

## Tax Reforms and Economic Growth of Nigeria

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### Abstract

*This study examines the intertwining relationship between tax revenue and economic growth in Nigeria, using time series data from 1995 – 2019. The study employed value added tax, petroleum profit tax, company's income tax, customs and excise duties as instruments in measuring tax revenue, while RGDP was to capture economic growth. The Autoregressive Distributed Lag (ARDL) technique was used to access the long and short-run properties of the variables, as the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) tests revealed that all series were found to be integrated of order one, I(1) apart from company income tax (CITAX) and petroleum profit tax (PPT) which were levels stationary, I(0). Furthermore, the study concludes that company's income tax and customs & excise duties (CED) have a positive impact on economic growth, while value added tax (VAT) and petroleum profit tax (PPT) have a negative effect on economic growth. Finally, the study recommends amongst others that the level of corruption amongst government officials should be reduced to the barest minimum as this would help bolster the confidence of tax payers which will necessitate voluntary tax compliance and ultimately spike an increase in tax revenue.*

**Keywords:** Tax Revenue, Gross Domestic Product, Value Added Tax, Petroleum Profit Tax, Company Income tax, Custom and Excise Duties.

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Date of Submission: 05-06-2021

Date of Acceptance: 18-06-2021

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### I. Introduction

The government requires funds to provide necessary basic amenities so as to enable the government achieve this feat it's expected to impose tax on its citizens. In Nigeria it has been difficult for citizens who have expended time, energy and other resources to pay taxes if benefits accrued from payment of such taxes are not derived nor seen by the citizens. The 2019 finance bill has been passed by both chambers of the senate and the House of Representatives on the 10 March 2020 in regulating businesses, minimize the compliance burden of small and medium business and ensure that the Nigerian tax system is transparency, shareholder engagement and promote a friendly business environment. The country's economy has a huge burden on the diversification of revenue generation base over the years and the government urgency in sourcing for other means of generating revenue in the tax sector. Nigeria has been over dependence on crude oil earnings.

The National Bureau of Statistics (NBS) in 2015 reported that 10 million Nigerians paid their tax out of 77 million labour workforce due to the loopholes in the country tax system such as excess dividend tax, multiple taxation and multiple revenue agencies and the non-remittance of tax refunds. The administration under President Muhammadu Buhari introduced few tax reforms in diversifying Nigeria's income and improving the tax administration with agencies like the Ministry of Finance and Federal Inland Revenue Service (FIRS) and introducing the Voluntary Assets and Income Declaration Scheme (VAIDS). VAIDS was geared towards ensuring that individual and corporate to voluntarily disclose previously hidden assets with a target of raising at least \$1 billion from undeclared liabilities and also raising the percentage of non-oil tax revenue from the six percent to 15 percent by 2020.

Furthermore, the severe plunge in global oil price in recent years has left the country in a pitiable situation, as funds available for distribution to the different tiers of government continues to dwindle. This was witnessed recently when in April 20th, 2020 the price of crude oil (WTI) futures plummeted to an all time historical low of -\$38 per barrel due to the COVID-19 pandemic. This fall sent shock waves through the country as it became necessary for the government to look at other sources of internally generated revenue; without a flicker, taxation comes to mind. The Nigerian government in time past undertook various tax reforms, with the

aim of over-hauling the tax system. However, these reforms failed to achieve the desired goals; because they were focused on the tax structure of the country rather than focusing on improving tax administration.

This brings us to the fact that the importance of an efficient and effective tax system cannot be over-emphasized as it remains a viable tool for economic growth. However, Ngerebo and Musa (2012) argued that in an effective and efficient tax system, the revenue generated as a proportion of national income ought to be close to a 100% or more of the standard tax rate. Furthermore, we noticed that in Nigeria the attitude towards tax payment is very poor as this unwillingness has resulted to tax evasion. This problem vis-à-vis tax collection cost has continued to linger on, while pleading for urgent attention. Its against the background that we decide to explore the efficacy of tax reforms on economic growth in Nigeria.

## II. Review of Related Literature

### 2.1 Theoretical Framework

(a) **Expediency Theory:** This theory is based on the fact that citizens or inhabitants of a country should be charged for the provision of amenities and services it receives from the state. Bhartia (2009) and Anyafo (1996) were of the opinion that the expediency theory is justified based on the link between state activities and tax liability. This theory is enshrined in the canons of taxation which considers economy, effectiveness and efficiency of the tax levying system as being paramount. However, Kiabel and Nwokah (2009) lends credence to this proposition that “it is impracticable to operate a tax system where taxes cannot be levied and collected efficiently”.

