring policies and investment. (Frimpong Boamah & Sumberg, 2019) They conclude on the positive influence between financial development on economic growth with trade and the implication of change in policies and strategies with global tradition change. The recent imbalance in non-traditional trade and the effect of exchange rate restrictive measures international trade. (Brobbe, Pouliot, Hansen, & Kyereh, 2019) the presumption of investment indirectly in different public and private sectors are showed the presumption of the exchange rate with theoretical literature and trade investment. (Ayanoo, 2019; Gad et al., 2019) .

We affect the volatility of the relationship of investment and trade and policy on the regression estimate on the panel datasets of these countries and in touch with other different countries whose policies only interact with

misalignment affect trade policies decision. (Sovacool, 2019) we also discuss the method framework in the next section with a linear relationship of social inclusion and conversion factors change the implemented policies of nations, where the real price, trade, a technology, a price rate, and price level of ratio taking an important part of growth.

The international trade could have driven by the different causality, which directly related to trade and their flow of exchange because we base the investment and trade on the proper finance policies with a legal interaction of foreign affairs. (Mullineux & Murinde, 2014) Therefore, the exchange rate compelling the argument of risk association of forwarding contact and currency option. Another critique of related sunk cost in export and investment. (Alhassan & Fiador, 2014) The higher fixed cost of investment and export are the volatility issues of international trade where the exchange rate is a critical issue of international trade. The cross-border transaction of the international firm in Ghana held and monitoring by under the private contract and the involvement of government also based on that private firms so international market the investment is a flow-on inside and not given directly benefit to individuals to the state.

3. Methodology

We base the paper method on World Bank indicators, which is undertaking in Ghana and focused on the critical issues of monitoring policies. In particular, the study sought to determine the influence of exchange rate and global trade evidence by Table 1, in which the trade policies have determined the social inclusion and equity with the public resource, building human resources and social protection for economic development has determined. We have analyzed the alternative DEC factors' annual exchange rate and also reported with the IMF's international financial statistics by dollars. The exchange rate is determined by legally sanctioned an annual average income-based. The purchasing power parity has been computed by a unit of the domestic market and the PPP conversion factor results got by the exchange rate of Ghana. The ratio also referred to the national level. The real price nominal effective rate and weighting average of several exchange rates are divided by a price deflator or index of cost. The merchandise trade as a share of GDP and merchandise exports with imports divided by the value of GDP in all current US. dollars. The high technology export targets the monitoring policies with high R&D intensity. The travel service determined the service economy which is used in one year and also include the good or services. Initially, by the linear state, we have computed the data in unit root and individually hypothesis each indicator.

Table 1. Indicators

Country Name	Indicator	Indicator Name	Indicator Code
Ghana	CPIA	CPIA policies for social inclusion/equity cluster average (1=low to 6=high)	IQ.CPA.SOCI.XQ
Ghana	DEC	DEC alternative conversion factor (LCU per US\$)	PA.NUS.ATLS
Ghana	LCU	Official exchange rate (LCU per US\$, period average)	PA.NUS.FCRF
Ghana	PLR	Price level ratio of PPP conversion factor (GDP) to market exchange rate	PA.NUS.PPPC.RF
Ghana	REX	Real effective exchange rate index (2010 = 100)	PX.REX.REER
Ghana	MT	Merchandise trade (% of GDP)	TG.VAL.TOTL.GD.ZS
Ghana	THE	High-technology exports (% of manufactured exports)	TX.VAL.TECH.MF.ZS
Ghana	TSC	Travel services (% of commercial service exports)	TX.VAL.TRVL.ZS.WT

4. Results and Analysis

Table 2. Mean deviation

	CPIA	DEC	LCU	MT	PLR	REX	THE	TSC
Mean	3.878571	0.829691	0.829399	54.82708	0.333163	335.0439	4.566921	25.94839
Median	3.9	0.18415	0.184172	54.08051	0.323188	109.9112	4.443817	8.795014
Maximum	4	4.5853	4.585325	93.19641	0.608276	3549.286	8.259932	77.20946
Minimum	3.7	0.000188	0.000115	25.3466	0.146365	64.66527	1.698087	0.347222

