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THE EFFECT OF GOVERNANCE ON GROWTH OF SHADOW ECONOMY IN WEST AFRICA

Abiodun Samuel ISAYOMI[1], Temitope Sade AKINTUNDE[2]
[1] Osun State University, Oke Bale Street, Area 21000, Osogbo, Nigeria, Email: abiodun.isayomi@uniosun.edu.ng
[2]Department Economics, Osun State University, Area 210001, Oke Bale Street, Osogbo, Tel: +2348032298882, Email: temitope.akintunde@uniosun.edu.ng

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Abstract

Engagement in shadow economy activities doubles as a survival strategy against distortional government interventions resulting in unfavourable socioeconomic conditions and as an impediment to growth and development in developing economies. This study provides scientific evidence of the aspects of governance which minimize the size of the shadow economies of 15 West African countries from 1996 to 2019 using panel autoregressive distributed lag (pooled mean group estimator). Shadow economy (% of GDP) was used as the dependent variable while control of corruption; government effectiveness; voice and accountability; regulatory quality, rule of law and political stability were the used as measures of governance. The result revealed significant long run effect of all the measures of governance (except government effectiveness) on the size of shadow economy in West Africa. However, only control of corruption and rule of law were found to have significant negative effect on the size of shadow economy in West Africa.

Keywords: *shadow economy; governance; socioeconomic condition; West Africa.*

JEL Classification: O17

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1. Introduction

The complex nature of modern economies and economic history of developed countries tout governance as an important requirement for economic growth and development. Consequently, modern economies often strive to ensure that public institutions, policies and regulations corroborate market mechanism for achievement of set socioeconomic objectives. However, most developing countries are usually characterized by underdeveloped public institutions whose distortional intervention often results in inhumane socioeconomic conditions for the underprivileged majority. Consequently, the less privileged majority resort to shadow economic activities for economic survival. According to Medina and Schneider (2018) the shadow economy encompasses economic activities which are concealed from official authorities for monetary, regulatory and institutional reasons such as avoidance of taxation and social security contribution; government bureaucracy and weak contract enforcement laws.

Although existence of shadow economies is a global challenge, shadow economies in developing countries are usually larger than shadow economies in developing counterparts (Vo and Ly 2014; Medina and Schneider, 2018). Despite serving as a survival strategy for the less privileged majority in developing countries; large shadow economy may have adverse effect on the economy as growing shadow economy may weaken the ability of governments to positively influence the economy. For instance, increasing shadow economy may reduce tax revenue which may in turn result in shortage of public goods and services required for socioeconomic development. In order to meet up with its responsibilities, government may be forced to increase tax paid by firms who operate in the official economy. Thereby, increasing the transaction cost and reducing the competitiveness of such firms (Schneider, 2010). Similarly, the concealed nature of shadow economic activities excludes firms who operate in the shadow economy from beneficial government intervention which may aid their expansion and growth. In sum, large shadow economies result in a lose-lose situation in which an economy fails to develop due to inefficient utilization of available resources. Since governance is a multidimensional phenomenon, it is pertinent to investigate the aspects of governance which influence the size of shadow economy.

Empirical studies have been conducted using different methodologies to analyse the effect of governance and non-governance factors on the growth and size of shadow economy in different countries and regions of the world (Schneider 2010; Wibowo and Indrayanti, 2020; Fapohunda 2013; Adriana 2014; Mahzar

Annals of Spiru Haret University.
Economic Series
Since 2000
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2014). However, extant studies are yet to reach a consensus on the effect of governance on the size of shadow economy. Besides, studies on focusing on the effect governance on shadow economy in West African countries are relatively scarce. Consequently, this study investigate the effect of six aspects of governance (control of corruption, rule of law, political stability, regulatory quality, government effectiveness and voice and accountability) on the size of shadow economy in West African countries. This follows the neoclassical theoretical perspectives to growth of shadow economy which viewed engagement in shadow economic activities as an ingenuous way to circumvent distortional government intervention in the economy.