(b) **Benefit Received Theory:** This theory contends that a relationship based on exchange subsist between the state and tax-payers owing to the benefit they derive from the consumption of certain goods and services. However, these benefits received by the tax-payers comes at a cost and as such should be charged in proportion to the benefits earlier received. This can be further seen in the works of Anyanfo (1996) who argued that taxes should be levied based on the benefits earlier derived from government expenditure. This theory differs from the expediency theory whose argument rests on the efficiency of tax collection system as opposed to the benefit derived from such taxes.

(c) **Socio Political Theory:** This theory advocates that the tax system set-up within the state should not be for the aggrandizement of some particular individuals; rather it should be for the betterment of the larger society.

(d) **Faculty Theory:** This theory contends that taxes should be levied on an individual based on their ability to pay. This theory seeks to address the distributive effects of taxes vis-à-vis maximizing an explicit value judgement. Furthermore, Bhartia (2009) argued that taxes should not just be levied on individuals because they ought to pay, but rather his share of taxes should be determined by the payment capacity of individuals.

### 2.2 Empirical Review

Onoja and Ibrahim (2020) examined the relationship between Tax Revenue and Economic Growth in Nigeria from 2003 to 2017 using the ordinary least square (OLS) method. Their findings suggested that petroleum profit tax (PPT) had an insignificant positive relationship with economic growth; while value added tax (VAT) and company income tax (CIT) had a positive and significant relationship with economic growth. Joseph & Omodero (2020) studied the effect of government tax revenue on economic growth in Nigeria using data spanning 1981 to 2018 obtained from the CBN statistical bulletin, Federal Inland Revenue Services (FIRS) and National Bureau of Statistics within the OLS framework. Their findings indicated that Value Added Tax (VAT) and federally collected revenue have a moderate positive relationship with economic in Nigeria.

Ironkwe and Agu (2019) in their work analysed the relationship between total tax receipts and economic growth in Nigeria using time series data spanning 1986-2016. Their findings indicated that a positive and significant relationship subsist between total revenue and unemployment in Nigeria. Herbert, Nwarogu and Nwabueze (2018) using annual data from 2000-2015 within a transformed econometric linear model accessed the effect of tax reforms on economic stability in Nigeria. Tax reforms was proxied using PPT, CIT and VAT, while economic growth was proxied with GDP. The results suggested that PPT, VAT and CIT have positive and significant impact on economic growth in Nigeria.

Asaolu, Olabisi, Akinbode and Alebiosu (2018) examined the impact of tax revenue on economic growth in Nigeria, using time series data spanning 1994-2015 obtained from Central Bank of Nigeria (CBN) statistical bulletin and annual reports. The study proxied tax revenue using Petroleum Profit Tax (PPT); Company Income Tax (CIT); Value Added Tax (VAT) and Custom and Excise Duties (CED) while Economic Growth (EG) proxied by the Gross Domestic Product (GDP). The variables were analyzed using the Auto-Regressive Distributed Lag (ARDL) model. The findings suggested that PIT had an insignificant positive relationship with economic growth; while CED and VAT had a significant positive relationship with economic growth. Conversely, a negative and significant relationship was observed between CIT and economic growth. Samuel, Mni and Chika (2018) analysed the impact of tax revenue on economic growth in Nigeria using data

from 1980 to 2015 using time series data obtained from CBN statistical bulletin. The study employed the ordinary least square (OLS) method to analysed PPT, CIT, CED on economic growth. Findings indicated that PPT, CIT and CED are positively insignificant to economic growth in Nigeria.

Achor and Ekundayo (2016) studied the impact of indirect tax revenue on economic growth in Nigeria; using timeseries data from 1993 to 2013. Indirect tax was proxied using value added tax and customs & excise duties with economic growth proxied by Gross Domestic Product, all obtained from the Central Bank of Nigeria. The variables were modelled using the unit root tests, correlation, cointegration test and Error Correction Model. The results of the study indicated that value added tax had a positive and significant impact on real Gross Domestic Product. Jelilov, Abdulrahman and Isik (2016) inquired into the effect of tax reforms on economic growth in Nigeria from 1986 to 2012 using PPT, CIT and VAT as measures of tax reforms and GDP as proxy for economic growth. Findings indicated that PPT and CIT had a positive and significant relationship with GDP, while VAT was negatively significant with GDP.

