Decentralization and Corruption in Nigeria's Education Sector

Comments welcome

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Does decentralization improve government performance by reducing corruption? During the transitions to democracy in the 1990s, reformers praised decentralization as an antidote to authoritarianism. This was not unreasonable since dictatorships tend to concentrate decision-making authority at the expense of local governments. Decentralization also figured prominently in prescribed remedies to underdevelopment. The Millennium Challenge Corporation now counts decentralization among its indicators of government effectiveness, explaining that it improves "the quality of public service provision, civil service competency and independence from political pressures, and the government's ability to plan and implement sound policies."

However various empirical studies question decentralization's benefits. Countries with more tiers of government possess higher levels of perceived corruption (Treisman, Daniel 2002). Decentralization does not, by itself, appear to improve government performance (Treisman 2007; Fisman and Gatti 2002, 325-45; Putnam, Leonardi and others 1993). It also has a mixed record in terms of its contributions to democratic consolidation (Selee 2006) unless it is linked to broader development strategies (Wunsch and Olowu 1995). Devolution of authority must also consider preexisting local or indigenous structures of authority in order to be effective (Boone 2003, 355-80). This essay presents some preliminary findings concerning the impact of government decentralization on corruption in Nigeria's educational sector. Using new data and mixed methods, I find that decentralization corresponds with higher levels of corruption in school construction. However it also correlates with lower levels of corruption when considering the impact of education spending on classroom size.

Nigeria offers a useful test for several reasons. It has experimented with educational reforms and most of its governments place a high priority on education. The country's oil resources also present accountability problems stemming from the "paradox of plenty" (Karl 1997). Most importantly for experimental purposes, the federal government's role in education fluctuated among the country's three tiers of government. Focusing on a single country over time therefore generates comparative leverage: we can control for historical and cultural factors and by treating each year as a discrete result I generate at least 40 observations for each test. A case study also permits the integration of relevant qualitative information such as changes in the education policy structure that shaped – or limited – the center's control over policy making and implementation.

Corruption in Nigeria is a widely studied topic (Diamond 1993, 215-25; Smith 2007; Achebe 1983). The subject receives a huge amount of international attention, often because Nigeria consistently ranks among the most corrupt countries in the world according to Transparency International. Since the Economic and Financial Crimes Commission recently estimated that US$500 billion was stolen or lost between 1960 and 2007, this reputation is perhaps not undeserved (da Costa 2008). At the time of this writing, the attorney general announced possible indictment of the former president Olusegun Obasanjo for corrupt oil contract dealings. Two dozen former governors are facing indictment by the Independent Corrupt Practices and Other Related Offences Commission (Agba 2008; Uwugiaren 2008).

My study differs from existing research by developing a novel metric that measures the gap between actual and expected policy outputs, given spending levels. I claim that this difference captures corruption. I begin by briefly reviewing the literature on decentralization. I outline changes in Nigeria's implementation of education. Then I explain my variables, graphically illustrate them, and summarize important historical trends. After conducting statistical tests for the impact of decentralization on corruption, I conclude by noting important implications and mentioning possible avenues of future research.

DECENTRALIZATION'S APPEAL

In this section I explain the political and economic rationales for decentralization. Politicians and practitioners expect it to reduce corruption, promote local development, and create a basis for conflict resolution. I also justify my focus on education as an appropriate dependent variable. Because education contributes to human capital formation, many governments in the developing world heavily invest in education. This is clearly true for Nigeria, which this paper treats in detail.

Why Decentralize?

The World Bank's Public Finance Program defines decentralization as "the transfer of political, fiscal and administrative powers to subnational governments."[1] Because subnational governments are closer to the people, it is theoretically better equipped to determine and respond to citizen preferences. Theoretically, decentralization offers a number of benefits, according to the logic of markets. When local governments compete to attract citizens, those that fail to perform will be crowded out (Donahue 1997, 73-81; Tiebout 1956, 416-24). With government "closer to the people," holding specific politicians accountable becomes easier too. Not only are there fewer monitoring problems but more politicians can be held responsible for their performance. All of this should increase the overall risks of engaging in corrupt behavior (Treisman, Daniel 2002).

Local governments can also serve as incubators for experimental policies which can then be reproduced at the national level. This formed a core philosophical basis of the most recent Republican takeover of the U.S. House of Representatives: "The 1990s must be a decade of invention, innovation, creativity and reform," said Rep. Gingrich four years before he became speaker. "We must decentralize power and programs away from Washington. We must liberate individuals, neighborhoods and local and state governments so they can experiment with new and better methods of getting the job done."[2] Recent research in fact argues the opposite is the case, with centralized democracies experimenting far more with policy innovations (Cai and Treisman 2007).

Decentralization also presents a possible solution to authoritarianism legacies because it weakens the central state. Africa experienced a variety of centralization with the rise of one party states and the affinity for elite political control in the post-colonial era (Hyden 2006; Baregu 1994, 158-181). Centralization in the 1960s and 1970s facilitated centrally guided development strategies in Nigeria, the Ivory Coast, Tanzania, and Ghana. In Cameroon, Kenya and Uganda, centralization progressed so far as to delete clauses pertaining to federalism from their constitutions (Wunsch and Olowu 1995). Across the globe in the 1990s, decentralization emerged as a practical means of enhancing citizen participation in new democracies, and as an alternative to declining welfare states (Saito 2008). Proponents claim that by linking decentralization to development, ceding power to subnational tiers of government has also promoted conflict resolution in the Western Sahara and elsewhere (Ben-Meir 2008).

