

Short Research Article

BEYOND STATUTORY FEDERAL ALLOCATION: A CRITICAL EVALUATION OF THE CONTRIBUTION OF PERSONAL INCOME TAX ON INTERNALLY GENERATED REVENUE OF BENUE STATE

ABSTRACT

Abstract

Internally generated revenue of the various state governments in Nigeria has consistently been on a decline owing to the neglect of this source of revenue and consequent preference on the statutory federal allocation. This is confirmed by the inability of the various state governments to even pay salaries and provide the basic infrastructural and social needs of its citizens. Considering the foregoing, the study examined the impact of PIT sources on IGR of Benue state government. The research utilized secondary sources of data from the budget office of ministry of finance from 2003 to 2012. The data were analyzed using multiple regression through (Eview statistical package). The Augmented Dicky-fuller test ADF and diagnostic test were carried out to test for data stationarity, multicollinearity and serial correlation. Findings show that PIT contributes significantly to IGR of Benue state during the period under study and hence recommend that the state should improve on these various sources of revenue as it is a genuine source through which the government deficits finances can be solved.

Keyword: *Personal income tax, Internally Generated Revenue, Revenue, Statutory Federal Allocation.*

1. INTRODUCTION

The issue of internally generated revenue has continued to be a burning issue in public domain probably as a result of the evolving challenges faced by the various tiers of government in funding the budget and also providing good life for the citizenry which goes a long way in the stabilization of key indicators of economic growth. This emphasizes the paramount importance of internally generated revenue to the development of developing economies such as Nigeria and Benue state in particular. Tax as a compulsory levy, is a way through which a government generate required revenue from its citizens and other businesses operating within its territories to enable it to obtain the required revenue to finance its activities Akpa,(2008). Internally generated revenues, are the income accrues to the State and Local Government from within as a result of their internal efforts as against to allocations received from the federation account which includes taxes (Pay as You Earn and Direct Assessments), fines and fees, licenses, stamp duties, land registration and survey fees, rents of government properties, interest and repayment/dividends Nassar, and Fasina, (2005).

Akpa,(2008) posits that in the history of Nigeria beginning from the pre-colonial days to date, nothing has generated more constitutional, political and legal controversies and a times fierce clashes other than the issue of sharing and management of national revenue. This condition has provoked series of crisis in Nigeria prominent among is the Niger-Delta region among other crises in Nigeria because of their dispute about the insufficiency of their share of the revenue from oil mineral produced in the region.

There is also consensus in the theoretical literature that the problem with public finance in Nigeria has been that the level of public revenue generated from tax and non-tax sources in recent years which have not been

adequate enough to meet public expenditure of government, especially the State and Local Governments due to the growing space of apportioned services in the various areas of human life and consequent neglect of the IGR by the various states of the federation in Nigeria Akpa (2008).

Uviomo (2009), submits that the internally generated revenue of the various state governments and even the federal government have not been properly harnessed possibly because of the huge foreign exchange earnings from oil revenue and hence less efforts are been made by the various levels of Government in Nigeria to harness the enormous potential of IGR collections from tax revenue. He further argued that our constitution saw the need for dependence on tax revenue for sustainable development when it stipulated in Section 24(f) that it shall be the duty of every citizen to declare his income honestly to appropriate and lawful agencies and pay their tax promptly.

Consequently, it is pertinent to state it is a constitutional duty for every citizen in Benue State and indeed the whole country to pay his tax for the collective growth of the nation considering the overwhelming increase in government responsibility. Considering the foregoing this research sets to evaluate the contribution of personal income tax to internally generated revenue of Benue state, with a view to evaluate the contributions of personal income tax to IGR in Benue state so as to determine whether or not personal income tax revenue is a significant contribution to internally generated revenue.

Sequel to the above, this research hypothesized that there is no significant contribution of personal incomes taxes (PIT) i.e. (PAYE and DIRECT ASSESSMENT) to internally generated revenue in Benue State.

