
Corruption, Underground Economy and the Economy: An Empirical Analysis of Nigeria

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Abstract

This research paper empirically investigated the relationship between corruption, the underground economy and the economy of Nigeria for the period 1996 to 2015. The data for the study was collected from various sources including the CBN statistical bulletin, Transparency International (TI) Corruption Perception Index (CPI) and the International Monetary Fund (IMF) shadow economy index. The data were normalized and standardized by the process of natural log transformation and analyzed using Ordinary Least Square (OLS) multiple regression model. The findings of the research showed that there is a negative relationship between corruption and the economy in Nigeria. The findings also showed that there is a positive and statistically significant relationship between the underground economy and the official economy. Based on the findings of the research, it is concluded that corruption does not have as much an effect on the economy as was previously believed. Even though the relationship remains negative, it is not an important determinant of economic performance in Nigeria. It is further concluded that activities in the underground economy are an important determinant of economic performance in the official sector as proceeds of economic activities in the underground sector eventually find their way into the official economy. Based on the above, it is recommended that policies to encourage businesses in the underground economy to transition to the official economy be put in place. The fight against corruption should be intensified with new strategies through well established and funded institutions as well as reduce the bureaucratic processes involved in registering businesses in order to eliminate the situations that make bribery an acceptable alternative in the business registration processes.

Keywords: *Corruption; Underground Economy; Economy; Transparency International; Corruption Perception Index; International Monetary Fund.*

1.1 Introduction

Every economy in the world no matter how developed will have aspects which are not directly observable or are outside governmental control. These aspects of the economy though often viewed from the negative perspective may not always be a bad economy in its entirety. The import of the underground economy is well documented especially for developing countries and economies in transition where institutions are not adequate to support efficient market activities (Choi and Thum, 2005). The underground economy according to Buehn and Schneider (2009) is an unobservable economic phenomenon that includes unreported income from otherwise official trade in goods and services in addition to taxable economic activities. A survey by Schneider (2007) revealed that the underground economy in Nigeria is about 59.5% of the nation's economy. This value of the underground economy has shown no sign of abating as more current data by the International Monetary Fund (2017) indicates that it has only marginally reduced to 56.67% in 2015. Policy efforts by the government to encourage

businesses in the underground economy to transition to the formal economy over the years have yielded very little fruit due to a number of reasons including prohibitive taxes, bureaucratic bottlenecks and of course the dire problem of endemic corruption.

The process of registering business in Nigeria can take anything from one to three months. The World Bank ranked Nigeria 146 out of 190 - behind countries like Iran, Uganda, Niger, Pakistan, and Cambodia. The costs of getting a business registered in Nigeria can be quite prohibitive especially for the micro and small businesses that form the bulk of the underground economy.

Prohibitive taxation is a major factor for the large share of the underground economy in developing countries (Singh, Jain-Chandra, and Mohommad, 2012). A registered business abnition has a tax liability towards the local, state and federal governments - many of these taxes being almost a replication at the different tiers. Efforts by policymakers in recent times to tackle the problem of multiple taxations has faced difficult hurdles as a result of new drives especially by states to shore up their internally generated revenue (IGR) following the reduction in revenue allocation from the centre. Thus, small businesses consider more advantageous (for tax purposes) to continue operating in the underground economy.

Another major challenge that drives businesses underground is official government corruption. Corruption manifests in different guises including in the problems associated with ease of registering and doing business and multiple taxations among others. For instance, corrupt government officials create unnecessary bureaucratic difficulties in order to justify their demands for bribes before insurance of permits and licenses for small businesses. Furthermore, many of the multiple taxes demanded by government official's end up in private pockets and not government coffers.

As noted by Fjeldstad (2003), businesses tend to stay in the underground economy in economies with high levels of corruption thus supporting the view that underground/shadow economies thrive in corrupt environments. The case of Nigeria appears to support this assertion as the large underground economy is dogged by a high corruption perception as indicated by Transparency International (TI). This paper is intended to investigate the effects of corruption and the underground economy on the economy of Nigeria.