A different view of decentralization questions its benefits for a variety of reasons. It can complicate the search for national identity in newly independent states of the Third Wave. In the large post-communist countries for example, reformers face the challenge of integrating "territorially fragmented polities" which had previously been held together by a strong Soviet Union (Solnick 2002, 171-205). Skeptics of decentralization argue that state and local

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[1] http://www1.worldbank.org/wbiep/decentralization/ (accessed August 13, 2008).
[2] Rep. Newt Gingrich (D-GA). Heritage Lecture, "The Washington Establishment vs. the American People: A Report from the Budget Summit," August 22, 1990.

governments struggle to attract well qualified bureaucrats, in part because national governments can pay higher salaries. The monitoring problems arguably increase – rather than decrease – as it is easier to conduct oversight of one central government mechanism than many subnational governments. With a larger number of localized, autonomous bureaucrats, each one is in a position to extract a bribe (Treisman, Daniel 2002). Rose-Ackerman argues that a weak central government impairs implementation of anti-corruption reforms. When government cannot control illicit behavior at multiple centers of local government, a system of "competitive corruption" may emerge. Alternatively, a mafia-style organization may step in to fill in the void left by an inefficient or weak state (Rose-Ackerman 1999).

The competitive corruption model carries a particular appeal in Africa, where Mamdani describes the legacy of colonial rule as "decentralized despotism." Both direct and indirect rule buttressed sympathetic local authority figures, a strategy which helped imperial powers dominate the nation as a whole. After independence many of these perverse structures remained intact (Mamdani 1996). This helps explain why decentralization often failed to strengthen democracy once the colonial shadow faded. In Botswana, it empowered local chiefs to abuse new authorities to raise revenue (Molutsi 2004, 159-181). Decentralization reforms similarly failed to strengthen democracy in Ghana, Senegal, and Côte d'Ivoire because implementation did not consider the variety of local power structures. In the end, "regimes are unlikely to devolve real power and resources to rural leaders they do not trust and/or cannot control" (Boone 2003, 355-80). In part, central governments also fear that decentralization will inspire secessionist tendencies (Ben-Meir 2008).[3] Emerging research today centers more on the conditions under which decentralization succeeds, rather than treating it as a panacea (Saito 2008).

Decentralization and Education

Education is a worthy focus for a study of the effects of decentralization. In the industrialized world, it also is the subject of countless studies of federalism, mostly because the American education system provides for a large measure of local control. Education also carries long term benefits conducive to economic growth (Barro and Lee 2001, 541-63). Baum and Lake, for example, argue that investments in these sectors create significant indirect effects (Baum and Lake 2003, 333-47). Even a skeptic such as Schultz notes that educational investments in Africa do have positive returns on growth, even though the effects vary at different levels of education (Schultz 1999, 67-88). Moreover, the United Nations Development Program's Human Development Reports and other documents from the development community testify to a consensus around education and human capital among implementers. Providing effective and efficient education is therefore a cornerstone of social policy in the developing world, and of studies of federalism in the developed world.

The Nigerian government's policy planning documents share the view that education generates human capital. The country's National Development Plan for 1962 – 1968 stated that the "Education Programme is designed to increase as rapidly and as economically as possible the high level manpower which is indispensable to accelerated development." It committed the federal government to providing substantial assistance to the states for this purpose (Federal Ministry of Economic Development 1960). The post-civil war government noted that education "attaches high premium to human skills as a factor of production in the development process" (Federal Government of Nigeria 1970). In 1977, a task force on education chaired by Chief Simeon Adebo laid out a National Policy on Education. Its White Paper declared that education

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[3] Englebert and Hummel's excellent empirical analysis of Africa's "secessionist deficit" finds reason to believe that such concerns are overstated (Englebert and Hummel 2005, 399-427).

was the "greatest investment that a nation can make for the development of its economic, political, sociological and human resources."[4] A number of contemporary Nigerian social scientists share this view as well (Aregbeyen 1996). Persuaded that education is a sound political and social investment, Nigeria has spent heavily on education since independence. The next section attempts to briefly outline this history.

Finally, education warrants study because corruption in that sector disproportionally impacts developing societies. Transparency International points out that not only does corruption in education adversely affect human capital formation, education also an area in which most citizens interact with government regularly. Corruption can arise in a variety of ways, including corrupt teachers or principles demanding extra fees from students. In this paper I focus on corruption only at the policy level.

EDUCATION POLICY IMPLEMENTATION FRAMEWORK

In what follows, I make clear that the government repeatedly pledges its devotion to education spending. I also provide an overview of how Nigeria has historically implemented education policy to give a sense of the federal government's varying role. I argue that despite this variation, tests using only federal spending data are both defensible and similar to existing research.

In Nigeria's run up to independence in 1960, the government regularly accorded education top priority. In 1959, the Federal Minister of Education appointed a commission to study educational planning for the first decade of Nigeria's independence. In 1961, the Federal Government pledged to implement key recommendations of the Ashby Commission, as it became known, including "progressive improvement in primary education throughout the Federation so that the foundation of national development may truly be laid." The federal government declared that its multi-year development plans would "accord the highest priority to education." With an eye towards anticipated manpower needs for 1970, the Commission set targets for all educational levels (Federal Government of Nigeria 1961). Policy makers knew that a post-colonial Nigeria would need to train a new generation of bureaucrats, politicians, and entrepreneurs.

Up until 1970, primary and secondary education was largely in the hands of private voluntary organizations that were financially supported by the federal government. Like elsewhere in Africa, missionaries played a large role in education before and during colonialism (Abernethy 1969). In the 1960s, the federal government moved in. Vast disparities in the conditions between public and private schools prompted the federal government to set up the Asabia Commission in 1967. The government swiftly adopted the Commission's main recommendation that the states take over all private schools and schools run by private voluntary organizations. Over the next several years, the federal military government proceeded to abolish various state and local institutions such as the State Advisory Board of Education, the Local Education Authorities, and the Teachers' Council, which enforced discipline (Akinkugbe 1994).

All these measures increased the federal government's increasing role in education. In 1971, an influential Commission led by Chief Simon Adebo called the education a "cumbrous patchwork." It proposed complete government control for planning, financing and running of the schools.[5] The Supreme Military Council responded by issuing a decree in 1972 giving the

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[4] *West Africa* editorial, "Hard Road for Education," May 21, 1979, p. 871. Similarly, the Ministry of Health wrote that "the health of the people not only contributes to better quality lives but is also essential for the sustained economic and social development of the country as a whole" (Federal Ministry of Health 1996).
[5] Editorial, "Adebo and Education," *West Africa*, November 26, 1971, p. 1379.

federal government increased authority over education and giving it supremacy in the instance of a contradiction with state or local law (Taiwo 1982).