This study offers valuable contribution to the extant literature by investigating the effect of different aspects of governance (control of corruption, rule of law, political stability, regulatory quality, and voice and accountability) on the size shadow economy in 15 West African countries from 1996 to 2019 using the Panel-ARDL pooled mean group estimation technique. The empirical evidence from this study reveals control of corruption, rule of law, political stability, regulatory quality, and voice and accountability as statistical significant long-run determinant of the size of shadow economy in West African countries. The subsequent sections are organized as follows. Section two presents reviewed literature. Section three focuses on research methodology. Section four presents results and discussion while section five focuses on conclusion and recommendation.

2. Literature Review

2.1 Related Theoretical Review

Several theoretical perspectives exist on the expansion of the shadow economy; however these theories fit into three main stream theoretical perspectives namely dependency perspective, modernization perspective and neoclassical perspective. The three theoretical perspective viewed shadow economy from different perspective, thereby providing different explanations for its expansion.

2.1.1 Modernist Theoretical Perspective

The modernist theoretical perspective viewed shadow economy as a temporary phenomenon which diminishes with the modernization of an economy. Although, different in analogy Harris-Todaro theory of migration and unemployment and Arthur Lewis theory of unlimited supplies of labour are prominent modernist perspectives to growth of shadow economy. The duo recognizes the existence of a dual economy with relatively developed modern sector and an underdeveloped

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Economic Series
Since 2000
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traditional sector with surplus unskilled labour (Jhingan 2011). The high income obtainable in the modern sector attracts labour from the traditional sector to the modern sector which however fails provide sufficient employment due to slow rate of industrialization and development (Chaudhuri 2000). Implicit in the modernist perspective is the notion that shadow economy is an ephemera challenge of developing countries which will disappears as such economies progress. However, shadow economy has been increasing in developing and developed countries (Jütting and Laiglesia, 2009; Rothernberg et al 2016). Similarly, shadow economy has been found to grow with the development of the formal economy (Heintz and Pollin 2003). This suggests that shadow economy and formal economy are more of complements rather than substitutes (Huang et al. 2020).

2.1.2 The Dependency Theoretical Perspective

The dependency theoretical perspective viewed the expansion of shadow economy in developing countries as a deliberate creation of the developed capitalist countries for the perpetual exploitation of the underdeveloped countries (Sassen 2019). According to the neo-colonial dependence faction of the dependency theory informality and underdevelopment persisted in developing countries due to unequal power relations between developed and developing countries (Todaro and smith 2015). Such parasitic relationship increase informality in developing countries through pro-capitalist doctrine of globalisation (Sahu 2010; Meagher 2016). This unequal power relations are preserved by developing countries elites who inhibit genuine pro-masses reforms for personal reward from developed countries controlled international capitalist organizations (Leys 1975). The false paradigm faction of dependency theoretical perspective attributed expansion of shadow economy and underdevelopment in developing countries to application of unsuitable and complex developed-economy models which leads to misleading and inappropriate policies (Todaro and Smith 2015). In sum, dependency theoretical perspectives assume that shadow economy is directly linked to the official economy (Amara 2016). This implies that the growth of shadow economic activities is required for the growth of the official modern capitalist economies. (Williams and Round 2007)

2.1.3 The Neoclassical Theoretical Perspective

The neoclassical theoretical perspective focused on the effects of government intervention in the economy and the response of economic agents to such

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intervention (Maloney 2004). The motivation of economic units to participate in the shadow economy emanates from anti-market government intervention which increases the burden of institutional cost (Gindling 2013). Thus, the neoliberal perspective sees the growth of shadow economy as a response of free market forces to distortional government intervention. This perspective sees participation in the informal economy as ingenuous, rational and industrious way participants in the shadow economy use to create income opportunities and alleviate their poverty in the face of high cost of legality. In support of the neoliberal perspective, empirical studies shows that countries with a higher tax burden or heavier regulations (such as time-consuming business registration, high-cost labor regulation) tend to have a higher share of informal economy in their total GDP (Jonasson 2012).

2.2 Related Empirical Review

Comprehensive studies exist on the effect of governance on the size of shadow economy. Torgler and Schneider (2007) analysed the effect of institutional quality and tax morale on the shadow economy with panel and time series data of countries. Analysing more than 25 measures of governance and institutional quality using pooled ordinary least squares regression and fixed effect regression models, their findings revealed a positive relationship between institutional quality and shadow economy and a negative relationship between tax morale and shadow economy. Remeikienė et al. (2014) investigated the country-level determinant of shadow economy that has the strongest impact on the scope of shadow economy in Greece between 2005 and 2013 using simple and multiple regression analysis. The finding of the study reveals that tax rate is the strongest country-level determinant of shadow economy in Greece during the study period. The authors suggested a review of the tax rate in order to discourage economic agents from participating in the shadow economy.