1.2 Statement of the Problem

Several problems plaguing developing economies are linked to the high incidence of the underground economy. First, underground economies provide an avenue for business to evade the payment of taxes. Thus, the government loses revenue due to taxation owing to underground economies. For countries like Nigeria with a very large underground economy, the losses can be quite large. Again, as noted by Singh, Jain-Chandra, and Mohommad (2012), "large underground economies pose problems for policy making as governments with large informal or underground economies may raise tax rates to make up for revenues shortfalls, however, this may lead to further expansion of the underground as businesses try to avoid paying the taxes". Furthermore, large underground economies impede the transmission channels of monetary policies. For example, since most underground economic activities do not depend on the banking system for business funding, policies intending to redirect economic activities may not yield intended results as business outside the official economy are not primed to respond appropriately.

The problems associated with the underground economy are further exacerbated by corruption. Corrupt government officials who benefit from the underground economy may deliberately take actions that will potentially lead to further expansion of the sector. This is evident in some

cases where government officials refuse to attend to inquiries during office hours but will rather direct the individual to designated agents/partners (outside the office) who will charge exorbitant fees for services that could have been obtained for less in the office. Nigeria is plagued with this kind of activities by corrupt government officials and this has the potential of driving or keeping businesses in the underground economy. Thus, the economy suffers as businesses that ought to contribute to the growth of the economy are driven underground.

A search through literature reveals several studies investigating the relationship between corruption and the economy and several others that investigated the relationship between the underground economy and the official economy. However, little research seems to pay attention to the interaction between corruption, the underground economy and how both interact with and affect the official economy. The present study is intended to fill this gap in research by investigating the relationships between the underground economy, corruption and how they affect the official economy.

1.3 Objectives of the Study

The objectives of the study are as follows:

- 1) Investigate the effect of corruption on the economy of Nigeria
- 2) Investigate the effect of activities in the underground economy on the Nigeria economy

1.4 Research Questions

- 1) What is the effect of corruption on the economy of Nigeria?
- 2) What is the effect of activities in the underground economy on the Nigeria economy?

1.5 Research Hypotheses

- 1) Corruption does not significantly affect the economy of Nigeria
- 2) Activities in the underground economy does not significantly affect the Nigeria economy

2.1 Theoretical Framework

In examining the relationship between corruption and the underground economy, two groups of researchers have proposed opposing theories of the relationships. First are those who view the relationship between corruption and the underground economy as complements. Researchers in this group include (Johnson, Kaufmann and Shleifer 1997; Friedman, Johnson, Kaufmann and Zoido-Lobaton 2000; Djankov, LaPorta, Lopez-de-Silanes and Shleifer 2002; Dreher and Schneider 2010; Beuhn and Schneider 2012). On the other hand are those who view the relationship between the variables as substitutes (Choi and Thum 2005; Chowdhury 2005; Dreher, Kotsogiannis and McCorriston 2009; Torgler and Schneider, 2009).

Those who view the underground economy and corruption as being complementary assert that they have a positive relationship as growth in one encourages growth in the other. For example, Johnson, Kaufmann, and Shleifer (1997) considered that corruption act as an additional tax that tends to increase the burden of regulation that forces entrepreneurs to operate in the underground economy. Djankov, LaPorta, Lopez-de-Silanes, and Shleifer (2002) in their opinion emphasized the effect of regulatory intensity on corruption and how it encourages the entry of businesses into the unofficial economy. In addition, corruption causes the mis-allocation of resources to economically less important areas where individual personal gains can be maximized at the detriment of the societies' needs. This, in turn, reduces the stock of public goods and induces the further growth of the underground economy.

However, those who view corruption and the underground economy as substitutes posit that growth in the business in the underground economy reduces their exposure to the demands of corrupt officials. For example, Choi and Thum (2005) showed in their analysis, that the

existence of the underground economy reduces corruption capacities of public officials and hence enhance the official sector.