Std. Dev.	0.10509	1.248766	1.248978	15.22207	0.124527	676.9838	2.657452	27.5994
Skewness	-0.387414	1.795421	1.794974	0.372768	0.184021	3.574841	0.363313	0.63838
Kurtosis	2.050271	5.268294	5.267016	3.177636	1.971886	15.61889	1.594373	1.676852
Jarque-Bera	0.876367	33.07204	33.04967	1.076859	1.440906	341.8259	0.730267	6.057327
Probability	0.645208	0	0	0.583664	0.486532	0	0.694104	0.04838
Sum	54.3	36.50641	36.49354	2412.391	9.66173	13066.71	31.96845	1115.781
Sum Sq. Dev.	0.143571	67.05493	67.07769	9963.595	0.434196	17415670	42.3723	31992.53
Observations	14	44	44	44	29	39	7	43

They indicate table 2 the mean deviation with a standard deviation and shows the highest mean value of REX with CPIA, which shows a significant impact on monitoring policies. Table 3 analyzed the indicator summary with the different codes where the person test value shows 0. Table 4 is showing the test of equality. where the second-highest deviation in MT.

Table 3. Tabulation summary of indicators

Tabulation Summary			
Variable		Categories	
CPIA		5	
DEC		5	
LCU		5	
MT		4	
PLR		6	
REX		5	
THE		8	
TSC		5	
Product of Categories		600000	
Test Statistics	df	Value	Prob
Pearson X2	599964	6362469	0
Likelihood Ratio G2	599964	420.7576	1

Table 4. Test of equality

Test for Equality of Means Between Series			
Sample: 1975 2018			
Included observations: 44			
Method	df	Value	Probability
Anova F-test	(7, 256)	7.279739	0
Welch F-test*	(7, 65.6711)	1364.163	0
*Test allows for unequal cell variances			

Source of Variation		df	Sum of Sq.	Mean Sq.
Between		7	3475070	496438.5
Within		256	17457804	68194.55
Total		263	20932873	79592.67
Category Statistics				
Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
CPIA	14	3.878571	0.10509	0.028087
DEC	44	0.829691	1.248766	0.188259
LCU	44	0.829399	1.248978	0.188291
MT	44	54.82708	15.22207	2.294814
PLR	29	0.333163	0.124527	0.023124
REX	39	335.0439	676.9838	108.4042
THE	7	4.566921	2.657452	1.004422
TSC	43	25.94839	27.5994	4.208869
All	264	63.4993	282.1217	17.36339

Table 5. Unit root test

Null Hypothesis: Unit root (common unit root process)							
Series: CPIA, DEC, LCU, MT, PLR, REX, THE, TSC							
Sample: 1975 2018							
Exogenous variables: Individual effects							
Automatic selection of maximum lags							
Automatic lag length selection based on SIC: 0 to 4							
Newey-West automatic bandwidth selection and Bartlett kernel							
Total number of observations: 237							
Cross-sections included: 8							
Method		Statistic			Prob.**		
Levin, Lin & Chu t*		-6.41942			0		
** Probabilities are computed assuming asymptotic normality							
Intermediate results on D(UNTITLED)							
	2nd Stage	Variance	HAC		Max	Band-	
Series	Coefficient	of Reg	of Dep.	Lag	Lag	width	Obs
D(CPIA)	-0.86486	0.0046	0.0037	1	1	1	11
D(DEC)	0.54354	0.014	0.0148	4	9	2	38
D(LCU)	0.54367	0.014	0.0148	4	9	2	38
D(MT)	-1.19398	133.81	6.8088	0	9	41	42

D(PLR)	-1.08333	0.0036	0.0005	0	5	13	27
D(REX)	-1.22533	281967	46476	0	9	26	37
D(THE)	-2.31254	0.4467	15.284	0	0	2	3
D(TSC)	-1.0286	122.17	24.487	0	9	10	41
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-1.13345	-13.579	1.318	-0.548	0.895		237

It indicates table 5 the unit root test for the stationary factor individual and with 2nd coefficient determined the variance of HAC. The least-squares are shown in Table 6 with the dependent variable. The other two variables exclude a cause of a unit root. Fig 1 is showing the mean deviation of individual variables.