The year a new regime took over in 1975, a government white paper committed the Federal Government to an ambitious role in education: "Education in Nigeria is no more a private enterprise but a huge Government venture that has witnessed a progressive evolution of the Government's complete and dynamic intervention and active participation" (cited in Taiwo 1982, 188). A constant in the federal government's involvement in education since then has been the Universal Basic Education (UBE), the government's principal program for primary education. In 1977, a task force led on education laid out a National Policy on Education. Its White Paper declared that education was the most important investment Nigeria could make for its socio-economic development.[6] Then in 1979 the new constitution guaranteed free primary and secondary education as a basic right. Two years later, the democratic government's National Policy on Education called education "a huge Government venture" that is "an instrument par excellence for effecting national development" (Federal Government of Nigeria 1981).

At first the federal government assumed all the fiscal responsibilities for UBE but in 1977 it requested the states' assistance. With the erosion of their tax base under military regimes, the states were in a weak position to assist but by 1981 the federal government had withdrawn from its funding obligations. Strapped for cash because of declining transfers from the federal government, the states in turn made the local government areas (LGA's) responsible for funding most of primary education. This led to various management crises in education during the 1980s when teachers went unpaid and unions complained about work conditions.

Subsequent governments remained committed to Universal Basic Education, formally if not substantially. In 1988 the federal government established the National Primary Education Commission (NPEC) to help share costs. The NPEC was abolished in 1991 and then re-established in 1993, along with State Primary Education Boards (Akinkugbe 1994). Nigeria signed the "Jomtiem Declaration of Education for All" in 1990, an international agreement committing nine developing nations to reducing illiteracy, and maintaining various government programs to promote and fund education.

In 1991 the federal government embarked on an unusual experiment for an authoritarian regime: true to the 1989 constitution's calls for decentralization of education, it abolished the National Primary Education Commission and turned primary education over to the 453 local governments (Akinkugbe 1994). To promote compliance with national standards, it established a bureaucracy of federal inspectors who quickly became unpopular with the Nigeria Union of Teachers (NUT). Proponents of free primary education at the time called the reforms "tragic and unfortunate" and a recipe for "chaos."[7] The government undertook the reforms with only modest cuts to the line in the federal budget for education and (significantly) a five percent increase in the general revenue allocation to the states. A year later total primary enrollments reached historic highs for the country. In 1993, primary enrollments increased even further, surpassing 15 million pupils. After two years of agitating by the teachers' union, the federal government re-established the NPEC, tasking it with funding and managing primary education and preventing future strikes (Obidi 1998, 274-80). Several years after Babangida left office, a study by the NPEC and the World Bank concluded that the restoration of the federal government's authority over teacher salaries had normalized their payments (National Primary Education Commission).

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[6] *West Africa* editorial, "Hard Road for Education," May 21, 1979, p. 871.
[7] "Muddling Through Education," *The Nigerian Economist*, January 21, 1991, pp. 23-24.

UBE has remained a cornerstone, at least nominally, of all the governments since it began, including the democratic government that came to power in 1999. Bold constitutional provisions again enshrined the federal government's commitment to UBE.[8] Current plans call for 100 percent free education for all by 2015, with special attention devoted to eliminating gender gaps.

Is Decentralization or Democratization at Work?

Although the federal government consistently describes education as a priority, its involvement in implementation and funding clearly varies. In general, state and local governments finance education through taxes, money received from the federal revenue allocation system, and from special federal grants. Through a federal revenue allocation system, states receive grants from the federal government outright based on pre-determined principles of allocation. At various times since 1976 these grants have been provided directly to local governments. States also receive additional grants based on a "derivation principle," whereby each state receives a set share in proportion to its contribution to the national economy (Amuwo, Agbaje and others 2000; Olowononi 2000, 107-40; Onwudiwe and Suberu 2005). The money received through derivation and revenue allocation is discretionary for the states, meaning they have considerable latitude in how to spend it.

The government's revenue from oil exports has grown considerably since the 1960s, increasing the size of grants to states and growing the discretionary funds at the disposal of state and local officials. The total oil revenue is well over US$300 billion since 1970, according to a recent report by Nobel Laureates. Because these revenues accrue to the center, this creates disincentives for subnational tiers of government to raise revenue through taxation or other means. Instead, it stimulates demands for the creation of new states and local governments because subnational units are entitled to grants through the revenue allocation system. It also increases the political importance of the federal government for distributive decisions in general (Obi 2000, 261-275; Suberu 1991, 499-522).

Despite the federal government's varying role in supplying education, I believe federal spending provides a useful measure of education corruption for four reasons: First, even if the government is not a direct provider of such services it still regulates them and has an interest in ensuring that policy results "fall within politically acceptable limits" (Baum and Lake 2003, 333-47). When the state does actually provide such services, it typically does so with a comparative advantage over the market (Lake and Baum 2001, 587-621). Second, the federal government repeatedly gives these policies high priority as part of its national development strategies, as I have noted. Third, it is possible to control for the federal government's commitment to education using a variable which captures education as a share of budgetary priorities. This is distinct from variables that express the amount of money states receive from the federal government, or the overall revenue level of the federal government.

Fourth, the Nigerian federal government provides extensive financial assistance to the states for carrying out their responsibilities in education. Subnational governments routinely refuse to implement national policies until they receive money from the federal government, either from grants in aid or through the revenue allocation system. For example in 2000 several states refused to implement a federal minimum wage increase unless the federal government increased revenue allocation set aside for states. The states also complained about an unfunded

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[8] Section 18(3) of the 1999 Federal Constitution pledges the government to provide free compulsory Universal Primary Education, free secondary education, free university education, and free adult literacy programs. See also (Federal Ministry of Education 99; Universal Basic Education Programme 2003).

mandate to implement the president's Universal Basic Education plan (Elaigwu 2002, 73-95). One economist calls such behavior by the states a "complete negation of the very principles of federalism." The states "merely fold their hands and do not lift a finger till they have obtained their chunk of the so-called national cake."[9] This is important for our purposes since it reinforces the view that even where states have jurisdiction over implementation, this autonomy means little when the central government still controls the purse.