2.2 Review of Concepts

2.2.1 Corruption

Corruption is the abuse of public power for private gains in whatever guise. The Longman English Dictionary defined corruption as dishonest, illegal or immoral behaviour especially from someone with power. Transparency International (TI) asserted that corruption is one of the greatest challenges of the world today. Corruption undermines good governance, distorts public policy and its outcomes, systematic misallocation of resources also largely stems from corruption, weakens private as well as public sector developments and affects mostly the poor and vulnerable in every society. Public office is also abused when private agents actively offer bribes to circumvent public policies and processes for competitive advantage and profit. Public office can also be abused for personal gain even if no bribery occurs, through benefaction and nepotism, the stealing of state assets or the diversion of state resources (World Bank, 1997).

Corruption is present in practically all countries of the world albeit in varying degrees, but most prevalent in developing countries in Sub-Saharan African, Latin America and Asia. Corruption has been linked to countries with underdeveloped institutions. Thus, Western European and North American countries with well-developed institutions that act as control measures have the lowest levels of corruption. According to Ebegbulem, (2012) corruption in developed nations is minimal because their corruption control mechanisms are better developed and effective than in the developing countries.

Buehn and Schneider (2009) quoting Transparency International (2009) stated that the cost of corruption is multi-faceted as it among other things constitutes a major impediment to democracy as institutions lose legitimacy and are misused for private advantage; often responsible for the redistribution of scarce public resources to high-profile ego-driven projects at the expense of more economically viable and necessary projects like schools, hospitals, and public parks and recreation centres; hinders the development of fair market structures and distorts competition; undermines people's trust in institutions and political leadership that, consequentially allows unscrupulous leaders to transfer public assets into personal wealth. Finally, demanding and paying bribes becomes the social norm and those unwilling to comply often emigrate, leaving the country drained of its most able and honest citizens.

2.2.2 Underground Economy

The term 'underground economy' is one among many used to describe economic activities that are not captured in the official or formal economy. Others include shadow economy, black, grey, unofficial, informal economy. Schneider (2007) defined "the underground economy as those economic activities and the income derived from them that circumvent or otherwise avoid government regulation, taxation or observation". This includes all legitimate production of goods and services that are intentionally hidden from government authorities. In Nigeria where monitoring and regulation are very lax, unregistered businesses that do not pay taxes abound in the full glare of the government.

Businesses prefer to go or stay underground to evade the payment of income, value added or other taxes and contribution into social security schemes; circumvent some stringent legal labour market standards like workplace safety, maximum work hours and the minimum wage; avoid complying with administrative procedures perceived to be problematic. Other reasons adduced for the continued existence of the underground economy despite government efforts include underdeveloped institutions and corruption. Underdeveloped institutions create a

vacuum in the system that can be manipulated by corrupt public officials. The absence of public utilities especially in developing countries can also contribute to the growth of the underground economy as citizens do not see the need to contribute to a system that contributes nothing to their wellbeing.

Schneider (2007) further stated that the increased shadow economy may lead to a reduction in state-collected revenues which will, in turn, lead to a reduction in the quality and quantity of publicly provided goods and services. According to Virta (2007), underground economic activities tend to hinder the smooth functioning of the official economy and can consequently have a negative effect on economic growth through reduced tax revenue and also reduced public spending.

2.3 Empirical Review

Dreher and Schneider (2006) analyzed the influence of the shadow economy on corruption and vice versa. They hypothesized that corruption and shadow economy are substitutes in high-income countries while they are complements in low-income countries. Using data comprising of a cross-section of 120 countries and a panel of 70 countries for the period 1994-2002, the results showed that the shadow economy reduces corruption in high-income countries, but increases corruption in low-income countries. The findings also showed that stricter regulations increased both corruption and the shadow economy.

Katsios (2006) reported in “the shadow economy and corruption” that the strong and consistent relationship between the shadow economy and corruption in Greece is closely linked with the reflexes of those who are not willing or cannot afford to bribe government bureaucrats, or who have no connections to these bureaucrats, thus choosing the shadow economy as an alternative for corruption, and making the informal economy alike to a “corrupt state”. Thus, the failure of Greek governments to tax underground activities, and the related impact on the amount of corruption, is linked with lots of governmental activities altering and weakening its redistributive and stabilizing role.