Wibowo and Indrayanti (2020) analysed the effect of institutional variable of governance on shadow economy in seven developing ASEAN countries using multiple regression technique. The empirical findings from the study revealed that voice and accountability; political stability; government effectiveness and control of corruption are significant and negatively related to shadow economy; regulatory quality has a positive and significant effect on the amount of shadow economy. Rule of law has no significant effect on shadow economy. The result of the study suggests bureaucratic/institutional reforms, recruitment of human resources, transparency in the management of government budgets and taxation system with the help of information technology, and non-conflicting regulations for minimization of the informal sector.

Annals of Spiru Haret University.
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Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Luong et al. (2020) investigated the interactions between rule of law, economic growth and the shadow economy in 18 selected transition economies from 2002 to 2015 using GMM method. The empirical findings reveals a statistically significant negative impact of economic growth on shadow economy and a negative relationship between the size of shadow economy and the quality of rule of law in transition economies. The study recommends improvement of the quality of rule of law and growth for the reduction of shadow economy. Bayar et al (2018) studied the effect of corruption and rule of law on shadow economy in 11 transition economies in Central and Eastern Europe using panel co integration and causality test which takes care of heterogeneity and cross section dependence. The findings of the study reveal complementarity between corruption and the size of the shadow economy and a bilateral causality between control of corruption and shadow economy in the studied countries. However bidirectional causality was discovered between rule of law and shadow economy in some of the studied countries.

Heinemann and Schneider (2011) studied the possible impact of overall degree of religiosity; specific impact of different religions; proximity between religion and the state on the shadow economy by analysing cross-sectional data of 162 countries using ordinary least square regression analysis. The result from the study suggested that summary measures of general religiosity or indicators of religious competition do not have significant impact on shadow economy but a difference in dominant religion does. Islam or Eastern religions dominated countries are found to have smaller shadow economies than Christianity dominated countries. Furthermore, countries which combine governance with religion are found to have smaller shadow economies. They opined that this may be due to the potency of normative influence of religion in protecting state interest.

Kar and Saha (2012) investigated whether the claim by recent Latin American studies that increase in the size of informal economy reduces the harmful effect of corruption on inequality is applicable to developing countries in Asia where corruption, inequality and shadow economy are enormous. Using Panel Least Square and Fixed Effects Models for the estimation of the data of 19 countries in Asia, their findings shows that corruption increases inequality in the absence of the shadow economy but reduces inequality in the presence of larger shadow economies. This shows that corruption and shadow economy have a negative interaction effect on inequality. The empirical findings of other studies also reveal complementarities between corruption and shadow economy (Borlea et al. 2017; Dreher and Scheider 2010, Wibowo and Indrayanti 2020). Results from Dreher et al. (2009) however reveals that shadow economy and corruption are substitutes.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Mazhar (2014) analysed the effects of regulatory discretion on shadow economy using panel data of 162 countries from 1999 to 2007. Using Arellano-Bond estimator to investigate the dynamics and causal effect of the relationship the result of the study revealed that increase in regulation increases the size of the shadow economies. Enste (2010) studied the impact of density of regulations on the size of shadow economy in 25 OECD countries for the time period 1995-2005. The empirical findings reveals labour and product market regulations, overall regulations and poor quality of official public institutions and administration as the main causes for the development of the size of shadow economies.

Saputra and Nugroho (2013) studied the determinants that have significant influence on the shadow economy for BRICS countries and Indonesia by analysing panel data for 6 countries using estimated generalised least square panel data analysis. The findings of the study shows that the performance of government, intensity of regulatory economic framework, tax burden significantly affects shadow economy. Furthermore, the result suggests that Indonesia has relatively good performance in the key determinants of shadow economy compared with BRICS Countries. Gasparenien et al. (2016) investigated the impact of shadow economy determinants on the size of shadow economy in Ukraine from 2005 to 2012 using multiple regression analysis. The result of the study reveals that tax rate, overall employment rate, import of goods and services, GDP and participation of working-age people in the labour market explains 99% of the changes in shadow economy in Ukraine. Furthermore, the overall employment rate has a bidirectional impact on the scope of shadow economy in Ukraine, hired work increases the opportunities to earn legal wages, but probability of paying illegal wages is still high.

