Lancaster University Management School
Working Paper
2000/006

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This paper has benefited, without implications, from the encouragement and comments of V.N. Balasubramanyam and other members of the International Business Research Group (IBRG), Lancaster University. An earlier version of the paper titled "Corruption and Economic Growth in Nigeria" was presented at the International Economics Study Group (IESG) Easter Conference 2000, University of Wales Conference Centre, Gregynog. All comments from this Conference are gratefully acknowledged. I am, however, solely responsible for any errors.

Corruption in Nigeria

1 Introduction

Nigeria, with a population of over 100 million people, is the most populous country in Africa; one in five Sub-Saharan Africans is a Nigerian. At the time of political independence, on 1st October 1960, Nigeria was known for her exports of agricultural products including groundnut, palm oil, cocoa, cotton, beans, timber, and hides and skins. Then, during the oil boom period of the seventies Nigeria made headlines with her oil wealth, as the country is richly endowed with oil and natural gas resources capable of financing a number of important projects to meet basic consumption and development needs. With a per capita income of around $1100 during the late 1970s Nigeria was regarded as the fastest growing country in sub-Saharan Africa, thanks to the oil windfall. Since then Nigeria has been rarely off the world press, but mostly due to notoriety rather than fame. One persistent accolade conferred on Nigeria is that it is one of the most corrupt countries in the world. The succession of dictatorial regimes, disregard of human rights, political instability and economic mismanagement have all contributed to cast Nigeria in a bad light internationally. These factors have also served to undermine Nigeria's economic growth and development potential, in terms of most development indicators. With a per capita income of $340 Nigeria now ranks amongst the least developed countries in the World Bank league tables. The Nigerian higher education system, once regarded as the best in sub-Saharan Africa, is in deep crisis. Health services are woefully inadequate. Graduate unemployment is rising and so too is the crime rate.

This sad state of affairs is despite the oil wealth. As the old cliché goes, oil has been a blessing and a curse to Nigeria. It is a blessing because the oil wealth provided Nigeria with an easy entry into international capital markets. It also allowed the country to embark on large scale public and private sector projects. However, the oil bonanza has also introduced opportunities for rent-seeking activities and corruption in both private and public sectors of the economy. These, in turn, have changed Nigerian politics and intensified ethnic rivalry, as access to and manipulation of the government-spending process has become the gateway to fortune.

This paper provides an estimate of the extent of corruption in Nigeria and discusses its causes and consequences. Section 2 briefly discusses definitional issues and attempts at estimating corruption in various countries. Section 3 reviews the major causes of corruption

which are relevant for the analysis of corruption in Nigeria. Section 4 provides statistical evidence on the magnitude of corruption and its impact on the Nigerian economy. Section 5 pulls together the main conclusions of the paper.

2 Definitional issues

There are a number of definitions of corruption. The simplest definition, however, is that it is the misapplication of public resources to private ends[1]. For example, public officials may collect bribes for issuing passports or visa, for providing permits and licenses, for authorising passage of goods at sea/air port, for awarding contracts or for enacting regulations designed to create artificial scarcity.

In a broader sense, corruption can be defined as "an arrangement that involves an exchange between two parties (the demander and the supplier) which (i) has an influence on the allocation of resources either immediately or in the future; and (ii) involves the use or abuse of public or collective responsibility for private ends" (Macrae, 1982, p.678). This definition distinguishes the factors that influence the demand price and supply price of 'favours'. For instance, it is likely that in a military regime (or dictatorship), the demand price for favours might exceed their supply price. The opposite may be true in a democratic regime, as a corrupt representative is likely to evaluate the consequences of detection.

It is noteworthy that in a supply determined (briber-initiated) model of corruption the size of the bribe, determined by the briber, is linked to the opportunity costs of time for the briber. In a demand determined (bribee-initiated) model of corruption, however, the public servant sets the price of corruption. In determining the size of the bribe, the official may be influenced by a number of factors, such as imperfect information on the part of the briber, family pressure, favouritism for a particular client and nepotism. Whether or not the supply price exceeds the demand price of corruption depends on the nature of corruption, type of governance and institutional framework for detecting and penalising corrupt officials. It is likely that at a low price, people may demand a larger number of bribes to get a target amount of money. So corruption may be very high in societies at a middle level, with highly unequal income distribution and complex regulatory regimes. What then are the factors that may influence supply price and demand price of corruption?

[1] This definition is similar to that given by the World Bank, i.e. "the abuse of public power for private benefits" (Tanzi, 1998). For other definitions of corruption, see Theobald (1990) and Tanzi (1995).