Buehn and Schneider (2009) applied the structural equation model (SEM) to show the relationship between shadow economy and corruption. Their findings revealed that a large shadow economy and corruption go hand in hand. Thus, in economies with a large shadow economy firms and individuals often completely rely on shadow economic activities and are easier to detect the bigger they are or get. In order to escape detection and taxation and to avoid punishment firms are forced to bribe officials. Small tax revenues reduce the quality of public services and infrastructure further reducing the incentives to remain official. A weaker legal environment, i.e. more corruption also fosters the motivation for hiding activities. Thus, corruption and the shadow economy are two sides of the same coin.

Sunkanmi and Isola (2014) investigated the causality between corruption and economic growth in Nigeria. The researchers used the Johansen co-integration and Granger causality tests, on time series (secondary) data, covering 1990 and 2010. The findings revealed that there was no significant relationship between corruption and the Economic Growth determinant, openness of the economy and globalization. While economic growth and the other variables such as government expenditure, foreign direct investment (FDI), Gross capital formation has a significant relationship with corruption, thus indicating that corruption exhibited a positive relationship with economic growth.

Gillanders and Parviainen (2015) contributed to the research on corruption and the shadow economy by examining the relationship at the sub-national level. Using World Bank Survey

data and implementing an OLS regression, they found that sub-national units in which more firms report that corruption as an obstacle to their operations also tend report informal competitors as an obstacle and vice versa. Thus, corruption leads to an increase in informal/underground competitors both of which hinder the growth of business in the formal sector.

Ouédraogo (2017) analyzed the relationship between governance, corruption, and the size of the underground economy, using data from 23 Sub-Saharan Africa countries for the period 1999 to 2007 which was analyzed using stepwise regression ordinary least square procedure. The findings showed that corruption, the quality of governance, the quality of institutional settings, and the unemployment rates are major determinants of the size of the underground economy. It was also shown that a high level of corruption and poor institutional settings favor an increase in the underground economy.

Borlea, Achim and Miron (2017) empirically investigated the relationships between corruption and shadow economy among 28 European Union countries, over the period 2005-2014, using the Ordinary Least Square (OLS) regression analysis. The findings showed that a high and positive relationship exists between corruption and shadow economy, therefore a higher level of corruption involves a higher level of the shadow economy. It also showed that corruption and shadow economy had a high negative relationship with economic growth.

3. Materials and Methods

The data for the study was collected from several secondary sources. The data on the economy was proxied as real gross domestic product (RGDP) was collected from the Central Bank of Nigeria (CBN) statistical bulletin - data on corruption measured using the corruption perception index (CPI) published by Transparency International while data on the underground economy were measured using the shadow economy index of International Monetary fund. Availability of data meant that our period of coverage (sample) extended from 1996 to 2015. For example, the Transparency International corruption perception index (CPI) was the sample for the first time in 1995 while Nigeria was added to the index in 1996. Furthermore, the shadow economy index of the IMF extended to 2015 as the most current period. The dataset was transformed to log form considering that they were measured as different scale. For example, while RGDP is in absolute Naira (monetary) value, corruption perception was measured as index values and shadow economy as a percentage of the official economy. Further, the value of the shadow economy was computed by multiplying the value of the official economy (RGDP) by the percentage size of the underground economy. The Ordinary Least Square (OLS) multiple regression model was adopted as the method of data analyses. In its general form, the multiple regression analysis model is given as:

$$y = a + b_1x_1 + b_2x_2 + \dots + b_nx_n + e_i \dots \dots \dots (1)$$

The perceived relationship between corruption, the underground economy, and the official economy is given functionally as follows:

$$\text{Official Economy} = f(\text{corruption, underground economy}) \dots \dots \dots (2)$$

Where the official economy is measured as the real gross domestic product (RGDP), corruption is measured by corruption perception index (CPI) and underground economy is measured as underground GDP (UNGDP) and expressing all variables in their log form, equation 1 and 2 above are readapted as follows:

$$\text{LNRGDP} = a + \beta_1\text{LNCPI} + \beta_2\text{LNUNGDP} + \mu t \dots \dots \dots (3)$$

Where; LN_{RGDP}, LN_{CPI}, and LN_{UNGDP} are the natural logs of real gross domestic product (RGDP) corruption perception index (CPI) and underground economy (UNGDP). It is expected that β_1 and $\beta_2 < 0$.