Ogbonna and Ebimobewe (2012) interrogated the impact of tax reforms and economic growth of Nigeria using relevant descriptive statistics and econometric analysis and concluded that tax reforms are positively and significantly associated to economic growth and that tax reforms granger cause economic growth. Okafor (2012) adopted the ordinary least square (OLS) regression analysis using the period 1981-2007 to explore the impact of income tax revenue on the economic growth of Nigeria and from the analytical output, the regression result revealed a very positive and significant relationship between federal collected tax revenue and economic growth in Nigeria.

Worlu and Emeka (2012) use the three stage least square (3SLS) regression framework to interrogate the impact of tax revenue on Nigeria’s economic growth, judging from its impact on infrastructural development covering from 1980 to 2007. Their results show that tax revenue stimulates economic growth through infrastructural development. The study also reveals that tax revenue has no independent effect on growth through infrastructural development and foreign direct investment, simply allowing the infrastructural development and foreign direct investment to positively respond to increase in output. Despite numerous studies on the relationship between tax revenue an economic growth and the foregoing discussion, attention failed to be focused on the effect taxation has on social welfare and economic growth in Nigeria

### III. Methodology and Model Specification

The study utilized annual time series data for the period 1995-2019, obtained from Nigerian Bureau of Statistics and Indexmundi. The model adopted for this study is thus specified below as;

#### Equation 1

$$\ln RGDP_t = \beta_0 + \beta_1 \ln CITAX_t + \beta_2 CED_t + \beta_3 \ln PPT_t + \beta_4 VAT_t + e_t$$

Where ln is natural logarithm, RGDP refers to the real gross domestic product, CITAX refers to company income tax, PPT petroleum profit tax and VAT is the value of tax.

### IV. Data and Empirical Results

#### 4.1 Unit Root Test

In their seminal paper, Pesaran and Shin (1999) & Pesaran, Shin and Smith (2001) argued that the Autoregressive Distributed Lag (ARDL) model/bounds test to cointegration is superior to other cointegration technique; because it does not necessitate the pretesting of variables to ascertain their stationarity properties, as the model can cater for both I(0) and I(1) variables or a combination of both. They further contend that the bounds test gives robust results in the presence of small samples when compared to the Johansen cointegration. Unit root is said to exist when the mean, variance and covariance across different periods are not constant. Such non-stationarity or otherwise of a series can strongly influence the behaviour and properties of the series, as the persistence of shocks will be infinite to the system. Which would finally result in spurious result. Before estimating the bounds test to cointegration the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) test were used to access the stationarity properties of the variables; as show in table 1 below, we established that none of the variables were I(2), as they were either I(1) or I(0).

**Table 1** Unit Root Test Results

Variables	ADF Test	Remarks	PP Test	Remarks
<b>CED</b>	-4.598599 <sup>a</sup>	I(1)	-4.594877 <sup>a</sup>	I(1)
<b>CITAX</b>	-5.891346 <sup>a</sup>	I(0)	-6.180469 <sup>a</sup>	I(0)
<b>PPT</b>	-8.556171 <sup>a</sup>	I(0)	-5.148913 <sup>a</sup>	I(0)
<b>VAT</b>	-5.515788 <sup>a</sup>	I(1)	-5.887781 <sup>a</sup>	I(1)
<b>RGDP</b>	-5.891242 <sup>a</sup>	I(1)	-5.869383 <sup>a</sup>	I(1)

Optimal lag order for ADF and bandwidth for PP tests are determined using the Schwarz Info Criterion a/b/c, indicates significance at 1%, 5% & 10% respectively.

Test includes Trend and Intercept  
 Source: Authors Computation Using Eviews 10+.

**4.2 Autoregressive Distributed Lag (ARDL) Model**

Having previously established the stationary properties of the variables and the adoption of the ARDL model as the right estimation technique. We therefore proceed to estimate equation 1 within the ARDL framework. The general form of an ARDL model can be given as;

**Equation 2**

$$y_t = \mu + \sum_{i=1}^p \gamma_i y_{t-1} + \sum_{j=0}^r \beta_j x_{t-j} + \delta w_t + \varepsilon_t$$

Where  $\varepsilon_t$  is assumed to be serially uncorrelated and homoscedastic

Given our variables of interest in equation (1) above, the ARDL representations are thus specified below;

