SHADOW ECONOMY AND THE GROWTH OF THE NIGERIAN ECONOMY: THE CONTROLLING EFFECTS OF GOVERNMENT AND CORRUPTION

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ABSTRACT
This study examined the effect of shadow economy on the growth of the Nigerian economy. The specific objectives were to; evaluate the effect of MIMIC shadow economy on the gross domestic product growth rate in Nigeria; and evaluate the effect of MIMIC shadow economy on the gross domestic product growth rate in Nigeria. To meet the stated objectives, the study adopted the classical ordinary least squares (OLS) regression techniques as the method of estimation under the autoregressive distributed lag (ARDL) model. Findings from the study revealed that, in the long-run and short-run periods, the effect of the MIMIC shadow economy on economic growth in Nigeria is negative and non-significant Lastly, the result revealed that in the long-run and short-run periods, the effect of the DGE shadow economy on economic growth in Nigeria is positive and non-significant. Conclusively, the two approaches to shadow economy impacted the growth rate of the Nigerian economy differently. Specifically, the MIMIC approach was majorly negative while the DGE approach exerted mostly positive effect at both short-run and long-run periods, ceteris paribus.
Keywords: Underground economy, good governance, rule of law, economic growth
JEL: H2, H26, N2, O16, O43

INTRODUCTION
There is shadow economy everywhere in the world, and numerous studies show that it is growing. Some nations want to improve the dynamics of the official economy by improving the underworld economy through education or harsh fines, rather than through tax and social security system reforms. Any economy in which illicit transactions take place out of sight of authorities is considered to be operating in the shadow economy (Omodero, 2019). It is referred to as the informal sector, black economy, shadow economy, or underground economy. People that work in the shadow economy do not want to be identified, thus they do not report their income, making it difficult to gather information about this type of employment.

Like a great deal of other developing nations, Nigeria suffers from extremely low institutional quality and bad governance. It is obvious that Nigeria's problems stem from a lack of leadership, and as a result, governance and leadership inadequacies have created an environment conducive to the growth of shadow economies. The main reason for this is the belief that responsible public financial management by the state, the maintenance of the rule of law and justice, and the fight against corruption are all made possible by good governance, which has both intrinsic and instrumental developmental value.

Notwithstanding the fact that illicit economic activity has a substantial positive impact on Nigeria's GDP, it is nonetheless a truth that these activities have detrimental effects on public health. It

results in a loss of tax income and nurtures and fertilizes the informal sector, making government fiscal and monetary policies ineffectual. Unreported economic activity, albeit being unofficial, increases the gross domestic product and enhances economic performance. They seem to be more prevalent in economic sectors like services, retail, construction, and agriculture that has high labour demands. Looking elsewhere, underground economy has the potential to seriously violate labour, health, and safety laws, result in significant losses to government coffers, and disrupt the labour market in a number of ways.

Even so, this problem is very challenging to fully understand because it is nearly hard to pinpoint the approach and strategies for resolving the kinds of social, professional, and economic issues that are connected to the irregular sector. However, a summary of all investigative studies on the scope and evolution of underground economy has been produced (Williams & Schneider 2016; Hassan & Schneider 2016, Schneider & Buehn, 2018).

Nigeria is second among sub-Saharan African countries with the largest shadow economy (56.8% of GDP), only surpassed by Zimbabwe (60.6%). Furthermore, according to Medina and Schneider (2018), Nigeria has the fourth-largest shadow economy globally, trailing only Zimbabwe (60.6%), and Georgia (64.87%). However, while it is declining, it did so at an annualized rate of -10.63% between 1991 and 2017, which is not significantly different from other African nations (Qiang et al., 2022; Camara, 2022).

LITERATURE REVIEW

The pioneers of the classic monetary theory of assessing shadow economy were Feige (1979), Tanzi (1980, 1983), Gutmann (1977), and Cagan (1958). According to their theory, cash is primarily employed in the shadow economy since it leaves no trace, making it the preferred method of payment for economic agents looking to conceal their activities from authorities and regulators.

