Why do Resource Dependent Countries Have Authoritarian Governments?

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Abstract

This paper explores the impact of natural resource dependence on democratic governance. I argue that when the state institutions are weak and budget procedures either lack transparency or are discretionary, resource windfalls tend to generate incumbency advantage authoritarian governments. There is a strong empirical support for my theoretical predictions. Controlling for GDP, human capital and other possible determinants, I nd a robust and statistically significant impact of resource dependence on the probability of authoritarianism . Since Norway is an outlier according to my statistical ndings, I explain why oil discoveries generated incumbency advantage and political instability in Nigeria and not in Norway.

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I. INTRODUCTION

This paper investigates the following surprising and troubling empirical regularity: natural resource dependence and rentier economies tend to undermine democratic governance and generate authoritarian governments. While the correlation between dictatorships and resource dependence has been mentioned in various case studies, there has never been an empirical or a theoretical investigation of such correlation.[1] The goal of this paper is (1) to fill this gap in the literature and, (2) to point to and explain another empirical regularity: resource dependence generates authoritarian tendencies *even* in democratic regimes. There are however a few noticeable exceptions to these perverse effects of resource dependence on democratic governance such as Botswana, Venezuela and Norway. This raises several questions. For instance, why did resource dependence undermine democracy in Nigeria and Indonesia but not in Botswana and Norway? How should the ongoing reform of the Nigerian oil industry be conducted in order to facilitate the emergence of democratic governance? These questions lead to an even broader empirical question: Is economic *structure* a more crucial determinant of political performance than economic characteristics such as the levels of GDP, levels of education or income inequality?

I show that when the state institutions are weak so that budget procedures either lack transparency or are discretionary, resource windfalls tend to generate and consolidate incumbency advantage in democratic elections. Such an advantage could incite the opposition to resort to political violence in competing for political power, thereby generating political instability and authoritarian governments. My empirical results suggest that a crucial determinant of African and Asian political regimes is their level of dependence on natural resources revenues.

A large body of the literature on the rentier states has investigated the political implications of resource dependence (Mahdavy, 1970 and Beblawi and Luciani, 1987). A rentier state is characterized by a high dependence on external rents produced by a few economic actors. Rents are typically generated from the exploitation of natural resources, not from production (labor), investment (interest) or management of risk (profit). The common conclusion is that rentier states tend to be autonomous in the

[1] Some case studies include Madhavi [1970], Karl [1997] and Asher [1999]. As Ross [1999] wrote: unlike economic explanations, political explanations of resource curse are rarely tested, either quantitatively or with well selected qualitative case studies (p. 308) .

sense that natural resource rents allow them to be more detached and less accountable since they do not need to levy taxes. Mahdavy [1970] uses this argument to explain the lack of pressure (from below) for democratic change in the Middle East and resource dependent countries in Africa. In a related book, Ascher (1999) argues that rentier states suffer from poor governance because state officials can more easily use resource rents to meet unpopular or illegal objectives.[2] For Karl [1997] scal reliance on petro-dollars weakens the state and creates political instability. Finally, Lam and Wantchekon [1999] investigate how economic growth, the distribution of income, and the allocation of political power simultaneously evolve when resources are discovered. They nd that resource abundance is likely to increase income inequality and the consolidation of dictatorial regimes.

The rentier state literature has several important limitations: it is based on selected case studies of wealthy petrostates (Venezuela, Algeria, Iran among others) and has never been tested in a cross-section or a panel setting.[3] In addition, the literature explains quite well the consolidation of authoritarian regimes in the Gulf region and elsewhere but does not explain how resource dependence could lead to the breakdown of democracy and the *emergence* of authoritarian governments. The aim of this paper is to ll this gap in the literature by providing an empirical test of the correlation between resource dependence and authoritarianism, and a theory of the effects of resource dependence on democratic governance.

Beside the rentier state literature, there is a large literature on the economic implications of resource dependence (Dutch disease), which shows the adverse effects of resource abundance on growth (Auty [1990], Gelb [1988], and Nankani [1980], Sachs and Warner [1997]). This literature focused on exchange rate appreciation and sectoral shifts in the economy as potential explanation of Dutch disease. In this paper, I provide an alternative explanation for the adverse effects of resource dependence on economic performance by investigating the impact of resource dependence on democratic governance.[4]

My empirical study consists on a test of my theoretical prediction that resource dependence generates authoritarian governments. It also consists on a comparative

[2] See Yates [1996] for a case study on Gabon

[3] See Ross [1999] for a critical review of the literature.