SCHOOL CONSTRUCTION SINCE INDEPENDENCE

In this section I depart from common approaches to studies of corruption that focus on perception or case studies and develop a novel time-series measure. I introduce two variables for capturing corruption in education spending. Looking at school construction and classroom size, these variables show when public investment in education yielded more or less than expected, given the amount of money spent by the federal government. Building on recent corruption research, I claim that these residuals capture corruption because they express the difference between predicted and actual output. I also include a proxy for policy priority which captures the federal government's varying commitment to education spending. I conclude by briefly summarizing historical periods with higher or lower levels of corruption.

Capturing Corruption in Education Spending

Enrollment rates and average years of schooling are the most widely used measures of education policy in the developing world (Glewwe and Kremer 2005). The World Bank and other experts on education criticize these metrics because they inadequately capture education's contributions to building human capital. Instead, factors such as class size, measured as student/teacher ratio, better measure education. Not only do they have demonstrable effects on economic growth over the long term, they are also linked to more immediate outcomes associated with better quality education (Barro and Lee 2001, 541-63; Lee and Barro 2001, 465-88). In contrast to early research on classroom size (Coleman and et al. 1966), recent studies find that student/teacher ratios impact student performance in Africa and elsewhere (Case and Deaton 1999, 1047-88; Card and Krueger 1996, 31-50). I therefore interpret smaller classroom size as "better" results.

I take a different approach to performance by exploring when education spending efficiently impacts the number of teachers and the rate of school construction. Similar to recent studies, I compare expected outputs with those predicted by federal spending trends. This allows me to identify the years when education was under-provided or adequately provided, given the model's predictions. The difference between the predicted outputs $\hat{y}_i$, compared to the observed value ($\mu_i + \hat{y}_i$) is captured by the residuals in a linear OLS model. I identify periods of low corruption as years when government inputs were less than or equal to policy outputs. These years can be contrasted with years when inputs exceeded the predicted outputs. According to Chang and Golden, this latter difference implies that "missing funds are siphoned off in fraud, mismanagement, deliberate inefficiency, waste and corruption" (Chang and Golden 2006, 115-37). The differences in performance can be expressed such that:

Equation 1: Low corruption: $\mu_i \geq 0$

Equation 2: High corruption: $\mu_i < 0$

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[9] Cover story, "Through the Eye of a Needle: States' Billion Naira Budgets Based on Expectation from the Federal Government," *The Nigerian Economist*, February 5, 1990, pp. 21-23.

I create a measure of policy efficiency intended to capture this "lost" spending. The predicted number of schools is calculated based on total federal spending on education for a given year. All education spending is expressed in constant 2000 naira.[10] Tests in the appendix show education spending suffers from a unit root, creating a problem of time-series autocorrelation. I therefore de-trend the education spending variable *ed.all* with first difference tests where $\Delta y_t = y_t - y_{t-1}$. De-trending and introducing leads (or lags) are common techniques for reducing the autocorrelation in time series data (Enders 2004).

I also introduce a control, *ed.bdgt*, which measures education spending as a share of the federal budget. This controls for the varying priority the federal government places on education (Ames 1987; Looney and Frederiksen 1987, 34-46). It is based on the amount of federal spending on education after deflation and de-trending. This variable would not serve as a meaningful control if it correlated with overall change in federal revenue; that would imply that available money, rather than policy priorities were driving spending. Pearson correlation coefficients indicate that they are not correlated, with $R=.083$ (the test is insignificant). Thus I can be reasonably confident that *ed.bdgt* does indeed capture policy priorities. Where $\hat{y}$ = the de-trended variable for schools at t+1 after de-trending (Pri.sch, lead +1$_t$ − Pri.sch, lead+1$_{t-1}$):

Equation 3: $\hat{Y} = \beta_0 + \beta 1\,(\Delta ed.all_t) + \beta 2\,(logGDP_t) + \beta 3\,(ed.bdgt_t)$

This model is significant at the .01 level and the R^2 is .269. I express the residuals of this model as the variable *eSchools*. The Durbin-Watson statistic is 1.513. Tests in the appendix show that this new variable is stationary. *Eschools* thus attempts to capture corruption and the "missing money" in primary school construction.

Figure 1 displays the residuals for the predicted number of primary schools as the variable *eschools*. The negative residuals for the early 1960s mean that the number of primary schools was only slightly below the predicted number. The figure improves for the remainder of the decade.[11] 1971-72 show a return to low levels, with the number of schools lower than predicted. From 1973 to 1977 the number is higher than expected, suggesting more efficient spending. The 1980s are full of seemingly stochastic ups and downs, but for the most part, a good deal of spending disappears without producing predicted (expected) levels of output. 1994 to 1998 show notably higher than predicted number of schools but this situation reverses in 1999.

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[10] Most of the spending figures for the 1960's are reported in fiscal years, which I converted to calendar years by multiplying the previous year by 0.25 and the current year by 0.75, since the fiscal year ends on March 31. The spending figures for 1969 are based on an average of 1968 and 1970. All years are then expressed in constant 2000 naira, calculated from the International Monetary Fund's International Financial Indicators Consumer Price Index.

[11] Nearest-year averages are used for missing values in 1967 through 1969 because the Civil War lasted until January 1970. The secessionist eastern states did not report schooling data during these years.