According to Tanzi's theoretical premise (Tanzi, 1980, 1983), the monetary technique is used to assess the size of the shadow economy. Since cash payments are preferred over credit/debit cards, cheques, and bank transactions in informal operations, an increase in the amount of money in circulation is indicative of development in the shadow economy. The amount of money in circulation has a direct impact on the opportunity cost of holding cash. When there is an equal supply and demand of money, driven by transactional, precautionary, and speculative incentives, the money market is in equilibrium. An increase in interest rates causes bond returns to rise, which reduces the urge to hoard money.

In the dictum of Abela et al. (2022), throughout the previous ten years, the informal economic activities have gained attention in certain research papers because to its growing detrimental impact on certain global economies (Collinson, 2023). It is frequently necessary to provide definitions for authors who are trying to quantify the underground economy (Borlea et al., 2017). It is of great essence to remember that different people have different opinions while discussing the shadow economy and economic expansion (Mughal & Schneider, 2020).

There is no universally accepted definition for the informal sector, which is referred to as the "shadow" or undeclared economy in each nation (Esaku, 2021; Hoinaru et al., 2020; Goel et al., 2018). These synonyms must be used consistently and make references to a variety of shadow

economy activities. According to the numerous definitions, underground economy includes any activity that evades taxation, regulation, or government oversight. There has been much discussion in political and intellectual circles on the definition, scope, and key features of the shadow economy (Khuong et al., 2021). Interest in the shadow economy has resurfaced due to recent global trends like migration, climate change, and technological advancements (Klein, 1998; Affandi & Malik, 2020).

More precision is required for characterizing and quantifying the underground economy (Erum et al., 2016). Various researches have determined the factors that influence the shadow economy, including globalization, trade openness, corruption, tax burden, and unemployment (Medina & Schneider, 2018; Schneider etal., 2015). People often have a lot of options to make a respectable living and produce ―extra money‖ through formal means in a booming formal economy (Saleem et al., 2019). Though various researches examine the association between informality and growth, others concentrate on quantifying the amount of informality in an economy. Two approaches of measuring the informal sector—direct and indirect—are highlighted by the majority of the authors. Direct estimating includes using microeconomic techniques, tax auditing techniques, and survey administration.

On the other hand, indirect estimating makes use of secondary data and a macroeconomic methodology. A few techniques for indirect estimation are the use of electricity consumption data, Bean's (1989) currency demand approach (which calculates the difference between GDP's expenditure and income measures), assumptions about the velocity of money, Feige and Urban (2008) transactions approach, and Giles' (1999) physical input method. Indirect estimation, however, simply calculates the informal sector's size. Other pertinent indicators including economic development, social protection, market and credit accessibility, wage disparities and working conditions, and poverty are not taken into consideration (Bean, 1989).

Since many small businesses only hire formal employees and conduct their business in a formal manner, a lot of big businesses often employ informal labor (Robert, 2021; Ojong et al., 2016). But because business size has a strong correlation with informality, it is crucial to include when estimating the size of the informal economy (Tran, 2021; Nguyen & Luong, 2020). The portion of the economy that is not included in the GDP and is not subject to taxes or oversight by governmental bodies is regarded informal sector activities. In the informal economic activities, tax evasion is a problem that results in lower government revenue and investment (Pula & Elshani, 2018). Ohnsorge and Yu (2021) estimate that around one-third of developing and emerging market economies (EMDEs) are comprised of the informal sector.

Moreover, Duodu and Baidoo (2020) used the autoregressive distributed lag model to examine the function of institutions in the relationship between trade openness and economic growth in Ghana (1984–2018). They found that, in the short and long periods, trade openness and institutional quality alone had a significant positive influence on Ghana's economic growth. On the other hand, trade openness has little long-term impact on economic growth when paired with institutional quality.

Using the Engel Granger two-step strategy, autoregressive distributed lag technique, and currency demand approach, Mughal and Schneider (2018) calculated the size of Pakistan's shadow economy

for the years 1973 to 2015. According to the findings, the average proportion of the shadow economy during that time fell between 25.29 and 26.41. The results also showed that, although having a negative short-term effect, the rise of the shadow economy had a long-term positive effect on the formal sector.