Fapohunda (2013) examined the role of the informal sector in combating the menace of unemployment in Nigeria; the extent to which government policies and programmes have facilitated the sector, and how informal sector enterprises and settlements can be upgraded and progressively integrated into the urban development mainstream. The study was carried out using desk and literature review of relevant articles, publications, web-based research as well as Federal Office of Statistics data on efforts and policies of the Nigerian government aimed at enhancing the performance of the informal sector. Government has developed policies and programmes to combat the menace with little impact. The study suggested improved access to credit and other resources, education and training as well as leadership and organisation as the best way to maximize informal sector ability to alleviate unemployment and eventual integration into the formal sector.

Adriana (2014) investigated the relationship between the size of the shadow economy and the unemployment rates in Romania quarterly data from 2000 to 2010 using Toda-Yamamoto approach, multivariate co-integration and vector error correction models (VECM). The Toda-Yamamoto causality test results, suggest a strong evidence of causality running from the unemployment rates to the shadow economy when a sufficiently high lag order is selected. The VECM models which analyse shadow economy using the currency demand approach reveals a general downward trend in size of informal sector for the study period.

Bracco and Onnis (2016) investigated the effects of immigration and immigration amnesties on the shadow economy in Italy from 1995 to 2006 using two stage least square and ordinary least squares regression. The result of the study reveals a strong correlation between the official measures of shadow economy and a significant positive relationship between immigrant population, propensity to evade tax, overall share of the shadow economy, and share of irregular jobs. Ocran (2018) estimated the size and trends of the informal sector in Ghana from 1960 to 2008 using the Tanzi currency demand approach as analytical framework for the assessment. The model for the study was estimated using ordinary least squares technique. The result of the study shows that the size of the informal economy in Ghana has been increasing over the past four decades. Specifically, the size has doubled from the 14% of GDP in 1960 to 30% by 2004. Thus, there has been an upward trend. For shrinking of the informal sector, the study suggested, the use of presumptive tax schemes due to its collection simplicity, economy and less burdensome implementation. Beyond the desire of incorporating the informal sector into the tax net, the study also suggest provision of infrastructural and technical support to informal sector organizations.

Generally, only few of the empirical evidences focused on the effect of all key aspects of governance on the size of shadow economy. The few available evidences discovered different effects of different aspects of governance on the size of shadow economy. Furthermore empirical evidences on the effect of governance on the size of shadow economy in West African countries are relatively scarce. From this perspective this study will contribute to the literature by examining the effect of key aspects of governance on the size of shadow economy in West African countries. This study will also test the applicability of neoclassical theoretical perspective on the growth of shadow economy.

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Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

3. Methodology

3.1 Data Description and Sources

This study analysed annual panel data of 15 West African countries from 1996 to 2019. Specifically, the West African countries studied are Nigeria, Benin, Burkina Faso, Ghana, Gambia, Guinea, Guinea Bissau, Ivory Coast, Liberia, Mali, Mauritania, Niger, Senegal, Sierra Leone and Togo. Study period and country selection was based on data availability. Panel study is opted for due to its appropriateness in addressing the study objective and its ability to circumvent data shortage challenges common to developing countries. The data analysed were sourced from Medina and Schneider (2018) and World Governance Indicators. The dependent variable, shadow economy % of gross domestic product (SHA) measures the share of legal economic and productive activities which contributes to gross domestic product but are concealed from government records (excluding illegal or criminal activities, do-it-yourself or other household activities).

The descriptions of aspects of governance studied are given as follows. Control of corruption (COR) measures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests. Government effectiveness (EFF) measures the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Political stability measures the likelihood of political instability and/or politically-motivated violence, including terrorism.