**Equation 3**

$$\begin{aligned} \Delta RGDP_t = & \alpha_0 + \beta_1 PIT_{t-1} + \beta_2 CIT_{t-1} + \beta_3 VAT_{t-1} + \beta_3 CED_{t-1} + \sum_{j=1}^n \phi_j \Delta RGDP_{t-1} \\ & + \sum_{j=1}^n \phi_i \Delta PIT_{t-1} + \sum_{j=1}^n \lambda_j \Delta CIT_{t-1} + \sum_{j=1}^n \omega_k \Delta VAT + \sum_{j=1}^n \rho_i \Delta \log CED_{t-1} + v_t \end{aligned}$$

Where  $\Delta$  signifies the first difference operator,  $\alpha_0$  is the intercept,  $\beta_1 \beta_2 \beta_3$  are the long-run multipliers.  $\delta, \phi, \lambda, \omega$  and  $\rho$  are short-run parameters and  $v_t$  are white noise errors. This study estimated equation (3) with the bounds test in other to access the long-run relationship. The F-test was used to interpret the existence of a long-run relationship amongst the variables in equation (3).

The F-test was used to interpret the existence of a long-run relationship amongst the variables in equation (3). The null hypothesis of no long-run relationship is tested against the alternate hypotheses of a long-run relationship as shown below;

$$H_0: \alpha = \beta_1 = \beta_2 = 0$$

$$H_1: \alpha \neq \beta_1 \neq \beta_2 \neq 0$$

The bounds test provides for two asymptotic critical value for cointegration when the dependent variables are I(d) (where  $0 \leq d \leq 1$ ): a lower value assuming the regressors are I(0) and an upper value assuming purely I(1) regressors. If the F-statistic is above the upper critical value, the null hypothesis of no long run relationship can be rejected regardless the orders of integration for the time series. Inversely, if the F-statistic falls below the lower critical value, the null hypothesis cannot be rejected. Finally, if the statistic falls between the lower and upper critical values, the result is inconclusive. The approximate critical values for the F-statistic test were obtained from Pesaran *et al* (2001).

**4.3 Bounds Test to Cointegration**

From table 3, using a maximum of one (1) lag length selected based on the Akaike info criterion (AIC), the F-statistic with a value of 9.816980 exceeds the upper critical bound at 10% significance level. We therefore conclude that a cointegrating relationship exists amongst the variables and proceed to estimate the long-run and dynamic short-run models.

**Table 3** ARDL Bounds Test

F-Bounds Test	Null Hypothesis: No levels relationship			
	Value	Signif.	I(0)	I(1)
F-statistic	9.816980	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

a/b/c, indicates significance at 1%, 5% & 10% respectively.

Source: Authors Computation Using Eviews 10+.

#### 4.4 Descriptive Statistics of Data

The analysis of descriptive statistics is hereby performed so as to find out the properties of the data. Table 4 shows the data characteristics including total number of observations, means, standard deviation, skewness, Jarque-Bera statistics and their respective minimum and maximum values of the variables from the period of 1995 to 2019.

From table 4 below, it was observed that the mean values of real GDP (RGDP), company income tax (CITAX), custom and excise duties (CED), petroleum profit tax (PPT) and value added tax (VAT) were 46356.47, 2980.056, 660738.2, 10763.07 and 3654.056. The variability in the distributions as captured by the standard deviation, suggests that RGDP, CED and PPT were slightly dispersed from its mean since its standard deviation value was below its mean, however only CITAX and VAT were found to be highly dispersed, since its standard deviation exceeds its mean value.

Furthermore, the skewness values of RGDP (0.405932), CITAX (2.374593), CED (0.092914), PPT (2.322255) and VAT (2.517654) are positively skewed.

Finally, the Jarque-Bera statistics indicates that the variables TEXP, LAA, LR, RGDP and REER were considered to have a normal distribution since their p-values were above 10% level, only INFR was considered not normally distributed.