[4] For a detailed theoretical argument on the politics of Dutch desease, see Lam and Wantchekon (1999).

case study between an outlier according to my empirical findings (Norway) and a typical case (Nigeria). Even though I do not test the effect on resource dependence on incumbency advantage in a democratic and fair election, I do test and find a robust and statistically significant correlation between resource dependence measured by the ratio of mineral exports to total exports and authoritarianism.

The game theoretical model builds on Myerson [1993] by assuming that voters only care about redistribution. Indeed, as the rentier state literature suggests, the only meaningful role of the government in a resource dependent country is revenue allocation.[5] As result, an important feature of electoral competition in a rentier economy is that ideological issues are dominated by rent distribution. Ideology matters only when it affects the forms of distributive policies. Consequently, the issue space is unidimensional and voters have identical and linear preferences over the unique issue. I will assume that either the incumbent has better information or some control over the availability of rent.

The premise of the argument is that resource abundance generates through tax revenues and royalties a dependence of government budget on natural resource rents. For instance, Indonesia's profits sharing contracts reserves up to 90% of oil profits for the government, Venezuela's Energy Information Administration takes 85-94% of oil profits and 60% of Mobil's earnings in Nigeria accrue to the Federal government. In addition, in the year 1998, mineral revenues represented 50% government revenues in Venezuela, 64% in Gabon and 72% in Nigeria. (See Table I in appendix, Economist Intelligence Unit Country Reports (1997-98) and Barnes [1995]).[6]

The paper is organized as follows. Section II presents a theoretical argument explaining the correlation between resource dependence, incumbency advantage and authoritarianism. Section III presents two case studies and section IV an empirical test of positive association between resource dependence and authoritarianism. Section V concludes.

II. THE THEORETICAL ARGUMENT

In this section, I provide an informal discussion of the theoretical argument based

[5] Mahdavi [1970].

[6] Jones and Weinthal [2000]suggests that in Kazakhstan, the government chose to privatize the oil industry in order acquire large discretionary funds with which to counter opposition and nationalist forces (p. 23)

on a simple game theoretical model developed in the appendix. I first present the set up, followed by a discussion of the main results.

An incumbent candidate and a challenger compete in an election for votes from a large number of voters. Voters have preferences over ideologies and over (resource) rents. I assume that the level of rents available is very high. If rents were negligible and the policy space is one dimensional, the structure of the game will take the form of a classical Downsian competition. There will be no advantage for either party as each wins with probability one-half[7]. Thus, because of the abundance of rents, I assume that neither voters nor parties care about policy outcomes or ideologies *per se*. Parties only care about winning the election and voters only care about how much of the (natural resources) rents is allocated to them. I therefore focus on the politics of rent distribution by assuming that parties compete à la Myerson [1993]. They make promises to a special group of voters in order to win their votes and the election. As in Myerson [1993], I rule out the scenario under which a candidate could get away by promising everything to every voter by assuming full rational expectation so that candidates are required to make credible promises. However, in contrast to Myerson, the incumbent party may have private information over the level of rents to be distributed or may even control their availability.

The game has five stages. At the first stage, parties make campaign promises. At the second stage there is an election. Then the losing party may choose whether to abide by the outcome. Finally, the winning party implements its distributive policies. In cases where the incumbent has discretionary power over distributive policies, there is an initial stage at which the incumbent can invest in a pre-electoral, revenue-generating project. I will study the case where the rule of law is strong and the discretionary power of the incumbent over revenue allocation is limited, and then move to the case where the rule of law is weak and/or the incumbent has discretionary power.

As in Myerson [1993], I consider the case where offers made by candidates to voters are the realizations of the same random variable with cumulative distribution function. In addition, since the number of voters is infinite, it turns out that the cumulative distribution represents the distribution of offers in the electorate. Finally, each candidate budget constraint is expressed as the average offer that he or she can

[7] Downs [1956], Calvert [1985] and Roemer [1994]

credibly promise to a voter.

In order to endogenize socio-political instability, I assume that the opposition party might not abide by the electoral outcome and could create political unrest with some probability. I assume that when the rule of law is strong, the cost of political unrest on the losing party is very high. When the rule of law is weak, the cost is moderate and private information. Finally, when the incumbent has discretionary power over revenue allocation, I will assume that the incumbent can invest part of the rent in a project whose value is totally realized only after the election.