3 Causes of Corruption

Public choice theory, game theory and transaction-cost economics have all made important contributions to the study of corruption (Rose-Ackerman, 1978; Macrae, 1982). Whilst economists focus on the decision making of rational, self-interest seeking individuals involved in corrupt transactions, political scientists have utilised a psychological profile of government officials by incorporating moral integrity into their analyses. Other studies have examined the link between specific organisational structures and incentives to corruption. Empirical analyses, however, concentrate on three broad categories: government policy-induced sources of corruption, natural resource endowments, cultural/socio-political factors.

i) Policy-induced sources of corruption

Policy-induced sources of corruption arise when pervasive regulations exist and government officials have an excessive degree of discretion in applying them. Private parties may be willing to pay bribes to government officials in order to obtain pure rents that the regulations may generate. As Tanzi (1994) argues, the problem becomes worse when regulations lack simplicity and transparency. The following are some of the government-induced sources of corruption that have been identified in the literature[2].

- trade restrictions
- government subsidies
- multiple exchange rate practices and foreign exchange allocation
- low wages in the civil service relative to private sector wages or per capita GDP

Although the bulk of the theoretical literature on rent-seeking has generally concentrated on quantitative restrictions upon international trade, it can be extended to cover other forms of government restrictions upon economic activity. Whilst such rent-seeking competition may sometimes be legal, in other instances it takes illegal forms, such as bribery, corruption, smuggling and other 'hidden' activities. In fact, Krueger (1974) shows that the estimated values of rents associated with 'underground' activities in India and Turkey for the year 1964 were quite considerable.

Multiple exchange rate practices and foreign exchange schemes (whose importance may be proxied by parallel exchange market premia, such as those used by Levine and Renelt, 1992) also lead to corruption. In developing countries, in particular, where state-owned commercial banks ration foreign exchange on the discretion of bank managers, the supply price of bribes could be substantial.

ii) Natural Resource Endowments

Endowments of natural resources, such as crude oil, provide a major source of economic rents since they can be sold at a price that far exceeds their cost of extraction. Sachs and Warner (1995) argue that resource-rich economies are more likely to be subject to extreme rent-seeking behaviour than are resource-poor economies. In Nigeria, for example, oil wealth has been attributed to be one of the main causes of the pervasiveness of rent-seeking activities and corruption. The oil boom of the 1970s, in particular, was responsible for the 'Dutch Disease' syndrome in Nigeria; including contraction of agriculture (the principal non-oil tradeable sector), appreciation of the real exchange rate and a loss of competitiveness of agricultural exports. Although the appreciation of the exchange rate was an inevitable response to the oil boom and an adjustment to a new equilibrium situation, the use of oil boom resources to finance large scale public expenditure programmes introduced 'grand' (political) corruption in Nigeria. The oil boom also engendered laxity in the selection criteria and procedures in the case of many investment projects, resulting in the selection of projects with low or even negative rates of return.

iii) Cultural and/or socio-political sources

Sociological and/or cultural factors such as customs, family pressures on government officials and ethnicity constitute potential sources of corruption. In Nigeria, although traditional values of gift-giving and tributes to leaders often lead to what Brownsberger (1983) describes as "polite corruption", the extent of such corruption is relatively small. The prevalence of this kind of corruption in Nigeria is illustrated by Chinua Achebe (1959), in his novel, **Things Fall Apart.** Here, a strong and determined young man, called Okonkwo, went to the 'great man' of his Igbo village to ask a favour. In seeking the loan of yam[3] seeds to

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[2] See Mauro (1995, 1997).

[3] Yam is a tuber root, like cassava, grown in most parts of West Africa and the Carribean.

plant on his farm, Okonkwo brought a cock, a pot of palm-wine, a kola nut, and an alligator pepper. Offering them to elder, he said:

'[Our father], I have brought you this little kola. As our people say, a man who pays respect to the Great paves the way for his own greatness. I have come to pay you my respects and also to ask a favour'.

Thus, Okonkwo's gift-giving constitutes 'polite' corruption. It should be noted, however, that although gift-giving and tributes to leaders may lead to corruption, not every gift-giving should constitute corruption. A number of authors (Wraith and Simpkins 1963, Lloyd 1967, McMullan 1961) have pointed out that Africans know the difference between a polite gratuity and a bribe and that traditional (Nigerian) culture does recognise that the community leader has a duty to his people, and that this bars systematic exploitation of office. There are also those who believe that modern bribery may not be seen as cognate with traditional gift-giving since it takes place outside the context of a patron-client relationship. Ethnically, the poor man's bribe to the faceless power he will never meet again is completely distinct from his traditional gift to a patron.

In spite of the prevalence of polite corruption, much of Nigerian corruption is underlined by the ethics of dependency relations, ethnic loyalties and attitudinal tendencies, such as greed or love of ostentations, either in the culture at large or among a clique. Evidence of this abounds in developing countries where a number of the elite have mismanaged their own careers and financial affairs, the result being special temptations to corruption. This is again illustrated in another novel by Chinua Achebe (1961), **No Longer at Ease**, where a young civil servant in Nigeria ends up in debt from poor planning and is driven to corruption.

It is also noteworthy that poverty, political instability and other societal forces put pressure on public servants to be corrupt. This is especially so when officials know that their opportunities may vanish following a coup d'etat or a defeat at polls or their kinsmen place expanded demands on them or they feel compelled to maintain a high visible standard of living (Colins, 1965; Nye 1961). Similarly, where neither individuals nor organisations have accumulated wealth for the legal support of their activities or families, politicians may feel forced to apply public resources to personal or sectional ends by embezzling, taking bribes, or distributing jobs and contracts politically.