**Table 4:** Descriptive Statistics

	RGDP	CITAX	CED	PPT	VAT
Mean	46356.47	2980.056	660738.2	10763.07	3654.056
Median	42922.41	232.5000	241400.0	2198.500	275.5700
Maximum	90521.41	26000.00	1421211.	76667.00	34000.00
Minimum	20353.20	33.30000	37364.00	164.3000	36.90000
Std. Dev.	21508.13	7686.482	559293.0	20921.65	9609.279
Skewness	0.405932	2.374593	0.092914	2.322255	2.517654
Kurtosis	1.969273	6.721074	1.101009	7.079364	7.614440
Jarque-Bera	1.793252	37.91788	3.792393	39.80487	48.59101
Probability	0.407944	0.000000	0.150139	0.000000	0.000000
Sum	1158912.	74501.40	16518456	269076.8	91351.40
Sum Sq. Dev.	1.11E+10	1.42E+09	7.51E+12	1.05E+10	2.22E+09
Observations	25	25	25	25	25

Source: Authors Computation Using Eviews 10+

#### 4.5 Long-Run & Short-Run Estimates

From table 5 below, we find out that CITAX and CED in the long and short-run estimates have a positive impact on RGDP, with the coefficient of CED being significant at a 1% level in the longrun. Furthermore, we observed that PPT and VAT had a negative and insignificant relationship with RGDP; suggesting that a unit increase in PPT would cause a fall in RGDP by 7.9% and 0.7% respectively in the long and short-run periods; while a unit rise in VAT would necessitate a drop in RGDP by 86.5% and 7.6% respectively in the long and short-run periods.

This negative result noticed amongst PPT and VAT running to RGDP suggests that taxes collected from this sources have not being properly utilized in spiking RGDP, various bottlenecks and inefficiency within the system would have resulted in this behaviour noticed.

Furthermore, the estimates of the short-run relationship amongst the variables indicates that the coefficient of the lagged error correction term  $CointEq(-1)$  is of the expected negative sign and significant at 1% level. The coefficient of the error term, -0.088573, indicates that about 8.85% of disequilibrium from previous year's shock in real GDP converges back to the long-run equilibrium within the current year. This indicates a very low speed of adjustment in the model.

#### 4.6 Model Diagnostics

To ensure that the model is correctly specified and to avoid spurious results, it is therefore mandatory to examine for model misspecification which may occur due to unstable parameters and afterward lead to bias estimates. From Table 5, the test statistics with its antecedent p-values > 10% significance level indicates that the model is free from Serial Correlation and Heteroskedasticity Likewise, the Jarque-Bera test statistics (0.198749) indicates that the model residuals are normally distributed.

Furthermore, from Appendix 1, the Durbin-Watson statistics of 2.263767 reaffirms the results of the ARCH test indicating the absence of serial correlation. The standard-error of 0.038301 suggests that on the average 3.83% of the dependent variable cannot be explained by the independent variables. The CUSUM and

CUSUMQ of recursive residuals test as suggested by Brown, Durbin and Evans (1975), were used to access the coefficient stability in the model. From Appendix 2, the plot of the CUSUM and CUSUMQ of recursive residual stability test indicates that all estimated coefficients of the model are stable over the study period since they are within the 5% critical bounds.

**Table 6: Diagnostics**

Diagnostic Test	Test Statistics	P-value
Serial Correlation (Breusch-Godfrey)	0.343460	0.7136
Heteroskedasticity (ARCH)	0.388840	0.6845
Normality (Jarque-Bera)	0.198749	0.9054

Source: Author's Computation Using Eviews 10+

## V. Conclusion and Recommendations

This study examined tax reforms vis-à-vis tax reforms in Nigeria using annual timeseries data spanning 1995 – 2019.

The Augmented Dickey Fuller (ADF) and Philip-Perron (PP) test were used to accessed the stationarity properties of the series; as all series were found to be integrated of order one, I(1) apart from company income tax (CITAX) and petroleum profit tax (PPT) which were levels stationary, I(0).

Furthermore, the long-run and short-run estimations were accessed via the ARDL model developed by Pesaran and Shin (1999) and Pesaran, Shin and Smith (2001), as the bounds test to cointegration reinforced the existence of a long-run relationship amongst the variables

Our findings suggested that from both long and short-run estimations, that a rise in company income tax (CITAX) and customs & excise duties (CED) will trigger a rise in economic growth. While a rise petroleum profit tax (PPT) and value added tax (VAT) will cause a fall in economic growth. Furthermore, the speed of adjustment of economic growth is very slow and significant at a 1% level. From the findings, we therefore recommend that