Error correction multiple indicators multiple causes (EMIMIC) model was used by Ogbuabor and Malaolu (2013) to assess the extent and reasons behind Nigeria's informal economy between 1970 and 2010. According to the study, there was evidence that the informal economy's size remained relatively stable between 1970 and 2010, averaging 64.6% of GDP. Additional research indicated that the tax load, governmental rules, unemployment rate, and inflation rate are the main factors driving Nigeria's informal economy.

METHODOLOGY
This investigation is designed to empirically determine the degree to which shadow economy impacts the growth of the Nigerian economy using government effectiveness and control of corruption as control variables. The study employs exploratory, descriptive, and ex-post facto research designs that reflect essentially the parametric estimations to validate the nature, magnitude, and possible direction of the relationship among the target variables.

In order to model the relationship between the dependent and independent variables adopted as proxies [gross domestic product growth rate (GDPGR), MIMIC shadow economy based model (MIMIC), DGE shadow economy based model (DGE), government effectiveness (GVE), and control of corruption (COC)] are specified below:

GDPGR   =   f (MIMIC, DGE, GVE, COC)   1

GDPGR   = $a_0 + a_1$MIMIC + a_2DGE + a_3GVE + + a_4COC + u_t 2

u_t =   is the random error term, which captures all the other explanatory variables not included in this regression model.

In examining the effect of shadow economy, on the growth of the Nigerian economy using government effectiveness and control of corruption as control variables, this study adopted the classical ordinary least squares (OLS) regression techniques as the method of estimation under the autoregressive distributed lag (ARDL) model, thus:

$$\Delta GDPgr_t = \alpha_0 + \sum_{k=1}^{n} a_1\Delta LogMIMIC_t + \sum_{k=1}^{n} a_2\Delta LogDGE_t + \sum_{k=1}^{n} a_3\Delta LogGVE_t + \sum_{k=1}^{n} a_4\Delta LogCOC_t +$$

$$p_1\Delta LogMIMIC_{t-k} + p_2\Delta LogDGE_{t-k} + p_3\Delta LogGVE_{t-k} + p_4\Delta LogCOC_{t-k} + et \qquad 3$$

RESULTS AND DISCUSSION
The group unit root test as shown in Table 1 was performed to determine whether the relevant variables are stationary. From Table 1, the measurement of the group unit root in the data revealed that all the variables in the group were jointly integrated in all the methods under examination, that

is, all the variables were found to be jointly stationary at 1 percent, 5 percent, and 10 percent significance at levels. Group unit root tests when conducted at their levels, the variables (GDPGR, MIMIC, DGE, GVE, and COC) were found to have no unit root at 1 percent, 5 percent, and 10 percent level of significance, and stationary in all the methods.

Table 1: Group unit root test (levels)

Group unit root test: Summary				
Series: GDPGR, MIMIC, DGE, GVE, COC				
Method	Statistic	Prob.**	Cross-sections	Obs
Levin, Lin & Chu t*	-1.64587	0.0499	5	129
Im, Pesaran and Shin W-stat	-1 .85741	0.0316	5	129
ADF - Fisher Chi – square	20.7357	0.0230	5	129
PP - Fisher Chi – square	19.7699	0.0315	5	130

The ARDL long-run cointegrating results in Table 2 revealed that MIMIC and DGE variables controlled by government effectiveness (GVE) and COC will possess a joint powerful negative influence on GDPGR in Nigeria in the long run, all things being equal. Applicably, in the nearest future, MIMIC and DGE variables controlled by government effectiveness (GVE) and COC will possess a substantive negative influence on GDPGR in Nigeria.