4.1 Data Presentation and Analyses

Table 1: Descriptive Statistics

	RGDP	CPI	UNGDP
Mean	5.935980	0.641635	5.348542
Median	5.958806	0.715156	5.340021
Maximum	6.537038	0.993252	5.892492
Minimum	5.355543	-0.040822	4.862723
Std. Dev.	0.416236	0.328353	0.354262
Skewness	-0.041174	-0.744764	-0.007962
Kurtosis	1.565168	2.459687	1.594558
Jarque-Bera	1.721270	2.092193	1.646268
Probability	0.422893	0.351306	0.439053
Sum	118.7196	12.83270	106.9708
Sum Sq. Dev.	3.291798	2.048496	2.384527
Observations	20	20	20

Source: Author's Computation 2019

Table 1 above shows the descriptive for statistics real gross domestic product (RGDP), corruption perception index (CPI) and underground economy (UNGDP). From the results, the skewness of the data set gave values of -0.0412, -0.7445 and -0.0078 respectively for RGDP, CPI, and UNGDP. From the result, we infer that all three variables have properties of negative skewness. However, these values are close to the normal skewness value of 0. Furthermore, the result also shows that the kurtosis values for the data set gave values of 1.566, 2.460 and 1.595 respectively for RGDP, CPI, and UNGDP. All the values have properties of positive kurtosis close to the normal kurtosis value of 3. Finally, the Jarque-Bera statistic for the variables gave values of 1.721, 2.092 and 1.646 and Probability values of 0.423, 0.351 and 0.439 respectively for RGDP, CPI, and UNGDP. Considering that the null hypothesis for the Jarque-Bera statistic is that the data set is normally distributed around the mean, we do not reject the null hypotheses and conclude that all the variables are normally distributed.

Table 2: Regression Analyses

Dependent Variable: LNRGDP

Method: Least Squares

Date: 01/16/19 Time: 10:35

Sample: 1996 2015

Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.365714	0.157184	-2.326663	0.0326
LNCPI	-0.008571	0.035418	-0.241999	0.8117
LNUNGDP	1.179236	0.032828	35.92203	0.0000
R-squared	0.996018	Mean dependent var		5.935980
Adjusted R-squared	0.995550	S.D. dependent var		0.416236
S.E. of regression	0.027767	Akaike info criterion		-4.192429
Sum squared resid	0.013107	Schwarz criterion		-4.043069
Log likelihood	44.92429	Hannan-Quinn criter.		-4.163272
F-statistic	2126.183	Durbin-Watson stat		2.082897
Prob(F-statistic)	0.000000			

Source: Author's Computation 2019

The regression results in Table 2 above shows that the coefficients of regression for the relationship between real gross domestic product (RGDP), corruption perception index (CPI) and underground economy (UNGDP) gave values of -0.009 and 1.179. These values indicate that there is a negative relationship of -0.009 between real gross domestic product (RGDP) and corruption in Nigeria implying that a one unit increase in corruption perception index is predicted to lead to a 0.009 unit decrease in real gross domestic product. Further, the findings indicate that there is a positive relationship of 1.179 between real gross domestic product (RGDP) and the underground economy (UNGDP) implying that a one unit increase in the size of the underground economy is predicted to lead to a 1.179 units increase in real gross domestic product. Also, the value of the adjusted R-Squared of 0.9960 indicates as much as 99.60% variations in the real gross domestic product can be attributed to variation in corruption and the underground economy. Finally, the result also shows that the t-statistic for the coefficient of corruption perception index (LNCPI) is 0.242 with a probability of t-statistic of 0.812 while the t-statistic for the coefficient of underground economy (LNUNGDP) is 35.922 with a probability of t-statistic of 0.000. The above results imply that corruption does not significantly affect the economy. However, the underground economy significantly affects the official economy.