Regulatory quality (REG) measures the Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Voice and accountability (ACC) measures the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Rule of law (LAW) measures the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

3.2 Model Specification

A framework of analysis to determine the effect of governance on the size of shadow economy in West African countries is developed by including control of corruption, government effectiveness, political stability, regulatory quality, voice and accountability and rule of law as explanatory variables in the estimation model.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Although literature records other factors such as religion, inequality and access to credit as determinants of shadow economy size, we exclude these factors following the neoclassical theoretical perspective that anti-market government intervention drives the growth of shadow economy. The specified equation for shadow economy is as follows

$$SHA_{it} = \beta_0 + \beta_1 COR_{it} + \beta_2 EFF + \beta_3 STA_{it} + \beta_4 REG_{it} + \beta_5 ACC_{it} + \beta_5 LAW_{it} + e_{it} \ldots . (1)$$

In generalized Panel ARDL (p, q, q…q) specifically with the Pooled Mean Group form we have;

$$\Delta Y_{it} = \theta_i \left[Y_{i,t-1} - \lambda_i' X_{i,t} \right] + \sum_{j=1}^{p-1} \delta_{ij} \Delta Y_{i,t-j} + \sum_{j=0}^{q-1} \beta'_{ij} \Delta X_{i,t-j} + \varphi_i + e_{it}$$

Where:

$Y_{it}: is the dependent variable\ (SHA)$

$\theta_i: group - specific speed of adjustment coefficient\ (expected to be < 0)$

$\left[Y_{i,t-1} - \lambda_i' X_{i,t} \right] = error\ correction\ term$

$X_{it}: independent variables\ (COR, EFF, STA, REG, ACC, LAW)$

$\delta_{ij}: is the coefficient of the lagged dependent variable$

$\beta'_{ij}, \delta_{ij}:$ are short-run dynamic coefficients

$\lambda_i': vector of long run relationships$

$\varphi_i: unit\ specific\ fixed\ effects$

$p, q: are\ optimal\ lag\ orders$

$i: number from\ 1 \ldots N$

$t: number from\ 1 \ldots T$

$e_{it}: error\ term$

3.3 A priori Expectation

Theoretically, it is expected that control of corruption; government effectiveness; political instability and absence of violence/terrorism; regulatory quality; voice and accountability and rule of law would have negative effect on the size of shadow economy in West Africa.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

3.4 Estimation Technique

The pooled mean Group (PMG) technique is used to estimate the specified panel autoregressive distributed lag model (ARDL model). This method is an intermediated estimation technique which assumes short-run group specific intercepts, coefficients and error variances, and restricts long run coefficients to be homogeneous across the study groups. The Pooled mean group technique is intermediate in that it combines the averaging feature of mean group (MG) estimation technique which allows both long-run and short run estimates to vary across groups and the pooling feature of dynamic fixed effect technique (DFE) which restricts long run and short run slope coefficients and error variances to be the same (Pesaran et al.1999).

Pesaran et al. (1999) assumes that all the variables in panel ARDL model is either integrated of order one [I(0)] and order two [I(1)] and imperfectly correlated. The error correction estimate is expected to be negative and statistically significant. However scholars are divided as to whether the maximum absolute value of ECT should be 1 or 2. According to Olarewaju et al (2017) the ECT must be less than 1, negative and significant. Conversely, Loayza and Lanciere (2004) opined that absolute value of the ECT must be negative and not exceed 2. Narayan and Smyth (2006) however concluded that an ECT absolute value between 1 and 2 suggests an error correction process which rapidly converges to equilibrium path after fluctuating around the long run value in a dampening manner.

The Im-Pesaran-Shin (IPS) and Breitung panel unit-root tests are used to ensure that the variables in the study are either integerated of order zero [I(0)] or [I(1)]. Given the number of observations (T) and number of cross sections (N) Pesaran cross sectional dependency test is used to test for cross-sectional dependence which are usually common with panel data. We also estimated the correlation matrix for the variables to ensure that no two variables in our model are perfectly correlated. The optimal lag structure of the model is automatically chosen using Akaike Information Criterion.