Figure 1: Residuals for Education Spending Predicting Number of Schools, 1962 – 2001
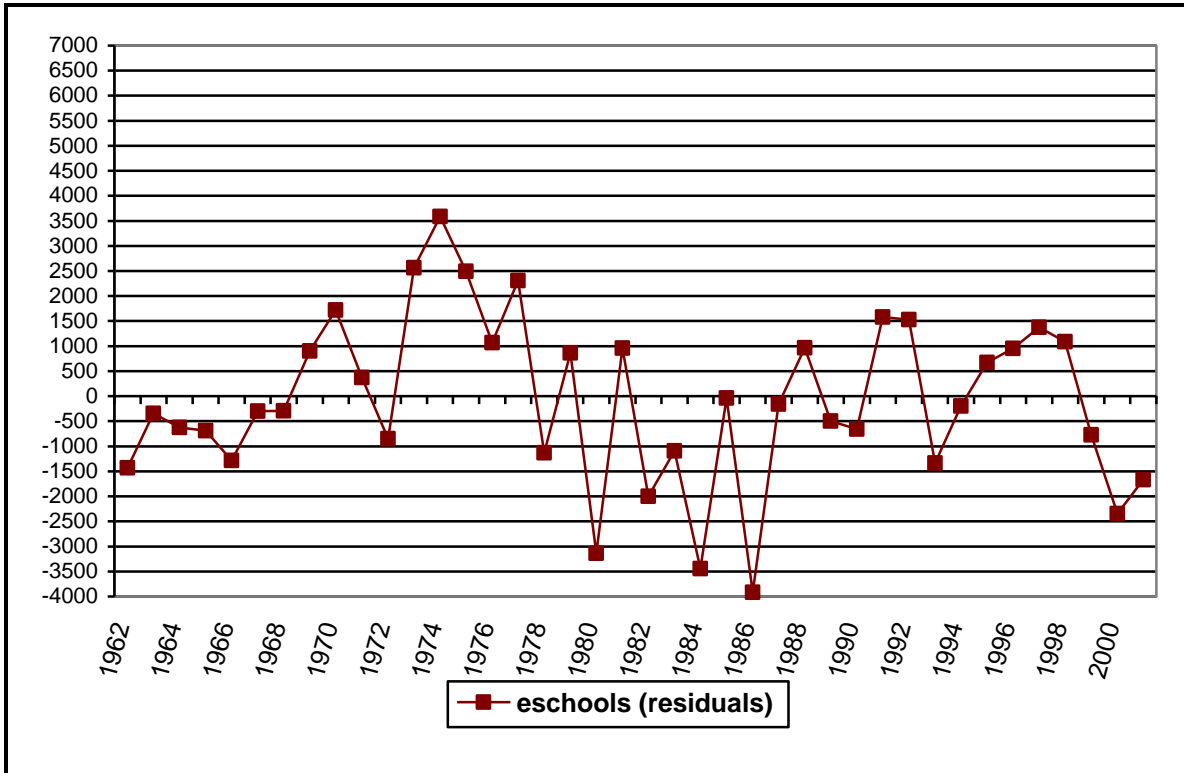
In Equation 4 the dependent variable *Pri.s.t.* measures classroom size, operationalized as student/teacher ratio. Because test results in the appendix show that it is stationary at an acceptable level, I do not de-trend the variable.

Equation 4: $\hat{Y}_t = \beta 0 + \beta 1 \ (\Delta ed.all_t) + \beta 2 \ (logGDP_t) + \beta 3 \ (ed.bdgt_t)$

Figure 2 plots the residuals for the model as the variable *Teachers*. The R^2 is .304 and the model is significant at the .01 level. The Durbin-Watson statistic of 1.118 signals no negative autocorrelation (within .01 significance points). Tests for positive autocorrelation (meaning that the error terms are somewhat close to one another) are inconclusive.[12] These two variables, *teachers* and *eschools* will form my two primary dependent variables.

Unlike the previous variable, a negative value on *teachers* actually indicates more efficient spending because it signals smaller classroom sizes, given spending levels. (Recall that smaller is "better.") In general the results show little corruption in the 1960s, to some extent in the early 1980s, and a brief period in the mid-1990s. The most wasteful spending on occurs in the late 1970s, and late 1980s into the early 1990s. Spending is also wasteful in 1999 and 2000. Before performing statistical tests for the impact of decentralization on my dependent variables, the next sub-section elaborates on school construction and classroom size.

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[12] I hope to obtain more definitive results using recently gathered data that will extend the time series.

Figure 2: Education spending Predicting Primary School Teachers (residuals), 1962 – 2003
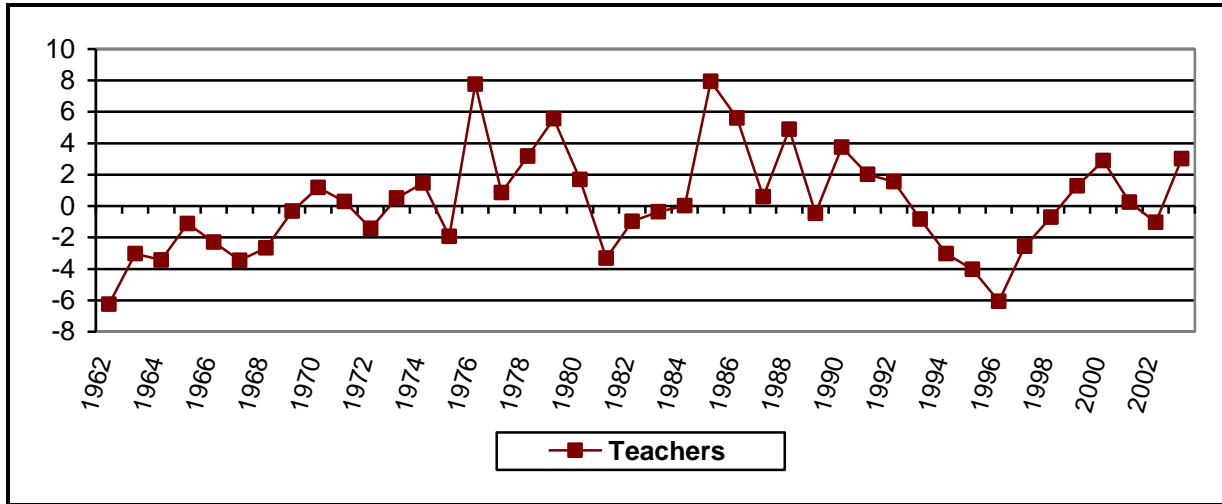
Education Politics and Policy

Four periods are of particular interest, particularly concerning school construction. Starting with the 1960s, classroom sizes were smaller. School construction was inefficient but only slightly so. At this time, Nigeria was struggling to remedy significant regional imbalances in education. In the north, enrollments were low and few schools existed due to the exclusion of missionaries from the region during the colonial era (Coleman 1958). With fewer students, smaller classroom sizes should not be too surprising.