4.2 Discussion of Findings

The regression results in Table 2 above shows that the coefficients of regression for the relationship between real gross domestic product (RGDP), corruption perception index (CPI) and underground economy (UNGDP) gave values of -0.009 and 1.179. These values indicate that there is a negative relationship of -0.009 between real gross domestic product (RGDP) and corruption in Nigeria implying that a one unit increase in corruption perception index is predicted to lead to a 0.009 unit decrease in real gross domestic product. Further, the findings indicate that there is a positive relationship of 1.179 between real gross domestic product (RGDP) and the underground economy (UNGDP) implying that a one unit increase in the size of the underground economy is predicted to lead to a 1.179 units increase in real gross domestic

product. Also, the value of the adjusted R-Squared of 0.9960 indicates as much as 99.60% variations in the real gross domestic product can be attributed to variation in corruption and the underground economy. Finally, the result also shows that the t-statistic for the coefficient of corruption perception index (LNCPI) is 0.242 with a probability of t-statistic of 0.812 while the t-statistic for the coefficient of underground economy (LNUNGDP) is 35.922 with a probability of t-statistic of 0.000. The above results imply that corruption does not significantly affect the economy. However, the underground economy significantly affects the official economy.

5. Conclusion and Recommendations

Based on the findings of the research, it is concluded that corruption does not have as much an effect on the economy as was previously believed. Even though the relationship remains negative, it is not an important determinant of economic performance in Nigeria. Furthermore, the indirect effect of corruption on the economy is likely to be much more substantial than the direct effects. It is further concluded that activities in the underground economy are an important determinant of economic performance in the official sector as proceeds of economic activities in the underground sector eventually find their way into the official economy. Policies to encourage businesses in the underground economy to transition to the official economy should be put in place. Also the fight against corruption should be intensified with new strategies through well established and funded institutions as well as reduce the bureaucratic processes involved in registering businesses in order to eliminate the situations that make bribery an acceptable alternative in the business registration processes

Acknowledgement

I would want to say my heartfelt appreciation to an erudite guru, the man who conscientiously made me understand the nitty-gritty of research. He is Dr. E. A. L. Ibanichuka. Sir, I make bold to say thank you so much and may God continue to embarrass you with His cornucopia of wisdom and blessing.

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Period	Real Domestic Product (N'B)	Gross Corruption Perception Index (%)	Underground Economy index (%)	Underground RGDP (N'B)
1996	211.7792	0.96	0.6109	129.37591
1997	217.891	1.76	0.6069	132.23805
1998	223.3287	1.9	0.6233	139.20078
1999	224.4941	1.6	0.5987	134.40462
2000	236.8828	1.2	0.579	137.15514
2001	252.6754	1	0.5764	145.64210
2002	289.5771	1.6	0.5993	173.54356
2003	317.0945	1.4	0.5719	181.34634
2004	350.2055	1.6	0.5672	198.63656
2005	374.7495	1.9	0.5584	209.26012
2006	399.955	2.2	0.5195	207.77662
2007	429.2241	2.2	0.5496	235.90157
2008	460.1252	2.7	0.5306	244.14243
2009	498.561	2.5	0.5398	269.12323
2010	546.1226	2.4	0.528	288.35273
2011	575.1104	2.4	0.5151	296.23937
2012	599.2989	2.7	0.5156	308.99851
2013	632.1872	2.5	0.517	326.84078
2014	671.5279	2.7	0.5064	340.06173
2015	690.2393	2.6	0.5249	362.30661

Sources: *Central Bank of Nigeria (CBN) statistical Bulletin*
Transparency International (TI) CPI index
International Monetary Fund (IMF) Shadow Economy Index