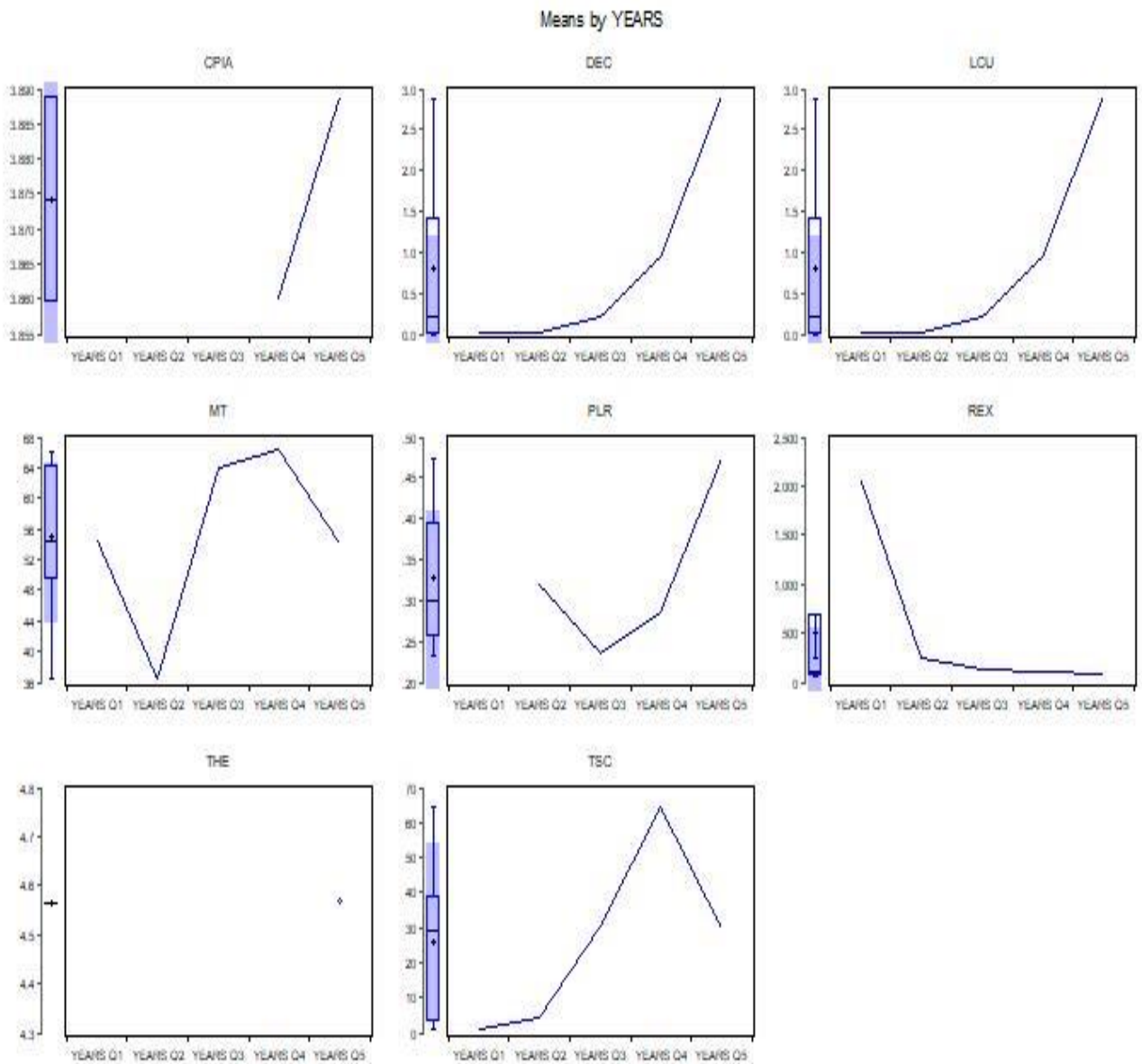


Figure 1. Mean deviation

Table 6. Least square

Dependent Variable: DEC				
Method: Least Squares				
Sample (adjusted): 1990 2017				
Included observations: 28 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LCU	0.99996	1.35E-05	73956.32	0
MT	-1.71E-06	9.22E-07	-1.853493	0.0773
PLR	2.33E-05	9.32E-05	0.250096	0.8048
REX	-1.19E-06	6.30E-07	-1.886635	0.0725
TSC	4.07E-07	3.29E-07	1.238736	0.2285
C	0.000249	0.000138	1.80822	0.0843
R-squared	1	Mean dependent var		1.136611
Adjusted R-squared	1	S.D. dependent var		1.21936
S.E. of regression	3.61E-05	Akaike info criterion		-17.4304
Sum squared residue	2.87E-08	Schwarz criterion		-17.14493
Log likelihood	250.0257	Hannan-Quinn criter.		-17.34313
F-statistic	6.14E+09	Durbin-Watson stat		1.987947
Prob(F-statistic)	0			

Table 7. Ramsey Test

Ramsey RESET Test			
Equation: UNTITLED			
Specification: DEC LCU MT PLR REX TSC C			
Omitted Variables: Squares of fitted values			