Second, Nigeria's experience with authoritarianism between 1970 and 1975 is frequently praised for its post-civil war policy of "no victors, no vanquished." It is also remembered for its attempts to harness new revenues from oil exports for development. Post-war reconstruction dominated the Second National Development Plan from 1970 to 1974. The federal government committed to training more teachers, increasing primary enrollments, and repairing schools and facilities damaged during the war. Even before General Yakubu Gowon was forced from office in 1975, figures suggest that most of these goals had been met. A steep increase in school construction occurred in the mid-1970s. This period also coincides with the introduction of the federal government's ambitious Universal Basic Education program in 1976. Enrollments surged because education became virtually free. When the Civil War ended in January 1970, primary enrollment stood at about 32 percent of the school age population but by 1978, primary enrollment was at least at 86 percent (Federal Office of Statistics 1979). Even so, it is likely that these are conservative figures. Classroom size suffered, although there is some evidence that the government failed to recruit enough new teachers.

A third period of interest appears with the slump in the late 1980s under the dictator, Ibrahim Babangida. When Babangida took over in 1985, his 1986 budget unveiled huge increases in education spending (as a share of the budget). The Federal Government pointed to this as evidence that it took the guarantee of free primary education seriously. In his budget speech, Babangida declared "education has been so relegated to the background that it is in

danger of imminent collapse."[13] The budget provided relief to cash-strapped states by increasing spending for administration, infrastructure inspection, and school construction.[14] By 1987 primary school construction in absolute numbers had not budged.

Then after 1987 education spending increased slightly but as a share of the budget it amounted to a large cut. Backpedaling on education's privileged position in the 1986 budget Babangida said: "It has become absolutely necessary for the Federal Government to re-adjust its educational priorities." Resources were scarce after the government disbanded the Economic Rehabilitation and Recovery Fund (a temporary fund that levied special fees on corporate and property incomes), not to mention lower than expected oil revenues.[15] Education spending recovered in the 1988 budget but the pace of school construction did not.

It is important to note that with the exception of a four year decline beginning in 1984, primary enrollments increased virtually every year since independence. After 1994 this changed under the dictatorship of Sani Abacha. Actual reported primary enrollments decline from 16.2 million in 1994 to 14.7 million in 1997. This occurs as education supposedly consumes unusually large shares of the total federal budget (as much as 7.7 percent in 1994 and 7.4 percent in 1995). This means that the residuals depicted in Figure 2 during the mid-1990s are less impressive than they appear. By contrast, the enrollment increases in the early 1980s (after a transition to democracy) suggest especially good years of performance.

By 1997, corruption under Abacha was so rampant that 25 billion naira was reported missing from various ministries and parastatals. In response the Finance Minister refused to disburse money for any capital spending.[16] The impact on schools was apparent in the poor condition in which Abacha's government left them. The government sought to ensure quality of education through a federal inspection process (Abolade, J. O. 99). In the end, the results were not flattering. Less than a year after his death, a government survey found that out of 332,408 classrooms in 44,292 primary schools, only 42 percent were in good condition while the remainder required "massive rehabilitation." The survey further noted that 285,290 additional classrooms were required to accommodate enrollments (Tahir 2001, 1-12). The National Primary Education Commission and the World Bank found that it was common for two classes to be housed in one classroom, "rooms which are, generally, in poor states of repair" (National Primary Education Commission). A study covering 1000 schools in 13 states carried out by Nigerian political scientists further documented the poor conditions of schools under Abacha (Gboyega, Ogunsanya and others 1998).

The inefficiency after 1999 in Figure 1 is a fourth notable period because it coincides with the most recent transition to democracy. When President Olusegun Obasanjo was inaugurated in 1999, ushering in a new democratic dispensation, he inherited an authoritarian state of disrepair. But his administration's record on education is mixed during the first few years documented here. Despite rising demands for education and huge capital outlays, school construction slowed during the early years of the Fourth Republic.

The Obasanjo administration's classroom construction plan anticipated spending 21 billion naira on the construction of 3,096 classroom blocks. Only 280 were completed in the first phase of construction and only 18 in the second phase. Almost two thirds of the money had been

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[13] Transcript of Speech, "1986 Budget: the Beginning of a New Path," *The Guardian*, January 6, 1986, p. 33.

[14] Goddy Nnadi, "Education Vote to Aid Implementation of 6-3-3-4 System," *The Guardian*, January 4, 1986.

[15] Transcript of Babangida's Speech, "The 1987 Budget," *The Guardian*, January 6, 1987, p. 11; Goddy, Nnadi, "Education Gets Lowest Budget in Six Years," *The Guardian*, January 3, 1987.

[16] Chris Ogbonna, "One Step Forward, Two Backward," *TELL*, July 14, 1997, pp. 28 – 29.

released by 2001 but the Universal Basic Education Programme reported in 2003 that only half of the classroom blocks had been constructed. 95 projects had been completely abandoned {Universal Basic Education Programme Abuja #13710}(Universal Basic Education Programme 2003). A detailed study of five Local Government Areas in Rivers State uncovered various examples accounting for these kinds of failures, including a local government chair depositing federal revenue disbursements into his personal bank account. The Rivers State government supposedly spent the equivalent of $55,000 USD on building a "football academy," yet nothing had been constructed (Human Rights Watch 2007).

This summary points to some surprising results, particularly in relation to specific regimes. The corruption during the Fourth Republic, and the efficiency during several years of Gowon, is particularly notable in light of research which argues that democracies increase the risks of corrupt behavior (Lake and Baum 2001, 587-621; Alence 2004, 163-87). The differences in classroom size and school construction are also of interest, suggesting that the latter is more susceptible to deadweight loss in spending. The next section explores whether decentralization had any impact on these outcomes through a series of statistical tests.