In the case of the dominance of ethnic loyality in politics, as a source of corruption in Nigeria, Brownsberger (1983) rightly attributes this to the colonialists who tried to pacify warring groups by setting up administrative regions bearing little relation to local loyalties. With independence and self-government, tribes who for centuries had dealt with each other only through war and commerce were forced to co-operate. As a result, politicians in many developing countries view their national governments as collections of resources and opportunities for self-dealing, and that patronage and corrupt exchange would be the tool to bind together various ruling coalitions.

These sociological and cultural causes of corruption are likely to continue for a long time in Nigeria, unless credible legal enforcement measures are put in place. The forces which deter corruption are often weak as some, if not most, of the law enforcement agencies are themselves corrupt. In addition, rulers, politicians and civil servants are highly corrupt, and professional organisations may be incapable of sanctioning their members. Wealthy people who are known to be corrupt are regularly courted and honoured by communities, religious bodies, social clubs and other private organisations. This implies that people who benefit from the largesse of these corrupt people rarely ask questions. Clearly, such a liberal attitude suggests that corruption is endemic in Nigeria.

Table 1 provides a cogent summary of the various determinants of corruption, many of which fit the Nigerian situation. All of the factors relevant to Nigeria may be a result of absence of a properly functioning market system.

Table 1: Factors influencing corruption

1. Wage Considerations:	a) inadequate pay b) fringe benefits and other financial incentives
2. Inefficient internal control:	a) inadequate supervision and control systems b) lack of explicit standard of performance for employees and

	organisations c) poor recruitment and selection procedures for personnel d) too few or too many (non-transparent) rules and procedures (red tape)
3. Insufficient external control:	a) law and order tradition, checks and balances b) lack of information made available to the public and freedom of press c) mechanisms for citizens' participation and complaint d) difficulty of proving cases in court e) high social acceptance of corruption
4. Statutory penalty rate:	a) amount of fine, prison sentence b) administrative sanctions c) prohibition of being ever re-employed in the public sector d) penalties for relatives
5. Amount of distortions or opportunities in the economy:	a) pervasive government regulations b) high statutory tax rates, non-transparent tax regulations c) provision of government services short of demand (government monopolies)
6. Other factors:	a) cultural factors b) culture of bureaucratic elitism and education of civil servants d) leadership e) ethnic diversity

Source: Van Rijckeghem and Weder (1997)

4 Statistical evidence

As stated earlier, corruption is both pervasive and significant in Nigeria. For the past five consecutive years, Nigeria has been ranked by the Berlin-based Transparency International as the most corrupt country in the world (Table 2). This ranking was based on a weighted average of corruption perception indices (CPI). The overall index assesses the degree to which public officials and politicians in particular countries are involved in such practices as accepting bribes, taking illicit payments in public procurement and embezzling public funds. The index ranges from a score of 0 (a highly corrupt country) to 10 (a totally corrupt-free country).

Few would dispute Nigeria's premier position in the corruption league table. Corruption is found in virtually every stratum of society, but especially so in corridors of power – the

leadership. As the cliché goes, *"keeping an average Nigerian from being corrupt is like keeping a goat from eating cassava"*. Rarely is a distinction made between cash earned privately and cash removed from the public purse. On the one hand, this attitude could be attributed to a deep sense of obligation to one's family and ethnic group, but on the other hand to selfishness, greed and avarice. The former viewpoint is reflected in the **Financial Times** (1993) survey on Nigeria which found that a number of Nigerians see nothing wrong with "using public funds to disperse favours to a cousin or to build a well for one's village, as it is an informal means of redistributing wealth." Such an act is considered as a lubricant or a positive sum game of "give and take" which is widely practised in employment offers, award of contracts, import licences and even in obtaining admission to institutions of higher education. The visible riches of these corrupt and the greedy spur the poor to imitate their life styles and modes of acquisition of wealth.

The current democratically elected government of President Obasanjo who has welcomed the 1999 corruption index table published by Transparency International. A statement issued by the Presidential spokeman, Doyin Okupe, said:

"President Obasanjo has no objections to the results shown in the (Transparency International) poll. The poll shows the magnitude of the challenge the present administration is facing and addressing energetically. It should also draw further attention to the need for Nigerians to collectively support the Federal Government's efforts to stem corruption and redeem Nigeria's image with the international community." (**Agence France-Presse**, October 27, 1999)[4]

Even so, many economic and political commentators in Nigeria have questioned the Transparency International index. Firstly, the table consists of only less than half of the countries in the world. Secondly, the corruption index reflects only the perception of business people in the industrialised countries. Hence the corruption index concentrates solely on the demand side of corruption whilst ignoring the supply side. Thirdly, the corruption index says nothing about the weights attached to various sorts of corruption. In fact, it ignores the major vehicle for bribery and corruption - the company to company kickbacks which involve multinational companies from the so-called bribery-free countries of the developed world. This omission is reflected in a warning by the Director of the Transparency International, Peter Eigen, who said:

[4] See, also, Transparency International web site http://www.gwdg.de/~uwvw/1999Press.html.