	Value	df	Probability
t-statistic	0.836358	21	0.4124
F-statistic	0.699494	(1, 21)	0.4124
Likelihood ratio	0.917463	1	0.3381
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	9.27E-10	1	9.27E-10

Restricted SSR	2.87E-08	22	1.31E-09
Unrestricted SSR	2.78E-08	21	1.32E-09
LR test summary:			
	Value		
Restricted LogL	250.0257		
Unrestricted LogL	250.4844		

Table 7 shows the test of restricted SSR and mean square with the 22 number of observations and tabulation of indicators has determined in Fig 2. T-test has computed in Table 8 and Table 9 is showing the ranger causality. The covariance relationship showing the relationship between indicators. Table 10 shows the residual factor individually determined in Fig 3.

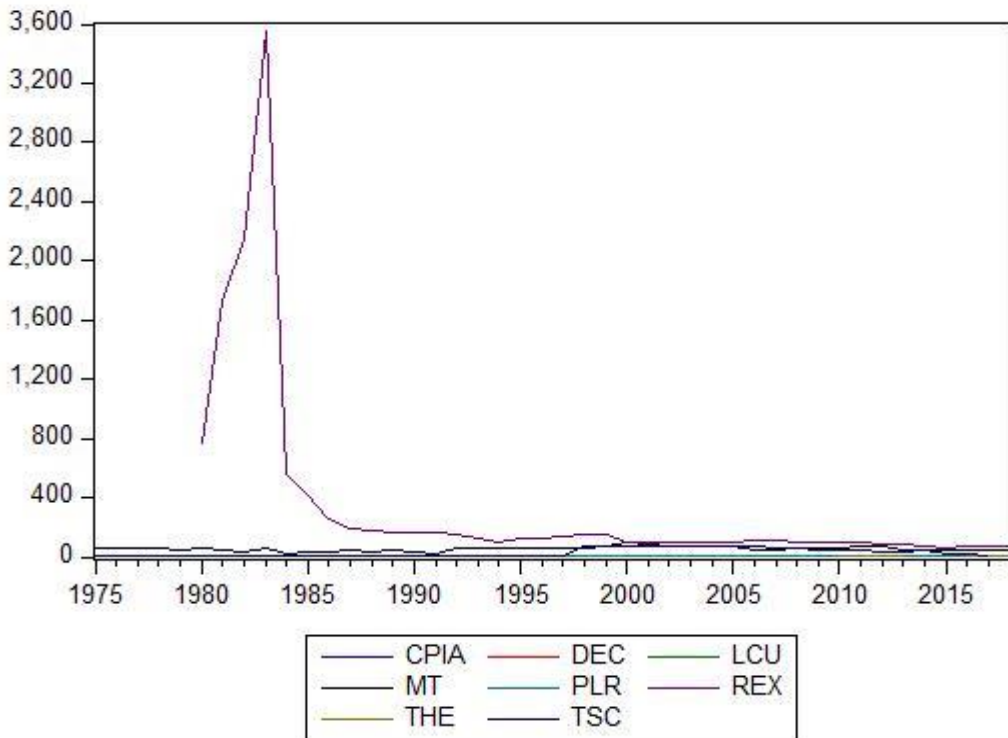


Figure 2. Tabulation of indicator

Table 8. t-test

Unrestricted Test Equation:				
Dependent Variable: DEC				
Method: Least Squares				
Variable	Coefficient	Std.Error	t-Statistic	Prob.