2.2.2 CONCEPT OF PERSONAL INCOME TAX AND THE PIT LAW IN NIGERIA

Income tax was first introduced in Nigeria in 1904 by Lord Lugard. The introduction of Native Revenue ordinance of 1927 was most difficult in the Eastern areas of the country, due mainly to absence of recognized central Authority Resistance to this form of direct taxation in such that it result to riots notably in calabar, Owerri and the famous, Aba women Riot of 1929 which was so severe that it attracted a probe. Beside, the Native Revenue ordinances were also Native direct taxation ordinance for the colony and the Native income tax ordinance Adeogun, (2012). These ordinances were late modified and incorporated into the direct taxation ordinance No 29 of 1940, cap 54 and the income tax ordinance No 29 of 1943 respectively. The direct taxation ordinance 1940 empowered native authorities to tax Africans in their areas of jurisdiction while the income tax ordinance 1943 was for the taxation of non-Africans in companies. The two ordinances were the foundation of our modern taxation which necessitated establishment of board of internal revenue in each of the states of the federation which Enugu Board of internal Revenue is one of them.

Personal income tax is a compulsory levy imposed on employment income and or profit of individuals derived from a trade, business, profession or vocation. The income tax also includes other benefits in kind relating to the employment such as house and cars provided by employers for employees use. Sources of personal income tax include; levy on basic salary, all allowances subject to certain limits, investment income such as dividend, interest, rents ad business income or profit (Akpa, 2011).

PIT is generally collected through the Pay-as-you-Earn (PAYE) and Direct Assessment. PAYE is the levy paid by an employee on whatever income he/she earns from his employment in any particular month at the end of that month. Under this system, the employer deducts the relevant tax from the employee's total earnings including allowances on monthly basis and the employer remits such deductions to the state board of internal revenues Agu, (2011).

On the other hand direct assessment is also a method of collecting PIT that is based on the proportion of the taxable income of self-employed persons from trade, businesses, professions and vocations. The self-employed persons are required on the law to render returns of their annual income at the beginning of each year to the relevant tax authorities, in this case Benue state Board of Internal Revenue Service. The self-evaluation is normally done by the tax payer from which the tax authority calculates the tax liability of the individual or company (Oseni 2013).

In Nigeria the law governing the personal income tax (PIT) is the PIT act (PITA) No. 104 of 1993 as amended. This act currently regulates the taxation of individuals, corporations, sole proprietorship, ad partnerships resident in Nigeria. This act clearly set out the procedure and administrative machinery for the effective and efficient collection of taxes from all the relevant quarters under this act (Ekpe, 2012).

87 The law establishes the joint tax board and saddles it with the responsibility of administering PIT in Nigeria as
88 the apex administrative organ under section 85 of PITA 1993. Section 85a of PITA 1993 provided for the
89 setting up state boards of internal revenue (SBIR) in all the states of the federation with the responsibility of
90 assessing and collecting personal income taxes individuals and corporations resident in the state with the
91 exemption of the members of the armed forces and the police (Olotu, 2012).

92 In Nigeria, the embodiment of rules and regulations relating to tax revenue and the various kind of
93 tax are made by the legislative arms of the government. These laws are constantly subjected to
94 amendment. There is no doubt that the frequency of amendment is a manifestation of
95 inconsistencies and consequently hinders the achievement of the set up goals. However, in an attempt to
96 meet up with the three years policy review as earlier stated and or adjust to the economic dynamism of the
97 country, amendment could equally be made (Nasar and Fasina, 2005).

98 **2.3 BENUE STATE BOARD OF INTERNAL REVENUE IN PERSPECTIVE**

99 Benue state Board of Internal Revenue was established shortly after the creation of Benue from the Benue
100 plateau in 1976 with the primary responsibility of collecting all revenues that are accruable to the state
101 government. The act establishing Benue state board of Internal Revenue was reviewed in 2010. With this
102 review the name was change from Benue State Board of Internal levenue to Benue state internal revenue
103 service (BIRS), the revenue law of 2010 also gave the board more powers to collect both state and local
104 government revenues. Ayabam (2013) states that with the enactment of this law and improvement in staff
105 strength and general working environment the state witnessed massive improvement in the revenue
106 generation from seemingly nothing to over a billion naira monthly.