"corruption is perceived to be greatest in the Third World, but I urge the public to recognise that a large share of the corruption is the explicit product of multinational corporations, headquartered in leading industrialised countries, using massive bribery and kickbacks to buy contracts in the developing world" (Agence France Presse, October 27, 1999).

He further added*, "the Third World would be less corrupt if developed states stopped offering bribes".*

In view of this observation, Transparency International has now started to compile a separate league table of Bribe Payers Index (BPI) to address the supply side of corruption in developing countries.

i) Methodology

The corruption index does not quantify the magnitude of corruption per se. It cannot therefore be relied upon for evaluating the extent of corruption in monetary terms. While there are no direct ways of measuring corruption, there are several indirect ways of getting information about its prevalence in a country. These include reports on corruption availabe from published sources including newspapers such as the *Financial Times, The New York Times, Le Monde, The Economist*; case studies of corrupt agencies such as tax administrations, customs, and police; and questionnaire-based surveys, relating to a specific agency or a whole country. The World Bank has relied on some of these surveys in its work on Tanzania, Uganda, India, Ukraine and other countries (Tanzi, 1998).

Anecdotal evidence on the magnitude of corruption in Nigeria can be found in media sources and proceedings of various tribunals set up to investigate cases of alleged financial impropriety on the part of government officials. Such evidence, however, does not tell the whole story as it relates to isolated acts of corruption. It is therefore crucial to utilise some methodological approaches to measure the magnitude of corruption. One such approach is based on the technique for estimation of the size of the hidden economy. Bhattacharyya and Ghose (1998) argue that the disaggregated hidden economy estimates are very informative in identifying the growth of corruption. Evidence from India shows that the high rates of growth of industrial sector's hidden economy during the 1980s and 1990s coincide with the timings of a large number of corruption cases uncovered by the police departments in India (Bhattacharyya, 1999).

ii) Modelling the 'hidden economy'

The black economy (also known as hidden, underground, irregular, unofficial, shadow or illegal economy) is used to describe unreported activities or hidden transactions in an economy. It is defined as that part of economic activity which generates factor incomes, such as wages, salaries and profits arising from the production of goods and services, but which cannot be estimated from the regular statistical sources used to compile the income measure of gross domestic product (Frey and Weck-Hanneman, 1984).

Underground activities exist in every country but its size varies across countries, reflecting differences in the tax burden, the sophistication of the regulatory system, success in prosecuting tax offenders, and the degree of tax burden or tax 'morality'. But the incidence of the black economy may be lower in the developed countries than in the developing countries where the bulk of economic transactions are conducted in cash and policy makers and politicians are relatively dishonest and corrupt. The size of the hidden economy may also vary over time within the same country.

The existence of black economy leads to a gross underestimation of the true size of the economy and may have considerable economic and political implications. It may bias the calculations of effective tax rates as well as estimates of savings and consumption ratios. The bias in the tax structure will have serious implications for budgetary requirements and for income distribution in the society since people in the hidden economy evade taxation. Thus, accurate estimates of the size of the black economy may help policy makers to formulate efficient tax policies.

A number of techniques have recently been employed to estimate the size of the hidden economy[5]. One such technique is the 'factor analytic' approach, based on the statistical theory of *unobserved or latent variables.* A variant of this approach is the MIMIC (Multiple Indicators and Multiple Causes) modelling, which is a special case of LISREL (Linear Interdependent Structural Relationship) statistical model of Zellner (1970), Joreskog and Van Thillo (1973), and Joreskog and Goldberger (1975).

A MIMIC is a structural econometric model for estimating an equation in which the dependent variable is unobservable (latent). Frey and Weck-Hannemann (1984) pioneered the use of MIMIC modelling in the context of the hidden economy. Since then, a number of other studies have employed this technique (Aigner et al. 1986; Schneider 1997; Giles 1997, 1999; Tedds, 1998). It is a powerful technique for estimating the underground economy, as it allows for simultaneous interaction between multiple explanatory variables and multiple

indicators of the hidden economy. The latent variable is linked, on the one hand, to a number of observable indicators (reflecting changes in the size of the unreported economy); and on the other hand to a set of observed causal variables, which are considered to be important determinants of the unreported economic activity. The MIMIC model equations can be written as:

$$\mathbf{y} = \boldsymbol{\lambda}\eta + \boldsymbol{\varepsilon} \quad (1)$$

$$\eta = \gamma'\mathbf{x} + \zeta \quad (2)$$

where **y** is a column vector of indicators of the latent variable, η, and **x** is a column vector of "causes" of η. In other words, equation (1) is the measurement model for η and equation (2) is the structural equation for the latent variable, η. ε and ζ are the measurement and structural errors, respectively, and are assumed to be mutually uncorrelated.