LCU	1.000011	6.24E-05	16020.65	0
MT	-1.88E-06	9.50E-07	-1.976053	0.0614
PLR	-7.64E-05	0.000152	-0.503698	0.6197
REX	-8.22E-07	7.71E-07	-1.067055	0.2981
TSC	1.26E-07	4.72E-07	0.267545	0.7917
C	0.000232	0.00014	1.6555	0.1127
FITTED^2	-9.89E-06	1.18E-05	-0.836358	0.4124
R-squared	1	Mean dependent var		1.136611
Adjusted R-squared	1	S.D. dependent var		1.21936
S.E. of regression	3.64E-05	Akaike info criterion		-17.39174
Sum squared resid	2.78E-08	Schwarz criterion		-17.05869
Log likelihood	250.4844	Hannan-Quinn criter.		-17.28992
F-statistic	5.05E+09	Durbin-Watson stat		2.050199
Prob(F-statistic)	0			

Table 9. Granger Causality

Pairwise Granger Causality Tests			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
DEC does not Granger Cause CPIA	12	11.1375	0.0067
CPIA does not Granger Cause DEC		1.35528	0.318
LCU does not Granger Cause CPIA	12	11.137	0.0067
CPIA does not Granger Cause LCU		1.35531	0.318
MT does not Granger Cause CPIA	12	1.86558	0.2242
CPIA does not Granger Cause MT		0.17201	0.8454
PLR does not Granger Cause CPIA	12	2.28497	0.1723
CPIA does not Granger Cause		0.46151	0.6482

PLR			
REX does not Granger Cause CPIA	12	7.15632	0.0203
CPIA does not Granger Cause REX		1.32846	0.3243
THE does not Granger Cause CPIA	3	NA	NA
CPIA does not Granger Cause THE		NA	NA
TSC does not Granger Cause CPIA	11	2.14637	0.1981
CPIA does not Granger Cause TSC		1.40867	0.3151
LCU does not Granger Cause DEC	42	0.07055	0.932
DEC does not Granger Cause LCU		0.06758	0.9348
MT does not Granger Cause DEC	42	0.36388	0.6974
DEC does not Granger Cause MT		0.21054	0.8111
PLR does not Granger Cause DEC	27	6.6503	0.0055
DEC does not Granger Cause PLR		0.93937	0.406
REX does not Granger Cause DEC	37	0.06702	0.9353
DEC does not Granger Cause REX		0.0858	0.918
THE does not Granger Cause DEC	3	NA	NA
DEC does not Granger Cause THE		NA	NA
TSC does not Granger Cause DEC	41	2.30762	0.114
DEC does not Granger Cause TSC		1.88969	0.1658
MT does not Granger Cause LCU	42	0.35945	0.7005
LCU does not Granger Cause MT		0.20806	0.8131

PLR does not Granger Cause LCU	27	6.65019	0.0055
LCU does not Granger Cause PLR		0.93944	0.406
REX does not Granger Cause LCU	37	0.06546	0.9368
LCU does not Granger Cause REX		0.08564	0.9181
THE does not Granger Cause LCU	3	NA	NA
LCU does not Granger Cause THE		NA	NA
TSC does not Granger Cause LCU	41	2.31138	0.1137
LCU does not Granger Cause TSC		1.89108	0.1656
PLR does not Granger Cause MT	27	2.48218	0.1066
MT does not Granger Cause PLR		1.36785	0.2755
REX does not Granger Cause MT	37	2.15837	0.132
MT does not Granger Cause REX		1.70868	0.1972
THE does not Granger Cause MT	3	NA	NA
MT does not Granger Cause THE		NA	NA
TSC does not Granger Cause MT	41	2.24547	0.1205
MT does not Granger Cause TSC		0.97516	0.3869
REX does not Granger Cause PLR	27	2.37232	0.1167
PLR does not Granger Cause REX		3.24392	0.0583
THE does not Granger Cause PLR	3	NA	NA
PLR does not Granger Cause THE		NA	NA
TSC does not Granger Cause PLR	26	1.39125	0.2708