1. Administrative loopholes within the tax system be plugged as monitoring of companies engaged in petroleum activities be properly monitored to reduce tax evasion; while equaling encouraging activities since value added tax and petroleum profit tax showed negative effect on economic growth.
2. The level of corruption amongst government officials should be reduced to the barest minimum as this would help bolster the confidence of tax payers which will necessitate voluntary tax compliance and ultimately spike an increase in tax revenue.
3. The introduction of the Tax Identification Number (TIN) which is a registration and storage of tax payers' data in Nigeria is a welcomed idea but for it to be successful it should be structured in such a way that will make all potential tax payers liable. Citizens and companies should be able to operate bank accounts only if they have TIN numbers. Government agencies, multinationals, conglomerates and companies in the country should not engage any vendor who does not have a TIN number. This will go a long way in reducing Tax evasion.
4. The tribunal recommended by the Tax Act 1993 should be established to reduce cases of tax evasion and remittance of tax collections Only professionals and trustworthy hands should be responsible for tax administration.

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**Appendix**

**I: Autoregressive Distributed Lag Model**

Dependent Variable: LOG(RGDP)

Method: ARDL

Date: 06/01/20 Time: 15:46

Sample (adjusted): 1996 2019

Included observations: 24 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (1 lag, automatic): LOG(CITAX) LOG(CED) LOG(PPT)

LOG(VAT)

Fixed regressors: C

Number of models evaluated: 16

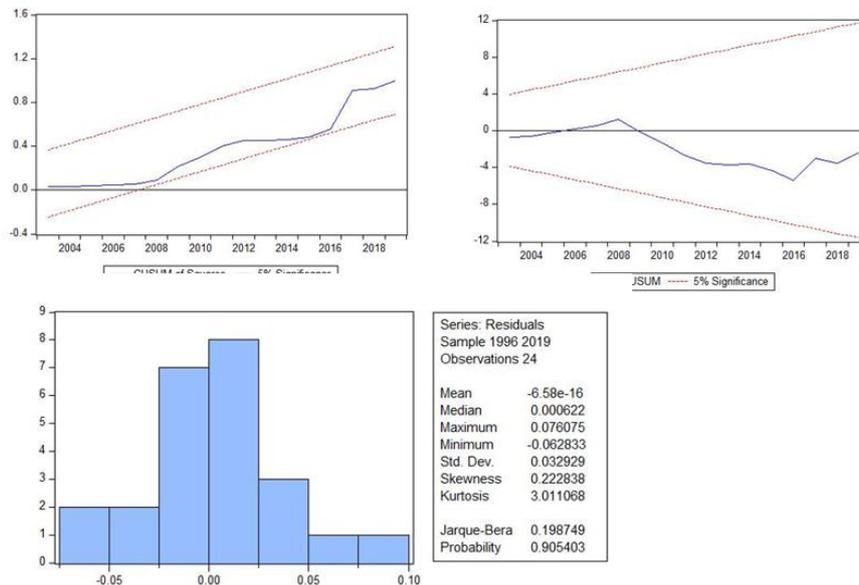
Selected Model: ARDL(1, 0, 1, 0, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOG(RGDP(-1))	0.911427	0.067373	13.52817	0.0000
LOG(CITAX)	0.083355	0.051695	1.612423	0.1253
LOG(CED)	-0.003413	0.027290	-0.125075	0.9019
LOG(CED(-1))	0.042742	0.030726	1.391086	0.1821
LOG(PPT)	-0.007009	0.009545	-0.734337	0.4728
LOG(VAT)	-0.076618	0.049284	-1.554636	0.1385
C	0.532902	0.393900	1.352886	0.1938

R-squared	0.995160	Mean dependent var	10.66424
Adjusted R-squared	0.993451	S.D. dependent var	0.473303
S.E. of regression	0.038301	Akaike info criterion	-3.448176
Sum squared resid	0.024939	Schwarz criterion	-3.104577
Log likelihood	48.37811	Hannan-Quinn criter.	-3.357019
F-statistic	582.5346	Durbin-Watson stat	2.263767
Prob(F-statistic)	0.000000		

**2: Plot of Cumulative Sum and Cumulative Sum of Squares of Recursive Residuals Stability Tests**



**3: Normality Test: Jarque-Bera Statistics**

**4: Heteroskedasticity Test: ARCH**

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F-statistic	0.343460	Prob. F(2,19)	0.7136
Obs*R-squared	0.767628	Prob. Chi-Square(2)	0.6813

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**5: Breusch-Godfrey Serial Correlation LM Test:**  
Null hypothesis: No serial correlation at up to 2 lags

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F-statistic	0.388840	Prob. F(2,15)	0.6845
Obs*R-squared	1.182957	Prob. Chi-Square(2)	0.5535

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