Figure 1 shows the interrelationships between the (unobservable) hidden economy (η), its determinants (**x)** and the indicators (**y**). The theoretical literature on the hidden economy has identified four broad determinants: burden imposed by the public sector on individuals (TB), tax morality (TM), labour market conditions (L) and structural factors (SF). In this context, and for purposes of estimating the size of the hidden economy (η), equation (2) can be re-written as:

$$\eta = \gamma_1 TB + \gamma_2 TM + \gamma_3 L + \gamma_4 SF + \zeta \quad (2a)$$

The burden on the official economy may consist of burden of taxation (measured by either the average or marginal tax rate) and the burden of regulation (measured by the number of regulators or the ratio of the number of public sector employees to total employment). The a priori expectation on the coefficient of the tax 'burden' is negative, implying that an increase in the burden will drive people into the hidden economy. Tax morality, however, reflects the readiness with which individuals leave the official economy. A decline in tax morality will reduce people's trust in government and will consequently increase their willingness to go underground. Frey, Weck and Pommerehne (1984) suggest that the consequences of tax morality can be checked by a growing intensity of public controls and a rise in expected punishment, which will reduce the return on hidden activities.

In the case of the labour market, it is hypothesised that the incentive to work in the hidden economy is high for the unemployed, since they can work in the underground economy while at the same time receiving unemployment benefits. It is noteworthy, however, that while the

[5] For discussion of these approaches see Erard (1997) and Giles (1997).

demand for underground activity rises with unemployment, it is also likely that the supply of job opportunities in the hidden economy will fall with rising unemployment. Overall, the effect of unemployment on the shadow economy is ambiguous, depending upon the elasticities of demand and supply with respect to the rate of unemployment.

The level of economic development can also influence the hidden economy. Individuals with low per capita real disposable income will have a strong incentive to hold multiple jobs and to pay taxes only on the first job. Empirical evidence from Italy, however, suggests that the size of underground economy in the rich North is larger than in the poor South. This positive relationship between per capita income and hidden economic activity suggests that the supply of hidden economy jobs may increase with an increase in per capita income. The expected sign of the coefficient of the level of development, however, is a priori ambiguous.

The theoretical literature on the hidden economy suggests three indicators: the growth rate of the 'official' real GDP, labour market participation rate, and monetary variables. These constitute the elements in the **y** vector in equation (1) above. An increase in the underground economy implies that inputs (particularly labour) move out of the official economy, with a depressing effect on the growth of the observed GDP. In the case of monetary aggregates, the literature hypothesises a positive relationship between hidden economy activity and cash-demand ratio, as the bulk of transactions are conducted in cash.

iii) Estimates of the hidden economy in Nigeria.

In utilising the MIMIC approach to estimating the size of the hidden economy in Nigeria, we use three types of determinants and two types of indicators of the hidden economy. The causal factors are: tax burden (measured by the share of taxes in GDP), inflation and real per capita income. We have not, however, included unemployment and sectoral variables in the list of determinants due to lack of reliable data. The two indicators used in the MIMIC analysis are changes in male participation rate (DMALEF) and changes in cash-demand deposit ratio (DCPDD). The growth rate of GDP is excluded from the estimation to avoid double counting.

Table 3 shows the estimated parameters of the MIMIC model for the Nigerian economy for the period 1960-1997. The LISREL coefficients of the tax rate (0.46), inflation (-0.42) and per capita income (-0.32) all possess the expected signs and are statistically significant at the 5 per cent. These estimated coefficients are then normalised to sum up to unity for purposes of determining the size of the hidden economy. Table 4 shows the estimates of the

hidden economy for the years 1961-1997. The size of the hidden economy shows a rapidly increasing trend; it increased substantially throughout the seventies and declined in 1984-85 before rising again. The declining trend in mid-1980s may reflect General Buhari's new measures to curb corruption and indiscipline. Tagged "War Against Indiscipline" (WAI) the short-lived era of the Buhari administration had succeeded in reducing widespread corruption in both public and private sectors of the economy. But with the ascendancy of General Babangida to power and abolition of the decrees which empowered the WAI campaign, the level of corruption rose again. Indeed, the Babangida administration has been widely criticised as the worst military regime in Nigeria in terms of corruption and the marginalisation of the middle class; as during his rule the rich became richer and the poor poorer. Although Babangida's successor, the late General Sani Abacha, has revisited General Buhari's WAI policy by coining it "War Against Indiscipline and Corruption" (WAIC), it had no effect whatsoever in curbing the tide of corruption even though it was generally believed that the establishment of the Failed Bank Tribunals by General Abacha in 1995 had instilled some financial discipline in the banking system. If anything, the magnitude of the hidden economy has achieved record levels (over 60 per cent of GDP) during the Abacha era (1993-1997). The present anti-corruption bill signed by President Obasanjo is designed to put in place an appropriate institutional framework for dealing with the menace of corruption in Nigeria.

iv) Econometric analysis of the impact of corruption

To evaluate the effects of corruption on the Nigerian economy, we utilise the estimated size of the hidden economy (a proxy for corruption) in an economic growth framework. The procedure follows a conventional growth model in which corruption is introduced as an input, in addition to labour and capital[6]. Table 5 shows estimated growth equation for Nigeria during the period 1961-1997. The inclusion of exports into the equation follows the large number of empirical studies which investigate the export-led growth hypothesis (e.g. Feder, 1983; Balassa, 1985; Salvatore and Hatcher, 1991; Greenaway and Sapsford, 1994).