PLR does not Granger Cause TSC		2.49123	0.1069
THE does not Granger Cause REX	3	NA	NA
REX does not Granger Cause THE		NA	NA
TSC does not Granger Cause REX	36	0.20672	0.8144
REX does not Granger Cause TSC		0.0816	0.9218
TSC does not Granger Cause THE	2	NA	NA
THE does not Granger Cause TSC		NA	NA

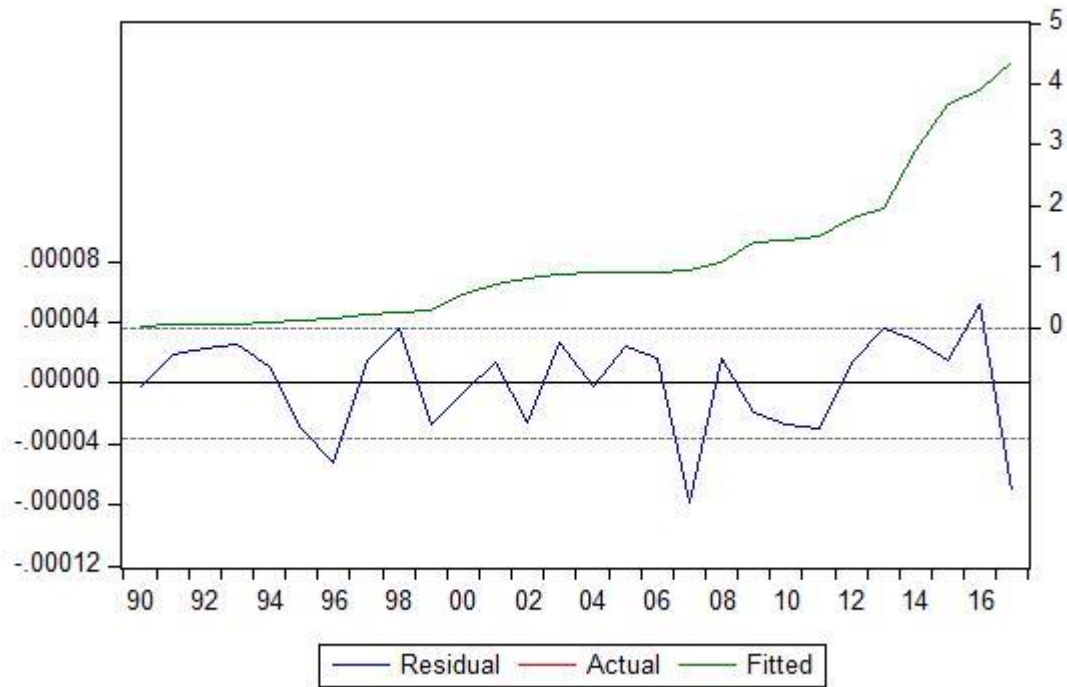


Figure 3: Residual

Table 10. Covariance

Covariance Analysis: Ordinary (uncentered)								
Covariance								
SSCP								
t-Statistic	CPIA	DEC	LCU	MT	PLR	REX	THE	TSC
CPIA	15.34833							

	92.09							

DEC	9.66819	7.598494						
	58.00914	45.59096						
	4.493159	-----						
LCU	9.668307	7.598604	7.598713					
	58.00984	45.59162	45.59228					
	4.493104	117827.1	-----					
MT	225.082	131.755	131.7567	3439.153				
	1350.492	790.5298	790.54	20634.92				
	10.92232	3.145414	3.145399	-----				
PLR	1.875342	1.184778	1.184791	27.16776	0.232391			
	11.25205	7.108668	7.108743	163.0065	1.394348			
	18.76971	4.402432	4.402349	7.769044	-----			
REX	337.3352	203.5599	203.5624	5006.151	41.08372	7485.076		
	2024.011	1221.36	1221.374	30036.91	246.5023	44910.46		
	22.86413	3.6633	3.663269	13.56715	12.78949	-----		
THE	15.55299	9.702807	9.702915	232.7672	1.908802	335.1828	20.02387	
	93.31795	58.21684	58.21749	1396.603	11.45281	2011.097	120.1432	
	4.299181	2.848676	2.848651	4.29513	4.247352	3.868671	-----	
TSC	117.712	60.10517	60.10579	1801.242	14.37304	2685.906	112.8893	1053.608
	706.2722	360.631	360.6348	10807.45	86.23826	16115.44	677.3357	6321.647
	5.470541	2.027712	2.027697	6.542025	5.195568	7.325082	2.761902	-----