4. Results and Discussion

4.1 Descriptive Statistics

Descriptive statistics is employed to reveal the descriptive properties of the variables used in this study. The result of the descriptive statistics for each of the variables are illustrated in Table 1 below

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900
Issue 4/2021

Table 1: Descriptive Statistics

	SHA	COR	EFF	STA	REG	ACC	LAW
Mean	40.69195	-0.711527	-0.842192	-0.598946	-0.645070	-0.469064	-0.744581
Median	40.24000	-0.720858	-0.857168	-0.435910	-0.605752	-0.450000	-0.722409
Maximum	62.33000	0.176479	0.160328	1.048930	0.338653	0.597521	0.154609
Minimum	20.26175	-1.701552	-1.884888	-2.436677	-2.023813	-1.553702	-2.008507
Std. Dev.	7.512383	0.368187	0.418549	0.737407	0.384744	0.517401	0.452766
Jarque-Bera	4.035560	2.825519	7.411881	21.46730	11.20532	13.45053	5.325711
	(0.132950)	(0.243470)	(0.024577)	(0.000022)	(0.003688)	(0.001200)	(0.069749)
Observations	360	360	360	360	360	360	360

Source: Authors' computation using E-view 10 (2021)

As shown in Table 1 above, the mean and median values of corruption control (COR), government effectiveness (EFF), political stability (STA), regulatory quality (REG), rule of law (LAW) and accountability (ACC) are all negative values. Furthermore, the maximum values of all the governance indicators except political stability (STA) are below 1. Given a possible minimum value of -2.5 and a maximum possible value of 2.5 of these governance indicators, the aforementioned statistics shows that West African countries still have a lot to improve on in achieving maximum performance in these indicators of governance. The average size of shadow economy (% of GDP) among the studied group is 40.7% while the minimum and maximum size of shadow economy is 20.3% and 62.3% respectively also shows that West African countries have a large shadow economy. The standard deviation values of the governance indicators shows that the governance indicator values are more concentrated around the mean while the standard deviation value of shadow economy shows that there is a large variance between the shadow economy data and its mean. The probability values of Jarque-Bera statistics shows that Shadow economy, corruption control and rule of law are not normally distributed while voice and accountability, regulatory quality, political stability and government effectiveness data are normally distributed at 5% significance level.

4.2 Correlation Matrix

The correlation matrix is employed to ensure that the regression model is free of multicollinearity. The pair wise correlation coefficients for the variables used in the study are shown in Table 2 below:

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900
Issue 4/2021

Table 2: Correlation Matrix

	SHA	ACC	LAW	REG	STA	EFF	COR
SHA	1						
ACC	0.07	1					
LAW	-0.06	0.69	1				
REG	-0.06	0.55	0.83	1			
STA	-0.03	0.46	0.66	0.55	1		
EFF	0.07	0.57	0.80	0.85	0.50	1	
COR	-0.14	0.62	0.84	0.81	0.53	0.79	1

Source: Authors' computation using E-view 10 (2021)

As shown in Table 2 above, the pair-wise correlation coefficients confirm that no two explanatory variables in our study have perfect negative or positive correlation.

4.3 Unit Root Test

Im-Pesaran-Shin (IPS) and Breitung (BTG) unit root tests are used to investigate the presence of unit root in the variables under study. The results of both tests are shown in the table 3 below.

Table 3: Im-Pesaran-Shin (IPS) and Breitung (BTG) Panel Unit-root test

Variable	**IPS**			**BTG**		
	Order		Prob.	Order		Prob.
SHA	I(0)	Intercept, Trend	0.0000	I(0)	Intercept, Trend	0.0104
COR	I(1)	Intercept	0.0000	I(1)	Intercept , Trend	0.0000
EFF	I(1)	Intercept	0.0000	I(1)	Intercept, Trend	0.0000
POL	I(1)	Intercept	0.0000	I(1)	Intercept, Trend	0.0000
REG	I(1)	Intercept	0.0000	I(1)	Intercept, Trend	0.0000
LAW	I(1)	Intercept	0.0000	I(1)	Intercept, Trend	0.0000
ACC	I(1)	Intercept	0.0000	I(1)	Intercept	0.0000

Source: Authors' computation using E-view 10 (2021)

As shown in table 3 above, the probability values of the IPS and BTG panel unit root tests for each of the variables under study confirms at 1% level of significance

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

that control of corruption (COR), government effectiveness (EFF), political stability (STA), regulatory quality (REG), rule of law (LAW) and accountability (ACC) are stationary at first difference while shadow economy % of GDP (SHA) is stationary at level.