Finally, I assume that voters utility functions depend on (1) its allocation of the rent, (2) the value of the project initiated by the incumbent, (3) the cost of political unrest and (4) the probability of political unrest. Parties preferences are Downsian in the sense that they only value winning *per se.*

Based on these assumptions, I show that dependence on resource rents may have crucial effects on the outcome of democratic elections and on democratic governance. The logic of the argument is as follows: if the ability of the state to enforce the law (state capacity) is weak, incumbent government will tend to have some discretionary power to generate (natural resource) rents and to distribute these rents to citizens or/and voters. This delegation of power provides an informational advantage to the incumbent over the availability of the rents and allows the incumbent to alter the structure of the budget for electoral gains. Informational advantage and politicization of the budget can prove to be decisive in democratic elections and is likely to generate incumbency advantage. If the opposition is unable to resort to non-constitutional means such as political unrest to compete for political power, incumbency advantage persists over several electoral cycles and leads to one party dominance. This is the case in Bostwana (see details below). However, when the opposition can use political unrest, one party dominance could incite the opposition to use illegal means such as riots or coups to compete for political power. The incumbent, anticipating this reaction of the opposition can choose to ban opposition party or force this party to merge with the ruling party, thereby creating an authoritarian government.[8]

[8] Authoritarianism might be reinforced by a political support of foreign powers to the incumbent. Since 1960, France has intervened in support on the incumbents in several oil rich African countries such as Gabon and Cameroon (see Yates [1996]). In this paper, I focus exclusively on internal mechanisms of authoritarianism.

The key assumption is that the incumbent has discretionary power over the distributive policies. The assumption relies on the following observation made by Rogoff [1990] (among others) in the context of American politics: during election years, governments at all levels often engage in a consumption binge, in which taxes are cut, transfers are raised and government spending is distorted towards projects with high immediate visibility. Ames [1987] also discuses the prevalence of the politicization of public spending in Latin America. He found that Latin American presidents use one or more of the following strategies to win electoral support: (1)increase in the military s share of the expenditures, (2) recruitment of bureaucrats, (3) initiation of infrastructure projects in target towns or cities, (4) transfer to political activists (p. 212). Koehler [1968] nds that central government spending in Mexico rises in the rst two post-election years, falls in the next two years and rises again in the election years.

The observation is equally valid in rentier states. For instance, a study by Odedokun [1990] on budgetary behavior of Nigerian states during the four years of civilian government (1980-83) shows that the pattern of utilization of federal allocations changes during election years in favor of consumption expenditures and against capital expenditures. I show that discretion over when and how to spend government resources allows the incumbent to undermine the credibility of the opposition by making up-front payment to voters. Here is an example: suppose that the incumbent is a left wing party while the opposition is a right wing party. Suppose also both parties make identical offers in the subgame starting from the political campaign stage. It is clear that the incumbent is likely to spend some of the rents on a leftist project (say day care facilities) and credibly claim that those facilities will be well maintained and even upgraded if he or she is elected but that the facilities will be downgraded if the opposition is elected. Given that the day care facilities have already been created, voters (especially Left wing voters) will tend to prefer the incumbent. In other words, the incumbent could use its discretionary power over current government spending to create a lock-in effect in revenue allocation and dominate the opposition in the election.[9]

The argument is based on the implicit assumption that Left wing activists are better at managing Left wing projects and Right wing activists are better at managing Right wing projects. One could argue that the opposition could promise to hire the incumbent s activists to run whatever project the incumbent would initiate. But this promise would not be credible given the ideological differences between the two parties.[10]

The result is a contribution to the literature on budgetary procedures and incumbency advantage. Extensive evidence for incumbency advantage in the context of American politics has been provided by King and Gelman [1991], Alesina and Rosenthal [1995] among others. As in the present analysis, it is assumed that voters mostly care about the share of the resources controlled by the federal government that is allocated to their state, their congressional district and to themselves. Voters are assumed to prefer the incumbent because he or she has informational advantage over the challenger(s) in part through the seniority system in congress (Alesina and Rosenthal [1995]).