5. Conclusion

The results have been signifying the relationship and influence of monitoring policy on trade and foreign policies. We classify the above results in Table5-7. Therefore, the highly effected PLR has been creating an influence on THE, MT and TSC (Table 8) and showed a significant influence on the growth and internal policies of government issues. The method of the real price shows the nominal effective rate and weighting average of several exchange rates and it is divided by a price deflator or index of cost. Also, the monitoring policies with high R&D intensity. The travel service determined the service economy which used for one year and also includes goods or services. The expected outcomes of public policies and practice showed the influence of monitoring policies with comprehensive pioneering strategies of the exchange rate, the non-linearite and pass-through affect the volatility of Ghana’s. 2nd the economic growth and ramifications of global competitiveness are shows the significant effects on poverty reduction and growing economic wealth. The relevance of this study is to serve as powerful strategical tools showing the practicality effect on the sluggish growth rate. However, the government has taken reserve, but the policies can change the magnitude of strength and policies. In we include last the exchange rate volatility to estimating growth

under the control of endogenous and resulting in simulating lag dependency so, the yield estimation shows above the robustness and stability test by liner square and restricted with SSR and mean square. The tabulation of indicators determined the T-test computed in Granger causality. The prior most studies are showing the potential simultaneity and unobserved country-specific growth regarding the financial department and trade-in monitoring policies. Therefore, the tragic policies of government control the inflation situation by proper monitoring policies in exchange rates.