107 **2.4 EMPIRICAL EVIDENCE**

108 Ronald (1999) studied the impact of local tax and expenditure limitations (TEs) on the level and structure of
109 local government revenue. Using a panel data set on 2955 counties (1962–87), the study demonstrates that
110 TELs decrease the level of property and "other" taxes, but increase the level of miscellaneous revenue,
111 partially offsetting the decrease in taxes. Thus, TELs shift the revenue structure of local government away
112 from taxes and toward miscellaneous revenue. The study however, recommended that more stringent TEL
113 laws eliminate local government's ability to increase the level of miscellaneous revenue to offset the
114 decrease in taxes.

115 Nassar, and Fasina (2005) examined the income profiles of Oyo state government and assessed the
116 personal income tax impact on the income accruable to the state under the constitution of the Federal
117 Republic of Nigeria. Secondary data sought from the approved budgets of Oyo state from years 2000-2006
118 for the study. Stepwise regression technique was used to select the revenue source that has the
119 greatest impact on Internally Generated Revenue (IGR) in the state. Multiple R, R2and R2c were
120 determined to analyze the individual, cumulative relationship and effect of the revenue sources on
121 IGR respectively. Findings indicate that personal income taxes have the highest contribution of 68.4% effect
122 on IGR in Oyo state. Both taxes and licenses jointly accounted for 68.8 %variation in IGR in the
123 state. Hence, any improved strategy on taxes will boost the state IGR The study recommends an improved
124 strategy through the use of Electronic Revenue Assessment, Collection and Monitoring technique
125 together with unique taxpayer personal identification number (UTPIN) database to attract both the self-
126 employed and salary earners into the Personal Income Tax net.

127 Luke and Onuoha (2013) examined the role of internally generated revenues education in Nigeria. The paper
128 discusses the role of Internally Generated Revenue (IGR) as inevitable alternative funding for higher
129 education in Nigeria. The paper leverages on available literatures to revalidate the inevitability of IGR as long
130 as the government (or other university proprietors) fail(s) to provide adequate funding for the universities'
131 operating and capital needs. Developed from the African Political Economy (APE) Model and Resource
132 Dependence Theory perspectives, the paper concludes that IGR has a very significant role to play as a
133 source of critical funding for all categories of universities in Nigeria. The paper, therefore, proposes that, in
134 order to derive sustainable maximum contribution from IGR sources, university managements should seek
135 professional and more efficient ways of developing their IGR initiatives. The paper further recommends that
136 universities should restructure to accommodate an IGR co-ordination office to ensure that creative revenue
137 generating initiatives are not stifled by long bureaucratic bottlenecks. The paper will be critically beneficial to
138 all higher education managers in Nigeria and Africa in general.

139 [(Arial, normal, 10 font, justified) (Detailed instruction about this section is given below. After reading these
140 instructions, please delete this paragraph and begin typing your text here. If you are using copy-paste option

then select 'match destination formatting' in paste option OR use 'paste special' option and select 'unformatted Unicode text' option).

3.2 METHOD OF DATA ANALYSIS

Descriptive statistical tool was used for data analysis, which includes tables while a robust econometric tool for this study is the linear regression model with the equation expressed in line with the hypothesis stated in the foregoing in a null form, that:

H0: there is no significant contribution of personal incomes taxes (PIT) i.e. (PAYE and DIRECT ASSESSMENT) on internally generated revenue in Benue State. The hypothesis will be tested at 5% level of significant.

The regression equation is expressed as thus:

$$Y_t = \alpha + \beta_t X_t + \mu$$

Where:

Y_t = Dependent Variable for time t

A = constant (intercept)

B_t = Coefficient of Independent Variables

X_t = Independent variable for the time period t and

M = error term

However the functional relationship is specified thus:

$$Y_t = f(\text{IGR}) \text{ and } X_t = f(\beta_1 \text{PAYE}_1 + \beta_2 \text{DA}_2 + \beta_3 \text{MR}_3)$$

Stochastically the model is expressed as thus:

$$\text{IGR} = \alpha + \beta_1 \text{PAYE} + \beta_2 \text{DA} + \beta_3 \text{MR} + \mu$$

Where:

IGR = Internally Generated Revenue

PAYE = Pay-As-You-Earn

DA = Direct Assessment

MR = Miscellaneous Revenues

α , β and μ are as defined above.