4.3 Lag Selection

The optimal lag for the panel ARDL model is automatically selected using Akaike Information Criterion (AIC). The optimal lag of the panel ARDL model for this study is lag structure (1, 2, 2, 2, 2, 2, 2) with the least AIC value of 3.384812.

4.4 Panel-ARDL Estimates

Table 4 shows long-run and short-run coefficients of the effect of governance on shadow economy.

The empirical result shows that the long-run coefficients of control of corruption (COR), political stability (STA), regulatory quality (REG), rule of law (LAW) and accountability (ACC) are statistically significant at 5% level while the long-run coefficient of government effectiveness (EFF) is not statistically significant at 5% level of significance. This is demonstrated by the p-values of the variables. From the result the p-values of COR, STA, REG, LAW, ACC and EFF are 0.0000, 0.0000, 0.0000, 0.0000, 0.0111 and 0.5177 respectively. However, only the long-run coefficient of rule of law and control of corruption conforms to a priori expectation.

The short-run coefficients of the independent variables are all statistically insignificant. This is demonstrated by the respective p-values of the independent variables which are far above 5% level of significance. However, the coefficient of error correction term (ECT) is negative and less than 1 in absolute value. ECT coefficient value of -0.559743 suggests an above average speed of adjustment of short-run deviation from long-run equilibrium. This shows that about 56% of the short run deviation from long-run equilibrium shadow economy is corrected yearly. Specifically it takes 1.79 years ($^{1}/_{0.559743}$) for the current year deviation from equilibrium to be corrected. The p-value of the coefficient of Pesaran cross sectional dependence test shows that the estimates are free from cross sectional dependence.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 4/2021

Table 4: Panel-ARDL Long Run and Short Run Estimates of the Effects of Governance on the Growth of Shadow Economy

Dependent Variable: SHA				
Variable	**Coefficient**	**Stand. Error**	**t-Statistics**	**Probability**
Long-Run Estimates				
COR	-8.885980	0.881881	-10.07617	0.0000
REG	7.351559	0.558941	13.15265	0.0000
LAW	-4.671736	0.830702	-5.623842	0.0000
STA	2.175157	0.259859	8.370538	0.0000
ACC	1.291994	0.501682	2.575325	0.0111
EFF	0.564127	0.869639	0.648691	0.5177
Short-Run Estimates				
ECT	-0.559743	0.133942	-4.179005	0.0001
D(COR)	2.8884198	3.256931	0.885557	0.3775
D(COR(-1))	2.689826	2.631360	1.022219	0.3086
D(REG)	-0.187847	2.614669	-0.071844	0.9428
D(REG(-1))	-1.668254	1.485693	-1.122879	0.2636
D(LAW)	-0.109172	3.165164	-0.034492	-0.9725
D(LAW(-1)	0.641936	1.208874	0.531020	0.5963
D(STA)	0.640695	1.291744	0.495992	0.6207
D(STA(-1))	1.586329	1.508007	1.051938	0.2948
D(ACC)	-1.617713	1.278058	-1.265759	0.2079
D(ACC(-1))	-1.274311	1.779142	-0.716250	0.4751
D(EFF)	-2.862546	1.748316	-1.637316	0.1040
D(EFF(-1))	-2.237188	1.256538	-1.780439	0.0774
CONSTANT	23.91929	5.666761	4.220980	0.0000
TREND	-0.269808	0.083495	-3.231421	0.0016
Pesaran C D	0.060901			0.9514

Source: Authors' computation using E-view 10 (2021)

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Since 2000
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Issue 4/2021

4.4 Policy Implications of the Results

This study examined the effect of governance on the size of shadow economy in West African Countries from 1996 to 2019. The results of the long-run panel ARDL coefficients revealed significant effect of control of corruption (COR), political stability (STA), regulatory quality (REG), rule of law (LAW) and accountability (ACC) on the size of shadow economy (SHA) in West African countries. Government effectiveness (EFF) was however found to have insignificant effect on the size of shadow economy in West Africa. Similarly, the short-run panel ARDL coefficients revealed insignificant effect of all explanatory variables on the size of shadow economy in West Africa.