The role of transparency and discretion in budget procedures has been investigated in the context of the interaction between voters and politicians by Rogoff [1990], Cuckerman and Metzer and Buchanan [1986] and Wagner [1977]. They show that lack of transparency makes it easier for politicians to engage in pre-electoral scal manipulations and more generally to favor one lobby group over the other. (Alesina and Roubini [1997]; p. 239). Even if the main contention of this paper is similar to Rogoff [1990] and Cuckerman and Metzer [1986], my analysis is exclusively focused on distributive politics and multi-party competition and is set up to derive conditions for incumbency advantage. I argue that such advantage can occur even in a political environment where parties can commit to their campaign promises and do not control already established patronage networks. I also argue that a transparent and rule-oriented process of rent distribution or budget procedures is a crucial determinant of electoral competition and ultimately of the nature of political regimes in rentier

[9] Incumbency advantage could be generated through several alternative mechanisms. For instance, the incumbent could hire a large proportion of bureaucrats from its natural constituency with the understanding that they will be red if he or she were to lose the election. Since the constituency derives bene ts from having well-placed bureaucrats, they have incentive to vote for the incumbent.

[10] After all, a Muslim Party in Nigeria is more likely to hire muslims to run its projects.

economies. When the constitution allows for an open and inclusive revenue-sharing mechanism rule, then the political process is insulated from rent distribution. As result, the electoral process is competitive and democratic governance is preserved. In contrast, when constitutional rule is weak or allows for a closed and discretionary revenue-sharing mechanism, the party in power can undermine the competitiveness of the democratic process by credibly promising more rents to more voters than the opposition. The ensuing asymmetry of political power leads to one party dominance and eventually to authoritarian governments.[11]

Authoritarianism arises because one party dominance combined with weak rule of law incites the opposition to use non-constitutional means such as coup d etats to compete for political power and (2) the incumbent pre-empt such a move by repressing or banning the opposition party.

In summary, the key factors that generate authoritarian governments in rentier economies are the lack of transparency and the absence of rules in the process of rent distribution which could originate from the fact that the internal organization of the government is de jure or de facto highly centralized. When the rule of law is strong and the internal organization of the government is relatively decentralized as was the case in Norway before the oil boom, the process of rent distribution will be more transparent and less discretionary. As a result, incumbency advantage will be mitigated and democratic governance will be unaffected by resource dependence. In contrast, when the rule of law is weak and the government is centralized as was the case in Nigeria after the oil boom, resource abundance will tend to generate one party dominance and the breakdown of democracy.[12]

III. NIGERIA AND NORWAY: A COMPARATIVE ANALYSIS

I next provide a comparative study of two countries whose economies have been profoundly transformed by oil discoveries: Norway and Nigeria.[13] The study will

[11] One party dominance can be easily derived from repeated electoral competition in which the incumbent always has discretion over distributive policies.

[12] Botswana constitutes an intermediate case where resource abundance generated incumbency advantage and one party dominance but not authoritarian government and socio-political instability. Since its independence in 1966, the Botswana s government was controlled by the BDP (Botswana Democratic Party). Currently, it not only controls the executive but also has 33 out of the 40 seats in the National Assembly.

[13] Ideally, one would need to complement the case studies with a time series analysis of the impact

provide some evidence that would clarify the causal effects of resource dependence on political regimes and socio-political stability. I choose to study these two countries because (1) both countries experienced their oil boom in the same decade, (2) they were fairly democratic according to both ACLP and Polity 1998 measures. As gure I and II show, while Nigeria s government has become increasingly authoritarian, Norway remained democratic.

Insert Figure I and II here

The study highlights and illustrates the causes of these divergent political development paths. As the case studies presented below will show, when oil was discovered, Nigeria had a weaker state capacity; as a result, the central government had more discretion over distributive policies. This discretionary power generated a more centralized federal system and incumbency advantage. Excluded or marginalized political groups reverted to non-constitutional means of political competition which lead to political instability and repressive military rule. Meanwhile, Norway had a strong state and a relatively decentralized government structure at the time of the oil boom. There were clear rules regarding revenue allocation between state and central governments and the parliamentary system allowed for a more inclusive and transparent revenue allocation process. This situation is re ected in the times-series of the share of the total central government revenues allocated to the state or local governments.[14]

Insert Figures III, IV here

As Figures III and IV show, share of revenue allocated by the central government to the state or local governments uctuates much more in Nigeria than it does in Norway. This might be due to the fact that (1) Nigeria is more dependent on oil than Norway and (2) the share of oil revenue in the total revenue collected by the central government uctuates more in Nigeria than it does in Norway (See gure V).

of resource windfalls on political regimes in Nigeria, Norway and elsewhere. But there are no reliable resource dependence in the pre-1970 period.