As is widely expected, the estimated coefficient on corruption is negative and statistically significant at the 1 per cent level. In contrast, the estimated coefficient on domestic investment is also negative, but not significant. Although out of line with the theoretical

[6] For a detailed discussion on the derivation of the growth regression equation in developing countries, see Balasubramanyam, Salisu and Sapsford (1996).

expectation, the negative investment coefficient is not surprising, as this shows the inefficiency of domestic investment in Nigeria, which itself may have been severely influenced by corruption. This result appears to lend support to the widely held view that corruption encourages capital intensive projects in Nigeria. In other words, the efficiency of investment is severely influenced by corruption. This finding concurs with conclusions of a number of empirical studies elsewhere (e.g. Shleifer and Vishny, 1993; Mauro, 1997; Tanzi and Davoodi, 1997; Ades and Di Tella, 1997) that corruption adversely affects the productivity of public investment and distorts the effects of industrial policy on investment.

In the case of the labour force variable, the estimated coefficient is negative and statistically insignificant. This suggests that in spite of the abundance of labour in the country, it does not have any significant effect on growth. In contrast, exports, mainly dominated by oil, appear to have an unambiguously positive and statistically significant effect on economic growth in Nigeria.

A Chow test for structural stability of the model shows evidence of a structural break in the growth equation. The cumulative sum of squares (CUSUMSQ) of recursive residuals of he model, plotted in Figure 2, suggests that a structural break has occured in 1978/79 which coincides with the beginning of the second democratic experience and the second oil price shock, both of which created opportunities for rent seeking activities in Nigeria.

5 Conclusions

The paper has examined the various theoretical and empirical issues on the determinants and impact of corruption. The statistical exercise on Nigeria suggests that the magnitude of corruption is quite considerable, ranging from 11 per cent of GDP in the 1960s to around 60 per cent in the 1990s. This undoubtedly has had serious consequences for growth and development in Nigeria. Econometric estimates of the link between corruption and economic growth suggests that corruption has an adverse effect on the growth rate of GDP in Nigeria. This perhaps explains why Nigeria is so rich and yet so poor. There is need for the current Nigerian civilian administration to take the issue of corruption seriously and introduce appropriate measures to remedy this cronic problem. The anti-corruption bill recently signed by the Presidency is a right step in the direction, but appropriate incentive structures need to be put in place if current efforts at fighting corruption were to have any meaningful results. The political leadership in Nigeria must take honest and credible measures to (a) lead by example, showing zero tolerance on corrupt behaviour; (b) develop credible institutional

(legal) framework for dealing with corrupt practices; (c) draw measures that would reduce both the demand for and supply of corruption. On the demand side, the government should scale down regulations and other policies with transparent honesty. On the supply side, this can be done by taking appropriate measures that will improve public sector wages, incentives towards honest behaviour, instituting effective controls and penalties on the public servants. This aspect demands urgent attention as the perceived high correlation between corruption and inefficiency of public servants may retard economic growth even in the absence of corruption.

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Figure 1: Path Diagram for the hidden economy