A priori expectation: $\beta_1 \beta_2 \beta_3 > 0$

This relationship is assumed based on a priori reasoning that there is a relationship between IGR and PIT.

4.1 RESULTS AND DISCUSSION

4.2 UNIT ROOT TEST

In order to determine the stationarity properties of the macro economic variables used in the study, the Augmented Dickey Fuller Test was performed. The unit root results which indicate the order of integration of each of the variables is presented in Table 1 below: underlined)- third level heading.

Table1. Unit Root Test

Variable	ADF Value test statistic	@ Mackinnon Critical value @ 5%	Order of Integration
IGR	-4.809167	-3.259808	1(0)
PAYE	-5.511637	-3.320969	1(0)
DA	-4.345500	-3.259808	1(0)
MR	-5.032975	-3.259808	1(0)

Source: Author's computation 2016.

The results of the Augmented Dickey Fuller Test in the table above revealed that, all the variables are stationary at level and are integrated of order zero. This implies that, no long run information is lost thus, the application of ordinary least squares in the estimation process is therefore appropriate and not likely to yield spurious estimates.

4.3 Diagnostic Tests

To ensure that the data for this study was fit for the model, three (3) diagnostic tests were carried out on the data. These included the Shapiro-Wilk W Test for Normal Data, the Breusch-Pagan/Cook-Weisberg Test for Heteroskedasticity and the Variance Inflation Factor (VIF) Test for Multicollinearity.

Table 2: Result of Shapiro-Wilk W Test for Normal Data

VARIABLE	W	V	Z	P-VALUE	OBS
IGR	0.91853	1.255	0.399	0.34489	10
PAYE	0.82806	2.65	1.856	0.03170	10
DA	0.94314	0.876	-0.223	0.58840	10
MR	0.92434	1.166	0.267	0.39460	10
Source: STATA Output					

Table 2 has shown the P-Values of 0.34489, 0.03170, 0.58840 and 0.39460 for IGR, PAYE, DA and MR respectively. Therefore, the study rejects the null hypothesis that the data were not normally distributed, except for PAYE, which was significant at 3.17 % (P-Value = 0.03170). This indicates validity of IGR, DA and MR data. However, the abnormality of PAYE calls for heteroskedasticity and multicollinearity tests to ascertain whether or not the standard errors of the data values have constant variance and perfect collinearity.

4.3.2 Breusch-Pagan/Cook-Weisberg Test for Heteroskedasticity

Heteroskedasticity is a situation when the standard errors of data have non-constant variance. This makes the standard estimation methods to be inefficient. We conducted the Breusch-Pagan/Cook-Weisberg test to ascertain the existence or otherwise of heteroskedasticity. The test was to test the null hypothesis that there is absence of heteroskedasticity among the standard errors of the data at a 0.05 level of significance. The result of the test was contained in Table 3 below:

VARIABLE	Chi2	P-VALUE
Fitted Values of IGR	3.24	0.0718
Source: STATA Output		

Table 3 has shown that the fitted values of IGR have a Chi2 of 3.24 with the P-value of 0.0718. Therefore, the study accepted the null hypothesis that there is absence of heteroskedasticity among the standard errors of the fitted values of IGR and concludes that data values for the study are homoscedastic. please delete

4.3.3 VARIANCE INFLATION FACTOR (VIF) TEST FOR MULTICOLLINEARITY.

Multicollinearity is a situation where there is high correlation between independent variables. If $VIF = 1$, the set of independent variables is uncorrelated, while if $VIF > 5$, the set of independent variables is highly inter-correlated (Gelman & Hill, 2007). The Variance Inflation Factor (VIF) was conducted to ascertain the existence or otherwise of multicollinearity between independent variables of the study. The result of the VIF test was contained in Table 4 below:

TABLE: 4 VARIANCE INFLATION FACTOR (VIF)

VARIABLE	VIF	TOLERANCE (1/VIF)
PAYE	3.03	0.329573
DA	1.98	0.505259
MR	4.21	0.237742
MEAN VIF	3.07	
Source: STATA Output		

Table 4 shows the $VIF < 5$ in all the dependent variables of 3.03, 1.98 and 4.21 for PAYE, DA and MR respectively with the mean VIF of 3.07. The tolerance levels also were greater than 0.10 in all the cases. This result has shown that there was absence of perfect multicollinearity between the independent variables, indicating the fitness of the model. independent

4.3 REGRESSION ANALYSIS

Following the result of the ADF above, the study adopts the technique of ordinary least squares for the regression analysis. This is based on the premise that, all the variables in the data set are stationary and can yield best linear unbiased estimates.

Table 5: Impact of Personal Income Tax on Internally Generated Revenue in Benue State (Ordinary Least Squares Technique)

Dependent Variable	Explanatory Variable	Coefficient	Std. Error	t-Statistic	Prob.
IGR	PAYEE	1.052645	0.208208	5.055737	0.0007
	DA	4.001030	0.804379	4.974061	0.0019
	MR	0.959057	0.314586	3.048632	0.0241
	C	2.051700	0.592083	3.465224	0.0142

Authors computation 2016

C 2.051700 0.592083 3.465224 0.0142

R² = 0.74 D.W = 2.16 F-Statistic = 14.19 Prob. (F-Stats) = 0.0000

The regression result in the table above revealed that, all the variables passed the t-test at the 5% level of significance. The results also showed that all the variables are positive and correctly signed. The positive impact of PAYE showed that, PAYE has a positive relationship with IGR. A unit change in PAYE affects IGR by 1.052645. Also, a unit change in DA and MR have a positive effect to the IGR. A unit change in DA and MR will affect IGR by 4.001030 and 0.959057 respectively.

An adjusted R² of 0.74 showed that 74 percent of the systematic variations in the Internal generated revenue (IGR) is influenced by the combined effect of the explanatory variables put together. The robustness of this result is further buttressed by an F-statistic of 14.19 while the Durbin-Watson Statistic of 2.16 clearly indicated the rear absence of autocorrelation. An estimated probability values (Prob. (F-stats)) of 0.0000 is significant enough to conclude that, the model has performed well data

TEST OF HYPOTHESIS

Test of Hypothesis

The two null hypotheses of study which states that; "There is no significant relationship between PAYE and IGR in Benue State" and between DA and IGR were tested using the probability value approach.

Decision Rule: Reject the null hypothesis if the probability value is less than the significance level (Prob. <α).

Decision: Testing at 5% level of significance (0.05), the two null hypotheses of the study are rejected in favour of the alternatives since the overall probability value of the model (0.0000) is less than the 5% (alpha level) level of significance. We therefore conclude that, both PAYE and DA have significant relationship with IGR.

4.4 DISCUSSION OF FINDINGS

The study employed regression analysis as the econometric tool for data analysis of the model. For avoidance of spurious estimates, all the variables were subjected to unit root testing in order to ascertain the stationary properties of the data set. Upon estimation, the study found out that, all the variables were stationary at level and integrated of order zero I (0), this satisfied the assumption of OLS. The study therefore performed OLS and found a positive relationship between PAYE and IGR implying that, an increase in the PAYE will increase IGR of the State. Similarly, a positive relationship exists between DA and IGR. An increase in it will also lead to increases in the IGR. On the whole, the fitness of the model is good as evidenced by high value of the adjusted R squared and confirmed by a high F-statistic. Considering the regression results resented in the foregoing, it can be rightly concluded that if the various states in Nigeria harness personal income revenue sources effectively and efficiently by blocking the linkages, and also harness the enormous untapped PIT sources in the private sector, the states will surely generate sufficient revenue to be self sufficient. This findings are also in consonance with some the empirical studies reviewed in the foregoing. See (Nassar, and Fasina, 2005)

5.1 Conclusion and Policy Recommendation

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5.2 Conclusion

Based on the empirical findings the study concludes that the various sources of internally generated revenue in the state significantly contribute to IGR and should be considered seriousl.