[14] Karl (1997) stressed the importance of stateness in the divergent economic development trajectories of Norway and Nigeria (p. 213). In contrast to Karl s analysis, my analysis focuses not on development policy failures but on electoral competition, democratic governance and socio-political instability. In addition, my analysis does not point to the state in general as the cause of resource curse but to lack of transparency and incumbent discretion in budgetary processes.

However, in my view, stability in revenue share is at the very least a good indication that there are stable rules governing revenue sharing, while uctuation is an indication that the federal or central government has a higher discretionary power.[15] Another indication of the discretionary or the bargaining power of the federal government in the process of revenue allocation is provided by Odedokun (1990) in his study of the determinants of federal revenue allocation. He found that despite being one of the most important criteria for the division of the federal funds across states, population has no impact on federal budgetary items.

A. Nigeria.

The 1959 federal election gave birth to Nigerian parliamentary democracy nearly 2 years after the birth of the oil industry. Nigeria s democracy adopted a federal system with four regions: the North, the West, the East and Lagos territory. The unity of the federation was strained by serious ethnic, religious and political differences. The main political parties were the Northern People Party (NPC), the National Council of Nigeria (NCC) and the Action Group. The original government was controlled by a coalition of Northern People s party Congress (NPC) and the National Council of Nigeria (NCC). The revenue collection and allocation mechanism was a major source of con ict between parties and regions. As Post and Vickers [1973] wrote: since the early 1950s, one of the major grievances of various sections had been their wealth was being used to subsidize poorer ones, and the growing exploitation of oil deposits in the east and Mid-West in the 1960s thus only added to the re which had been lit long before. Conversely, not only the mobilization of material resources but their distribution was an important source of inter-sectional competition and con ict, with constant accusations of unfair treatment (p. 58). The con ict escalated in political violence: there were the armed rebellion by the Tiv ethnic group in 1960 and 1964, the coup attempt by some members of the Action group against the federal government in 1962 and the Yoruba rebellion of 1965.

The growth of the oil industry also coincides with a stronger grip of the NPC on the federal government and an increase in violent political opposition. The NPC won the 1964 election which was marred by fraud, political assassinations and threats of secession (Post and Vickers [1973]). One year after the election, the NPC government

[15] Fluctuation in transfers might be due to measurement errors. I control for such errors by comparating Nigerian Central bank data with IMF data.

was ousted by coup d etat and the prime minister Balewa was assassinated. The persistent tension over the control of the oil resources led to the secession of the Eastern Region of Biafra and to a two-year civil war. (Khan [1994])

While the share of oil revenues in the Nigeria s GDP increased from 1 percent in 1960 and 30 percent in 1964 to more than 90 percent after 1979, its government has become increasingly centralized. This phenomenon was further facilitated by the decree No. 13 of 1970 which reduced mining rents and royalties to oil producing states, and decree no. 9 of 1975, which transferred all mining rents and royalties from the states of origin to the federal government. Later, the 1989 constitution strengthened the discretionary power of the federal government over the process of revenue allocation to the states: It says the federal government may make grants to a state or a local government to supplement the revenue of that state or local government in such a sum and subject to such terms and conditions as may prescribed by the National Assembly (section 162 (1)) (from Yekini [1992], p. 49)

Centralization generated nancially dependent states and the politicization of revenue allocation. The percentage of government revenues allocated to the states that stood at 40.8 percent in 1966 sharply declined over the subsequent years. In the meantime, the share of the federal government increased from 59.2% in 1966 to 73.4% in 1980 (Yekini [1992], p. 47). From 1967-1980, most states were running budget de cits while the federal government had a surplus budget and was therefore in a comfortable position to act like Father Christmas to the states (Yekini [1992], p. 47). This resulted in a regional and ethnic competitions for oil revenues which contributed to the institution of patronage in Nigeria s political system. For instance, Bendel State seemed to have gone out of favor with the federal government and has experienced a sharp decline in federal transfers. As Figure VI suggests, despite being a major oil-producing state, Bendel state received 19.6 of the total transfers to the states in 1966 and only 9.5 % in 1980.