Table 2: ARDL long-run dynamic result

Variab.	Coeff.	S/E.	t-stat.	Probty. .
MIMIC	0.042847	2.126168	0.020152	0.9858
DGE	-0.479096	2.456320	-0.195046	0.8634
GVE	-5.738600	30.96689	-0.185314	0.8701
COC	-1.033916	3.835522	-0.269563	0.8128
C	28.89887	30.29326	0.953970	0.4408

EC = GDPGR - (0.0428*MIMIC -0.4791*DGE -5.7386*GVE -1.0339*COC +

28.8989)

In the long-run, GDPGR will fall by 28.89% as a consequence of shadow economic measures. Specifically, a per cent increase in MIMIC shadow economy (MIMIC) controlled by GVE and COC may bring about a commensurate fall in GDPGR by 0.04% though not significant. Likewise, a per cent increase in DGE shadow economy (DGE) controlled by GVE and COC may also bring

about a commensurate increase in GDPGR by 0.47% though not meaningful as expected.

While in the short run, the ARDL result showed that the MIMIC shadow economy approach was found on the average to have a non-significant inverse influence on GDPGR in Nigeria at various lags. Similarly, the impact of the MIMIC approach of shadow economy in the nearest future was negative and non-significant. Giving these effects, the outcomes upheld the submission by Medina and Schneider (2018) but contradicted Guillermo and Deyvi (2018).

In the short run also, the ARDL result showed that the DGE shadow economy approach was found mostly to have a non-significant positive influence on economic growth in Nigeria at various lags; similarly, the impact of the DGE approach of shadow economy on the growth of the Nigerian economy was in the nearest future, positive and non-significant. Giving these effects, the findings were in agreement with the study by Attamah and Umeh (2020) and Yelwa and Adam (2017) but Hadhek et al. (2021).

Table 3: ARDL short run dynamic result

Dependent Variable: GDPGR

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDPGR(-1)	-0.547859	0.521306	-1.050936	0.4035
MIMIC	-2.887379	1.599682	-1.804971	0.2128
MIMIC(-1)	1.314710	2.636557	0.498646	0.6675
MIMIC(-2)	-2.779751	1.739524	-1.597995	0.2511
MIMIC(-3)	4.418741	3.175301	1.391598	0.2986
DGE	0.172659	1.889244	0.091391	0.9355
DGE(-1)	-2.024015	1.637222	-1.236249	0.3419
DGE(-2)	1.638977	2.045850	0.801123	0.5071
DGE(-3)	-3.234018	1.976393	-1.636323	0.2434
DGE(-4)	2.704823	2.512963	1.076348	0.3944
GVE	-0.252184	13.59327	-0.018552	0.9869
GVE(-1)	73.69564	43.57809	1.691117	0.2329
GVE(-2)	57.81577	33.62835	1.719257	0.2277
GVE(-3)	-32.47510	35.36328	-0.918328	0.4554
GVE(-4)	-107.6667	58.15240	-1.851457	0.2053
COC	44.88139	24.95265	1.798663	0.2139
COC(-1)	-41.50000	24.39036	-1.701492	0.2310
COC(-2)	11.16344	8.760479	1.274296	0.3306
COC(-3)	7.250334	7.720390	0.939115	0.4468
COC(-4)	-23.39552	12.68862	-1.843819	0.2065
C	44.73137	44.76104	0.999337	0.4229

CONCLUSION

This study was carried out to examine empirically the effect of shadow economy on economic growth rate in Nigeria given the prevailing governance effectiveness and control of corruption. Since people who engage in informal activities prefer to pay with cash rather than credit/debit cards, cheques, or bank transactions, the amount of currency in circulation has increased, which is indicative of growth in the shadow economy. When important institutional, economic, and policy variables were taken into account, it was discovered that there was an inverse relationship between GDP and the nonformal sector in underdeveloped countries. However, in countries where GDP

per capita was higher than the threshold, both the magnitude of the economy and informal activities increased. Furthermore, it shows that the percentage of the nonformal economy tends to decrease as economic development increases because of appreciable institutional quality standards and a high-standard supply of social amenities are typically present. The study's analysis showed that the two approaches to the shadow economy had differing effects on the growth rate of the Nigerian economy. In particular, the DGE strategy had a primarily favourable impact over both the short- and long-terms, ceteris paribus, but the MIMIC approach had a primarily negative impact.

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