5.3Policy Recommendation

The study recommend that since the end of fluctuations in the oil price which characterise the oil market is not in sight the state should build and maintain the culture of sustainable revenue drive to enable it provide the desired services and development to its citizenry. Why government takes step to address the perennial annual budget deficits and tax gap, the citizens should wake up to their civic responsibilities in terms of tax compliance.

The government should intensify it efforts in harnessing the enormous tax revenues in the state and should also resolve the inequitable tax which is one of the major problems in taxation Considering the findings as

indicated in the empirical results above that PIT contributed significantly on IGR in the state during the study period, the study concludes and that diversification of revenue sources for economic development is extremely important as against focusing on the oil revenues if Benue and Nigeria in general must be among equals in the improvement of the lives of her citizens through the provision of the basic social responsibilities as the focus on revenue from oil and gas amounts to putting all her eggs in one basket.

Government should not only create an enabling environment for business establishment but also give all necessary support for its survival because profits of businesses are one of the major sources of tax revenue. Benue State Internal revenue Service should put in place vibrant and effective enforcement machineries which include among other things, adequate manpower, computers and effective postal and communication system. This among other issues call for the autonomy of tax administration which the system had long been yearning for. Tax administration requires highly trained personnel to match up with the sophistication of tax evasion with the use of modern technology. This is because increase tax revenue is a function of effective enforcement strategy which is the pure responsibility of tax administrators hence the need to effectively enforce the relevant tax laws for effective revenue generation.

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341 Appendix I Raw Data for IGR, PAYEE

342 Appendix I Raw Data for IGR, PAYEE

YEAR	IGR	PAYEE	DA	MR
2003	19718357612.45	980439592.02	25726348.92	18712191671.51
2004	24815345707.12	1003048280.64	28015590.43	23784281836.05
2005	26379482113.53	1058944326.54	55472580.99	25265065206.00
2006	23891663472.39	1110349486.41	89936448.55	22691377537.43
2007	28555292472.02	1210305463.16	13632999.18	27331354009.68
2008	46288852873.73	875390899.99	172058271.33	45241403702.41
2009	44537575292.91	2100866475.00	202667692.00	42234041125.91
2010	52630728654.94	2243718146.69	51794290.72	50335216217.53
2011	70780101870.00	2837031718.80	286943384.20	67656126767.00
2012	63263709079.00	7386813224	28010590.43	55848885264.57

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Variable	Coefficient	Std Error		Prob.
PAYEE	1.052645	0.208208	5.055737	0.0007
DA	4.001030	0.804379	4.974061	0.0019

MR	0.959057	0.314586	3.048632	0.0241
C	2.051700	0.592083	3.465224	0.0142
R-squared	0.796707	Mean dependent var		24.32251
Adjusted R-squared	0.749560	S.D. dependent var		0.452696
S.E. of regression	0.009494	Akaike Info criterion		-6.187221
Sum squared resid	0.000541	Schwarz criterion		-6.066187
Log likelihood	34.93610	Hannan-Quinn enter.		-6.319995
F-statistic	14.19360	Durbin-Watson stat		2.160387
Prob(F-statistic)	0.000000			

Null Hypothesis: IGR has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC. maxlag = 1)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.809167	0.0059
Test critical values:	1 % level	-4.420595	
	5% level	-3.259808	
	10% level	-2.771129	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IGR(-1)	-0.132551	0.163811	-	0.4450
C	3.345424	0.809167		
		3.974893		0.4278
		0.841639		
R-squared	0.085535	Mean dependent var		0.129529
Adjusted R-squared	-0.045102	S.D. dependent var		0.196945
S.E. of regression	0.201337	Akaike info criterion		-0.174539
Sum squared resid	0.283757	Schwarz criterion		-0.130711
Log likelihood	2.785424	Hannan-Quinn criter.		-0.269119
F-statistic	0.654752	Durbin-Watson stat		2.215894
Prob(F-statistic)	0.445047			