DOES DECENTRALIZATION REDUCE CORRUPTION?

In this section I explore the comparative basis for decentralization and federalism in Nigeria. I then test for the impact of decentralization on education policy outputs. I adopt a common proxy variable to measure decentralization. I hypothesize that decentralization reduces corruption, which will be visible in positive residuals expressed by *eSchools* and in negative values of *teachers.* I find that decentralization reduces corruption in education spending on classroom size, but it increases the level of corruption in school construction. These results also hold when I limit education spending to capital spending. These findings are similar even after controlling for the impact of oil revenues and the prioritization placed on education spending in the federal budget. The *democracy* variable has a significant impact on the models predicting the rate of school construction, suggesting greater inefficiencies under democracy.

Nigerian Federalism in Comparative Perspective

How federal is Nigeria's government? Although federalism and decentralization are distinct, decentralization does imply that different levels of government can implement policy or exercise some policy control over it. A primary measure of federalism is how powers are allocated among different tiers of government. According to Riker, federalism is "a political organization in which the activities of government are divided between regional governments and a central government in such a way that each kind of government has some activities on which it makes final decisions" (Riker 1975, 101).

In addition to Riker's primary measure, Lijphart points to "secondary characteristics:" including a bicameral legislature with a strong upper chamber, a constitution that is difficult to amend, and a supreme court or some other body with the power of judicial review. In his classic cross-national study, Lijphart uses these and other criteria to create a five point scale for measuring degrees of federalism (Lijphart 1999). He also finds a striking correlation between the presence or absence of his scale and an alternative measure of the degree of federalism: the share of taxes collected by subnational governments in proportion to the national government. This finding is consistent with the World Bank's definition of decentralization cited above, which distinctly links fiscal independence with political authority. Several studies of Africa use the ability of subnational tiers of government to raise revenue as a measure of decentralization as well (Ekpo 1994, 1129-46; Dickovick 2005, 183-210).

Measuring decentralization by capturing the revenue dependence of subnational tiers of government is therefore well established as a proxy. I construct a variable to measure the impact of de/centralization, starting from Ekpo's data which covers the years 1960 to 1990 (Ekpo 1994, 1129-46). This variable, *rev.dpnd* shows the proportion of federal money as a share of states' budget, expressed at aggregate levels. I extend the data through 2003 using my own data collected from the Central Bank of Nigeria and the Federal Office of Statistics. Since my data gathered during field research covers 1970 to 2003, I test to ensure that mine and Ekpo's data are not dissimilar for the 21 years that they overlap. Tests show that they are highly correlated.[17] As a baseline, one should note that in the 1953-65 period states received about 56 percent of their revenue from the federal government. By the 1970s, this figure had risen to approximately 80 percent, roughly where it was for President Obasanjo's first term (1999 – 2003).

Testing for the Impact of Decentralization

I now test the impact of decentralization, starting with the *teachers* variable. Larger values on *Rev.dpnd* indicate greater centralization. I also introduce several control variables: *democracy* controls for regime type, where democracy = 1. The variable *ed.bdgt* measures education spending as a share of the federal budget. This controls for the varying priority the federal government places on education (Ames 1987; Looney and Frederiksen 1987, 34-46). Oil revenue could also impact the results since in Nigeria it dramatically increases the amount of money available for corrupt patronage starting in early 1970s. I control for the impact of oil revenues with the de-trended variable *Δoil*. The (unstandardized) coefficients reported in Table 1 suggest that decentralization improves classroom size, even after introducing controls.

Table 1: Tests for Decentralization on the *Teachers* Residual

	teachers (residual predicting s/t ratio)			
	(1)	(2)	(3)	(4)
Rev.dpnd	13.505**	12.625**	12.541**	11.901**
	(2.477)	(2.322)	(2.274)	(2.118)
Democracy		-1.420	-1.487	-1.411
		(1.340)	(1.346)	(1.263)
Ed.bdgt			.045	.102
			(0.253)	(0.524)
ΔOil Oil rev. share				4.628
				(0.731)
N=41				
R^2	.114**	.132**	.110**	.098**
DW	1.198	1.239	1.252	1.234

Absolute value of *t*-statistic in parentheses
*significant at the .1 level; **significant at the .05 level ***significant at the .01 level

For the tests of decentralization on education policy efficiency, I generate an alternative measure using only capital spending on education. While this does not necessarily allow for a proper robustness check on the independent variable, it does specify the budget line where money disappears. This new residual *esch.cap*, is the unstandardized residual from a model

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[17] Pearson's R = .847, significant at the .01 level.

using capital spending on education to predict the number of schools, with controls education for as a policy priority (*ed.bdgt*) and the log of GDP. The R2 for this model is .183 and it is significant at the .05 level. The Durbin-Watson statistic is 1.497. The basic model for these two sets of tests is expressed as:

Equation 5: $\hat{Y} = \beta_0 + \beta1 \,(Rev.dpnd_t) + \beta2 \,(democracy) + \beta3 \,(ed.bdgt_t) + \beta4 \,(\Delta oil_t)$

The test results in Table 2 show that decentralization, measured as *Rev.dpnd*, predicts the level of corruption in school construction. The R2 increases significantly with controls. But they are all statistically significant whether the dependent variable is generated with all federal education spending or only capital spending. The results are slightly less robust with the *eSchl.cap* variable (on the right side) which includes only capital spending on education. Overall, the models point to less corruption in the process of school construction when there are higher levels of centralization. Most interesting though are the negative coefficients on the *democracy* variable: these results suggest that decentralization is more successful during Nigeria's authoritarian regimes than under democratic ones. This effect drops out in the models with capital spending, but the high t-scores suggest that with additional years, the variable may be significant. Neither oil revenue nor policy priority variables are significant.