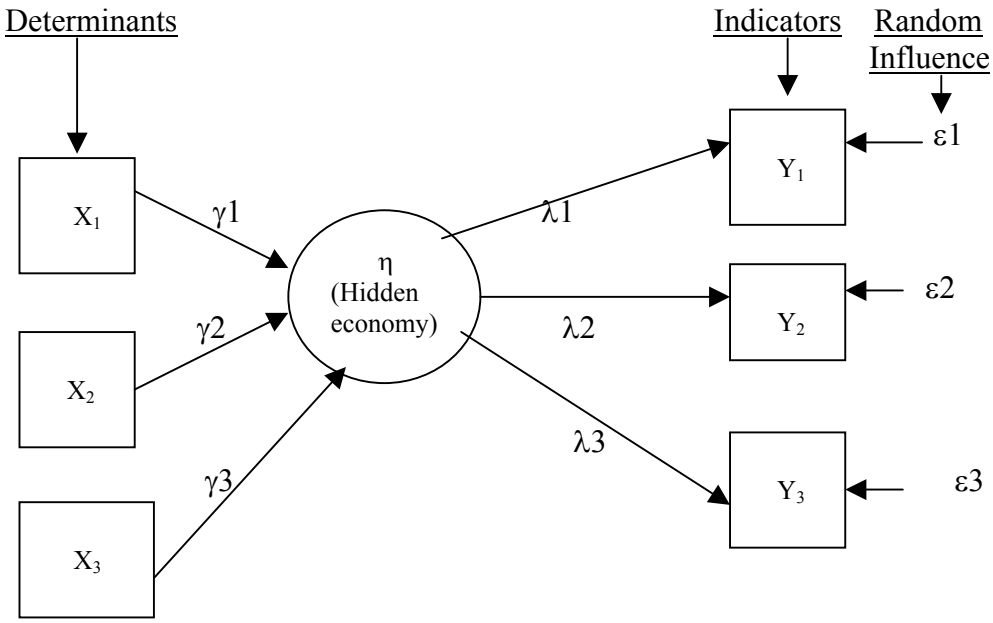

Table 2: The 1999 Corruption Perception Index

1 Denmark	10.0	50 Jamaica	3.8
2 Finland	9.8	Lithuania	3.8
3 New Zealand	9.4	South Korea	3.8
Sweden	9.4	53 Slovak Republic	3.7
5 Canada	9.2	54 Philippines	3.6
Iceland	9.2	Turkey	3.6
7 Singapore	9.1	56 Mozambique	3.5
8 Netherlands	9.0	Zambia	3.5
9 Norway	8.9	58 Belarus	3.4
Switzerland	8.9	China	3.4
11 Luxembourg	8.8	Latvia	3.4
12 Australia	8.7	Mexico	3.4
13 United Kingdom	8.6	Senegal	3.4
14 Germany	8.0	63 Bulgaria	3.3
15 Hong Kong	7.7	Egypt	3.3
Ireland	7.7	Ghana	3.3
17 Austria	7.6	Macedonia	3.3
18 USA	7.5	Romania	3.3
19 Chile	6.9	68 Guatemala	3.2
20 Israel	6.8	Thailand	3.2
21 Portugal	6.7	70 Nicaragua	3.1
22 France	6.6	71 Argentina	3.0
Spain	6.6	72 Colombia	2.9
24 Botswana	6.1	India	2.9
25 Japan	6.0	74 Croatia	2.7
Slovenia	6.0	75 Ivory Coast	2.6
27 Estonia	5.7	Moldova	2.6
28 Taiwan	5.6	Ukraine	2.6
29 Belgium	5.3	Venezuela	2.6
Namibia	5.3	Vietnam	2.6
31 Hungary	5.2	80 Armenia	2.5
32 Costa Rica	5.1	Bolivia	2.5
Malaysia	5.1	82 Ecuador	2.4
34 South Africa	5.0	Russia	2.4
Tunisia	5.0	84 Albania	2.3
36 Greece	4.9	Georgia	2.3
Mauritius	4.9	Kazakhstan	2.3
38 Italy	4.7	87 Kyrgyz Republic	2.2
39 Czech Republic	4.6	Pakistan	2.2
40 Peru	4.5	Uganda	2.2
41 Jordan	4.4	90 Kenya	2.0
Uruguay	4.4	Paraguay	2.0
43 Mongolia	4.3	Yugoslavia	2.0
44 Poland	4.2	93 Tanzania	1.9
45 Brazil	4.1	94 Honduras	1.8
Malawi	4.1	Uzbekistan	1.8
Morocco	4.1	96 Azerbaijan	1.7

Zimbabwe	4.1	Indonesia	1.7
49 El Salvador	3.9	98 Nigeria	1.6
		99 Cameroon	1.5

Source: Transparency International Website
(http://www.transparency.de/documents/cpi)

Table 3: LISREL Maximum Likelihood Estimates of the Hidden Economy in Nigeria

	RPERCAP	TAX/GDP	INFL
Coefficient	-0.32	0.46	-0.42
Standard Error	0.16	0.16	0.13
T-Ratio	-2.00	2.88	-3.21

Table 4: Estimates of Hidden Economy in Nigeria

Year	Nmillion	% of GDP
1960	4910.2	9.64
1965	7327.7	11.54
1970	10076.7	12.83
1973	13185.4	13.49
1974	24392.2	22.45
1975	27217.3	26.43
1980	40610.9	32.54
1981	37567.2	34.65
1982	39555.8	36.57
1983	46875.5	45.76
1984	30303.6	31.08
1985	37972.3	35.50
1986	40187.8	36.65
1987	40995.2	37.65
1988	47578.4	39.76
1989	54313.8	42.34
1990	56267.1	40.54
1991	61690.9	42.43
1992	65152.2	43.54
1993	83575.6	54.65
1994	89138.4	58.65
1995	102020.7	65.43
1996	107250.7	64.65
1997	101304.4	58.76

Based on the LISREL modelling.