360 Null Hypothesis: PAYEE has a unit root
 361 Exogenous: Constant
 362 Lag Length: 1 (Automatic – based on SIC, maxlag = 1
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	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.511637	0.0065
Test critical values: 1% level	-4.582648	
5% level	-3.320969	
10% level	-2.801384	

364 *MacKinnon (1996) one-sided p-values.
 365 Warning: Probabilities and critical values calculated for 20 observations and may not be accurate
 366 for a sample size of 8
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368 Augmented Dickey-Fuller Test Equation
 369 Dependent Variable: D(PAYEE)
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Variable	Coefficient	Std. Error	t-Statistic	Prob.
PAYEE(-1)	0.681855	0.451071		0.1910
		1.511637		
D(PAYEE(-1))	-0.882750	0.588988	-	0.1942
		1.498759		
C	-14.00346	9.459922	-	0.1989
		1.480293		
R-squared	0.359902	Mean dependent var		0.249582
Adjusted R-squared	0.103862	S.D. dependent var		0.440897
S.E. of regression	0.417373	Akaike info criterion		1.370324
Sum squared resid	0.871001	Schwarz criterion		1.400114
Log likelihood	-2.481295	Hannan-Quinn criter.		1.169398
F-statistic	1.405650	Durbin-Watson stat		2.623452
Prob(F-statistic)	0.327806			

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 373 Null Hypothesis: DA has a unit root Exogenous: Constant
 374 Lag Length: 0 (Automatic - based on SIC, max lag=1
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	t-Statistic	Prob*
Augmented Dickey-Fuller test statistic	-4.545500	0.0143
Test critical values: 1% level	-4.420595	
5% level	-3.259808	
10% level	-2.771129	

376 *MacKinnon (1996) one-sided p-values.

377 Augmented Dickey-Fuller Test Equation
 378 Dependent Variable: D(DA)
 379 Method: Least Squares
 380 Date:04/21/16 Time: 18:07
 381 Sample (adjusted): 2003 2012
 382 Included observations: 9 after adjustments
 383

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DA(-1)	-1.221393	0.365085	-3.345500	0.0123
C	22.00990	6.585843	3.342002	0.0124
R-squared	0.615223	Mean dependent var		0.009452
Adjusted R-squared	0.560255	S.D. dependent var		1.617346
S.E. of regression	1.072515	Akaike Info criterion		3.171019
Sum squared resid	8.052015	Schwarz criterion		3.214847
Log likelihood	-12.26959	Flannan-Qulnn enter.		3.076439
F-statistic	11.19237	Durbin-\Natson stat		2.063794
Prob(F-statistic)	0.012326			

384
 385

386 Null Hypothesis: MR has a unit root Exogenous: Constant
 387 Lag Length: 0 (Automatic - based on SIC. -narfag=11
 388

	t-Statistic	Prob*
Augmented Dickey-Fuller test statistic	-5.032975	0.0105
Test critical values: 1% level	-4.420595	
5% level	-3.259808	
10% level	-2.771129	

389 *MacKinnon (1996) one-sided p-values.

390 Augmented Dickey-Fuller Test Equation
 391 Dependent Variable: D(MR)
 392 Method: Least Squares
 393 Date:04/21/16 Time: 18:08
 394 Sample (adjusted): 2003 2012
 395 Included observations: 9 after adjustments
 396

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MR(-1)	-0.183189	0.177341	-1.032975	0.3360
C	4.557823	4.295330	1.061111	0.3239
R-squared	0.132271	Mean dependent var		0.121497
Adjusted R-squared	0.008310	S.D. dependent var		0.220295
S.E. of regression	0.219377	Akaike info criterion		-0.002916
Sum squared resid	0.336885	Schwarz criterion		0.040912
Log likelihood	2.013123	Hannan-Quinn enter.		-0.097496
F-statistic	1.067038	Durbin-Watson stat		2.188666
Prob(F-statistic)	0.335978			

397 **DEFINITIONS, ACRONYMS, ABBREVIATIONS**
 398 IGR: Internally Generated Revenue
 399 PIT: Personal Income Tax
 400
 401