References

- Acheampong, E., & Maryudi, A. (2020). Avoiding legality: Timber producers' strategies and motivations under FLEGT in Ghana and Indonesia. *Forest Policy and Economics*, *111*, 102047. doi:<https://doi.org/10.1016/j.forpol.2019.102047>
- Adom, P. K., & Kwakwa, P. A. (2014). Effects of changing trade structure and technical characteristics of the manufacturing sector on energy intensity in Ghana. *Renewable and Sustainable Energy Reviews*, *35*, 475-483. doi:<https://doi.org/10.1016/j.rser.2014.04.014>
- Adu, G., Marbuah, G., & Mensah, J. T. (2013). Financial development and economic growth in Ghana: Does the measure of financial development matter? *Review of Development Finance*, *3*(4), 192-203. doi:<https://doi.org/10.1016/j.rdf.2013.11.001>
- Agusto, F. B., & Khan, M. A. (2018). Optimal control strategies for dengue transmission in pakistan. *Mathematical Biosciences*, *305*, 102-121. doi:<https://doi.org/10.1016/j.mbs.2018.09.007>
- Ahmed, A., Korah, P. I., Dongzagla, A., Nunbogu, A. M., Nimminga-Beka, R., Kuusaana, E. D., & Abubakari, Z. (2020). City profile: Wa, Ghana. *Cities*, *97*, 102524. doi:<https://doi.org/10.1016/j.cities.2019.102524>
- Alhassan, A. L., & Fiador, V. (2014). Insurance-growth nexus in Ghana: An autoregressive distributed lag bounds cointegration approach. *Review of Development Finance*, *4*(2), 83-96. doi:<https://doi.org/10.1016/j.rdf.2014.05.003>
- Amoako, C., Cobbinah, P. B., & Mensah Darkwah, R. (2019). Complex twist of fate: The geopolitics11Geopolitics is used in this paper to refer to the way that geography of vulnerable communities affects political interventions in terms of flood management regimes of flood management regimes in Accra, Ghana. *Cities*, *89*, 209-217. doi:<https://doi.org/10.1016/j.cities.2019.02.006>
- Amri, F. (2017). Intercourse across economic growth, trade and renewable energy consumption in developing and developed countries. *Renewable and Sustainable Energy Reviews*, *69*, 527-534. doi:<https://doi.org/10.1016/j.rser.2016.11.230>
- Ayanoore, I. (2019). The politics of local content implementation in Ghana's oil and gas sector. *The Extractive Industries and Society*. doi:<https://doi.org/10.1016/j.exis.2019.11.004>
- Bond, S. R., Söderbom, M., & Wu, G. (2011). Pursuing the wrong options? Adjustment costs and the relationship between uncertainty and capital accumulation. *Economics Letters*, *111*(3), 249-251. doi:<https://doi.org/10.1016/j.econlet.2011.01.020>
- Brobbe, L. K., Pouliot, M., Hansen, C. P., & Kyereh, B. (2019). Factors influencing participation and income from charcoal production and trade in Ghana. *Energy for Sustainable Development*, *50*, 69-81. doi:<https://doi.org/10.1016/j.esd.2019.03.003>
- Frimpong Boamah, E., & Sumberg, J. (2019). The long overhang of bad decisions in agro-industrial development: Sugar and tomato paste in Ghana. *Food Policy*, *89*, 101786. doi:<https://doi.org/10.1016/j.foodpol.2019.101786>
- Gad, M., Lord, J., Chalkidou, K., As are, B., Lettered, M. G., & Ruiz, F. (2019). Supporting the Development of Evidence-Informed Policy Options: An Economic Evaluation of Hypertension Management in Ghana. *Value in Health*. doi:<https://doi.org/10.1016/j.jval.2019.09.2749>
- Herrerias, M. J., Cuadros, A., & Luo, D. (2016). Foreign versus indigenous innovation and energy intensity: Further research across Chinese regions. *Applied Energy*, *162*, 1374-1384. doi:<https://doi.org/10.1016/j.apenergy.2015.01.042>
- Khanal, P. N., Grebner, D. L., Straka, T. J., & Adams, D. C. (2019). Obstacles to participation in carbon sequestration for nonindustrial private forest landowners in the southern United States: A diffusion of innovations perspective. *Forest Policy and Economics*, *100*, 95-101. doi:<https://doi.org/10.1016/j.forpol.2018.11.007>
- Kong, Y., & Khan, R. (2019). To examine environmental pollution by economic growth and their impact in an environmental Kuznets curve (EKC) among developed and developing countries. *PloS one*, *14*(3). doi:<https://doi.org/10.1371/journal.pone.0209532>

- Lin, B., & Agyeman, S. D. (2019). Assessing Ghana's carbon dioxide emissions through energy consumption structure towards a sustainable development path. *Journal of Cleaner Production*, 238, 117941. doi:<https://doi.org/10.1016/j.jclepro.2019.117941>
- Mensah, J. T., & Botchway, E. (2013). Ghana's salt industry: A neglected sector for economic development? *Resources Policy*, 38(3), 288-294. doi:<https://doi.org/10.1016/j.resourpol.2013.06.002>
- Mullineux, A. W., & Murinde, V. (2014). Financial sector policies for enterprise development in Africa. *Review of Development Finance*, 4(2), 66-72. doi:<https://doi.org/10.1016/j.rdf.2014.05.001>
- Murtazashvili, I., Murtazashvili, J., & Salahodjaev, R. (2019). Trust and deforestation: A cross-country comparison. *Forest Policy and Economics*, 101, 111-119. doi:<https://doi.org/10.1016/j.forpol.2019.02.001>
- Sovacool, B. K. (2019). Toxic transitions in the lifecycle externalities of a digital society: The complex afterlives of electronic waste in Ghana. *Resources Policy*, 64, 101459. doi:<https://doi.org/10.1016/j.resourpol.2019.101459>
- Traoré, S. (2019). Residential location choice in a developing country: What matter? A choice experiment application in Burkina Faso. *Forest Policy and Economics*, 102, 1-9. doi:<https://doi.org/10.1016/j.forpol.2019.01.021>
- Uddin, G. S., Sjö, B., & Shahbaz, M. (2013). The causal nexus between financial development and economic growth in Kenya. *Economic Modelling*, 35, 701-707. doi:<https://doi.org/10.1016/j.econmod.2013.08.031>

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