Table 2: Tests for Decentralization on *eSchools*

	eSchool				eSchl.cap			
	Residual of all ed. spending predicting schools				Residual of capital ed. spending predicting schools			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Rev.dpnd	7171**	6236**	6361**	6122**	6726***	6272**	6187**	5733**
	(2.619)	(2.427)	(2.484)	(2.339)	(2.832)	(2.648)	(2.599)	(2.394)
Democracy		-1365**	-1255**	-1227**		-662	-737	-684.559
		(2.647)	(2.401)	(2.317)		(1.392)	(1.587)	(1.412)
Ed.bdgt			-96	-74			65.508	105.725
			(1.139)	(0.810)			(0.835)	(1.249)
ΔOil Oil rev. share				1722				3265
				(0.586)				(1.214)
N	40	40	40	40	40	40	40	40
R^2	.131**	.249***	.255***	.241***	.153***	.173**	.166**	.177**
DW	1.920	2.173	2.063	2.076	1.251	1.326	1.296	1.302

Absolute value of *t*-statistic in parentheses
*significant at the .1 level; **significant at the .05 level, ***significant at the .01 level

As a robustness check, I ran the same models on the three measures of my dependent variable without *Rev.dpnd*. The *democracy* variable has a similar impact on *eSchool*, (a -1384 coefficient and a t-statistic of 2.485) in a model statistically significant at the .05 level (Adjusted R2 of .147 and a Durbin Watson statistic of 1.697). This supports my interpretation about the effects of democracy on school construction. Neither of the tests on the other two measures of my dependent variable is significant, underlying the validity of my proxy for decentralization. Finally, although Δoil should capture economic shocks to a large extent, I ran separate tests with a variable expressing the GDP growth rate using World Development Indicators data. In tests

with all three measures of my dependent variable, *Rev.dpnd* is significant at the .05 level with the Adjusted R2 ranging from .135 to 1.47; the variable expressing growth is not significant.

CONCLUSION

In her classic study of corruption, Rose-Ackerman concludes, "the decentralization of government structures can, at best, make a marginal contribution to the control of corruption." She attributes this to the difficulty of distinguishing between constructive competition that enhances accountability (in the spirit of Tiebout) and destructive competition in a political equilibrium that incentivizes corruption (Rose-Ackerman 1999). The qualitative and preliminary statistical analyses on school construction lend some support for those who counsel caution about decentralization as a solution to corruption. A US Agency for International Development white paper recently concluded that we simply know too little about the effects of decentralization on governance quality, especially with regard to education. The findings also lend some empirical support to Mamdani's "decentralized despotism," which allows local centers of control to engage in corrupt activities. Given the results on classroom size though, more qualitative research is necessary to understand why decentralization has precisely the reverse effect.

The fiscal dependence of the states on the center makes the country's entire financial system vulnerable. One risk is that rapid decentralization or devolution of power to the states and LGA could generate macroeconomic instability. The World Bank claims this is a risk because subnational units may be unable to meet their financial obligations (Khemani, Stuti 2003). When revenue shortfalls occur, states and LGAs have only three choices: One option is to borrow money, either from the federal government or from abroad. This is already occurring at alarming rates. In the entire decade of the 1990s, the states borrowed less than 15 billion naira from the federal government. In 2001 states borrowed over 19 billion naira, and in 2002 they borrowed over 32 billion. A second option for the states is to engage in deficit spending, which is unsustainable over time. This is precisely what occurred under Abacha's government, when the federal government drove the states into deficit spending (Lewis 1997, 303-28).

Given the Nigerian central government's control over revenue allocation, increased revenue dependence also means increased discretionary resources – at all levels of government. Future research could examine overall how trends in oil income (rather than as a budget share) affect policy inefficiency and corruption. Tests could also unpack the possibility of an interactive effect between democracy and the dependent variable, given the negative coefficients once *democracy* is introduced.

Finally, while it might be difficult to operationalize the legacy of decentralized despotism at a quantitative level, it would be possible to tract the effects of decentralization on regional inequalities. Nigeria offers a natural experiment for such a research design, given serious disparities between the northern and southern regions. Decentralization in these contexts could *increase* gender inequalities for example, since girls' education receives lower priority in the predominantly conservative Muslim communities. Given the prevalence of the prescription to decentralize, such tests will serve an urgent and practical purpose.

APPENDIX

Augmented Dickey-Fuller (ADF) Unit Root Test, where:

Model 1: $\Delta x_t = \mu + \varphi t + \alpha X_{t-1} + \varepsilon_t$

Model 2: $\Delta x_t = \mu + \alpha X_{t-1} + \varepsilon_t$ (assuming: t = 0)

Model 3: $\Delta x_t = \alpha X_{t-1} + \varepsilon_t$ (assuming: $\mu = 0$, t = 0)

H_0: $\alpha = 1$ and H_1: $\alpha \neq 1$

Reject H_0 if *t*-statistic < critical test values

I = variable integration over time and I(0) = stationarity.

Table 3: Unit Root Test Results

	Level			First Difference			Decision
	(1) Intercept test (trend, const)	(2) Trend & Intercept (const, no trend)	(3) None (no const, no trend)	(1) Intercept test (trend, const)	(2) Trend & Intercept (const, no trend)	(3) None (no const, no trend)	
ESchool (residual)	-5.07***	-4.94***	-5.14***				I(0)
Teachers (residual)	-4.49***	-4.39***	-4.53***				I(0)
Rev.dpnd State rev from fed.	-2.80*	-3.24*	-0.21	-6.84***	-6.79***	-6.92***	I(0)
Pri.s.t. Primary s/t ratio	-3.44**	-4.17**	-0.40				I(0)
ΔPri.schl_1 Schools1, Lead +1	-0.33	-2.54	1.89	-4.59***	-4.46***	-4.28***	I(1)
Capital Capital.ed.spending	-3.20**	-3.17*	-2.39**				I(0)
Ed.bdgt Ed. as % fed. budget	-4.05***	-4.85***	-1.41				I(0)
Oil Oil as % fed. rev.	-1.88	-1.43	0.35	-6.39***	-6.56***	-6.22***	I(1)

Reports ADF test-statistic: *significant at the .1 level; **significant at the .05 level; ***significant at the .01 level

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