Specifically, the result implies that a unit increase in control of corruption (COR) index will decrease the size of shadow economy (SHA) in West Africa by about 8.89%. The negative significant long-run relationship between corruption control and shadow economy agrees with empirical studies which concludes that countries with sincere anti-corruption mechanism have smaller shadow economies (Huynh, C.M. and Nguyen 2019; Wibowo and Indrayanti 2020; Goel and Saunoris 2014; Dreher and Schneider 2010). This relationship may be explained by the adverse effect of corruption on the socio-economic conditions in developing countries which makes operating in the official economy either impossible or too costly for the less privileged majority. Similarly, a unit increase in rule of law (LAW) index will decrease the size of shadow economy (SHA) in West Africa by about 4.67%. The negative significant long-run effect of rule of law on shadow economy agrees with a empirical studies which conclude that countries which promote rule of law have smaller size of shadow economy (Luong, Nguyen and Nguyen 2020; Jamalmanesh, Meidani, and Mashhadi, 2014; Togler and Shneider 2009; Dreher, Kotsogiannis and McCorriston, 2009). This relationship may be explained by the confidence of economic agents in the ability of the justice system to enforce property rights and other benefits of participating in the official economy.

Furthermore, contrary to a priori expectation the result suggested that a unit increase in political stability (STA), regulatory quality (REG) and accountability (ACC) will increase the size of shadow economy in West Africa by about 2.18%, 7.35% and 1.29% respectively. The positive significant long-run relationship between political stability and the size of shadow economy in West Africa disagrees with empirical studies which concludes that unstable polity and insecurity increase the size of shadow economy through hindrance of property right

enforcement and rapid changes in policies which increase cost and risk of operating in the official economy (Wibowo and Indrayanti (2020); Razmi, Falahi, and Montazeri 2013). This may be due to the fact that secure and stable environment are generally conducive for economic activities. The positive significant effect of regulatory quality with the size of shadow economy in West Africa agrees with empirical studies which conclude that intensive market regulations increase the size of shadow economy in countries where the less privileged majority earn by engaging in shadow economic activities (Mazhar 2015; Schneider 2010; Enste 2010).

The positive significant long-run relationship between voice and accountability and the size of shadow economy in West Africa disagrees with empirical studies which submit that democratic countries with transparent government which encourage freedoms of expression and economic freedom are more likely to have smaller shadow economies (Wibowo and Indrayanti 2020). This may be due to the fact that re-election and political power of politicians in developing democracies is usually determined by the less privileged majority who earn a living in the shadow economy. Government emanating from such democracy may lack the political will to formulate and implement policies which disrupt shadow economy activities. The result also showed a positive insignificant effect of government effectiveness (EFF) on the size of shadow economy in West Africa. Consequently, the study estimated that a unit increase in control of corruption (COR) index and rule of law (LAW) index will decrease the size of shadow economy in West Africa by about 8.89% and 4.67% respectively.

5. Conclusion and Recommendations

In this paper, the model developed underlined the effect of governance on the size of shadow economy in West Africa from 1996 to 2019. The long-run and short-run coefficients of the panel auto regressive distributed lag model were employed in the analysis. The analysis identified statistically significant effect of corruption control, rule of law, political stability, regulatory quality and voice and accountability on the size of shadow economy in West Africa. Even though shadow economic activities serve as an economic survival strategy for the less privileged in the face of unfavourable socio-economic conditions; increasing size of shadow economy may be detrimental to the attainment of the socioeconomic potentials of West African countries. In order to reduce the size of the shadow economy, the study arrived at the following recommendation, which were found to be necessary.

- Anticorruption agencies must promote sincere and non-selective anti-corruption mechanism which creates humane socioeconomic conditions and deemphasize the need for the less privileged majority to engage in shadow economic activities for survival. The government can achieve this by making sure that anti-corruption agencies are free from all forms of political interference.
- The three arms of government especially the executive must ensure strict adherence to the rule of law in order to boost confidence of economic agents in the ability of the justice system to enforce property rights and other benefits which encourage participation in the official economy.
- The Government should minimize all forms bureaucracy which makes government intervention targeted at attracting shadow economy participants to the official economy counterproductive.

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