Table 5: Estimated Growth Equation: Dependent variable - Annual percentage change in real GDP, 1960-1997

Variable	Coefficient	Standard error	T-statistic	P-value	
CONS	1.451	6.621	0.219	0.828	
I/GDP	-0.072	0.210	-0.344	0.973	
HD/GDP	-0.058	0.007	-8.074	0.000	
X_{GR}	0.274	0.063	4.375	0.000	
LF_{GR}	0.229	2.499	0.912	0.927	

Diagnostic Tests

* Test Statistics	LM Version	F Version
* A:Serial Correlation	CHSQ(1) = 2.2972[.130]	F(1, 32) = 2.0590[.161] *
* B:Functional Form	CHSQ(1) = 3.5247[.060]	F(1, 32) = 3.2716[.080] *
* C:Normality	CHSQ(2) = .089913[.956]	Not applicable *
* D:Heteroscedasticity	* CHSQ(1)= 4.3465[.037]	F(1, 36) = 4.6496[.038] *

I/GDP = Ratio of domestic investment to GDP
HD/GDP = Hidden Economy as a percentage of GDP
X_{gr} = Growth rate of exports
LF_{gr} = Growth rate of labour force

Diagnostic Tests

A: Lagrange multiplier test of residual serial correlation
B: Ramsey's RESET test using the square of the fitted values
C: Based on a test of skewness and kurtosis of residuals
D: Based on the regression of squared residuals on squared fitted values

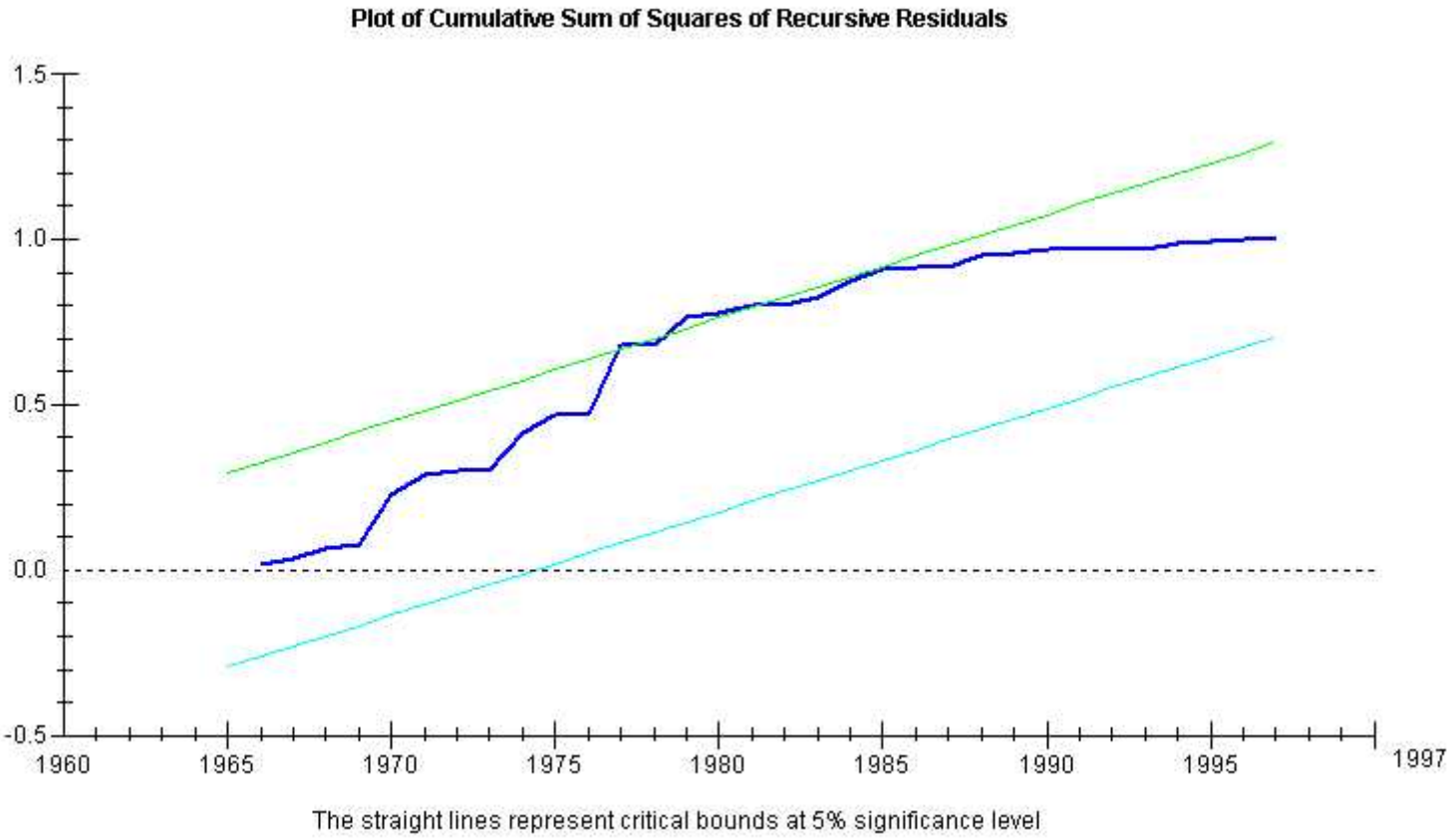

Figure 2: CUSUM^2 test for the economic growth regression