Insert Figure VI here

B. Norway.

When the North Sea oil reserves were discovered in 1962, Norway had not only 150 years of democratic experience but also what Elder et al [1982] called an ideal Weberian state . The public administration was known to be remarkably autonomous, and depoliticized. Strong mechanisms of accountability set up since the 18th century, such as special courts and public access to documents made arbitrary intervention by political leaders in public administration very difficult.(Karl [1997], p. 217). A chancellor of justice or ombudsman rst appointed in 1962 is given the independent authority to monitor and supervise the legality of the state administration. The ombudsman is elected or re-elected by each new parliament but the MPs do not play any role in the ltering and the channeling of the complaints.

Besides its high degree of state transparency, Norwegian democracy is highly participatory and corporatist. The process of public policy making involves continuous bargains and negotiations between the state, interest groups and representative of the civil society such as associations of workers, employers, farmers, shermen. As Elder et al [1982] wrote: the dominant policy making style is extraordinarily deliberative, rationalistic, open (in the sense that all parties are consulted in advance of decision) and consensual (the agreement of all is sought). When the Labor Party in Norway had a clear majority, its enactment commanded a wide measure of cross-party assent (p. 182).

Transparency and inclusiveness play a major role in the management of the government petroleum fund established 1990, which by 1998 contained about 15.2% of the Gross Domestic Product. The income derived from the fund comprised of the net cash ow from petroleum activities as well the return from the funds investment. According to the Ministry of Oil, the main purpose of the funds is to allow greater room for manoeuvering in economic policy should the oil price and economic activities in the mainland economy decline. Inclusiveness and transparency prevented strategic political manipulation of the process of revenue allocation. As Figure IV shows, the revenue share of local governments has been quite stable since 1978. Interestingly, the gap between state and government revenues remained constant between 1978 and 1995. In my view, this indicates that there are stable rules of revenue allocation between the state and central government and that the latter has very little discretionary power.

Finally, in sharp contrast with Nigeria, the political process in Norway became more competitive after the oil boom. From 1935 to 1981, Norway was governed by Labor Party excepted for three periods (1963, 1965-71 and 1972-73). From 1981 to 1997 the government alternated between Labor minority governments and Conservative-led governments.

IV. RESOURCE DEPENDENCE AND AUTHORITARIANISM: A CROSS COUNTRY REGRESSION ANALYSIS

In order to show that Nigeria is the rule and that Norway is the exception , I will conduct a series of empirical tests on the effect of resource dependence on political regimes. I will show that the correlation between resource dependence and authoritarianism holds across countries and over time, i.e. the correlation holds in a cross-section as well as a panel setting.

Dependent Variables

The dependent variables of the empirical analysis are levels of democracy in 1998, 1990 and 1970-1998. Measures of democracy are taken from Polity 98 data sets which provides regime data for 232 countries starting as early as 1800 and ending in 1998. The data measure countries on a democratic scale from 0 to 10 and on an authoritarian scale from 0 to 10. Following the standard procedure in the international relations literature, I generate a unique political regime measure in the year 1998, i.e. Reg98 by adding 10 to the difference between the level of authoritarianism in 1998 from the level of democracy in 1998. In other words, Regime 98 is de ned as level of democracy in 1998 minus the level of authoritarianism in 1998 plus 10. In other words, the regime score ranges from 0 to 20.

For Regime 1990, I use a data set provided by Alvarez, Cheibub, Limongi and Przeworski [1997]. Their data set covers 141 countries from 1950, or the year of independence to 1990. Democracy is coded as a 0 and a dictatorship as a 1. According to ACLP [1997] three conditions must be ful lled for a regime to classi ed as a democracy: the chief executive must be elected, the legislature must be elected, and there must be more than one ruling party. It follows that dictatorship is a political regime under which either the chief executive or the legislature is not elected and there is no more than one party.

Independent Variables.

The key independent variable is resource dependence for which I use the World Bank [1998] data on the sum of oil and mineral exports as a percentage on the total merchandise exports. This measure of resource dependence seems more appropriate than the ratio of primary exports to GDP used in Sachs and Warner [1997] since it excludes agricultural products. In addition, as in all studies of the economic determinants of political regimes (Przeworski et al [1999] and Barro [1999]), I use as control variables the log of GDP per economically active individual to control for wealth (originally taken from Summers and Heston version 5.6), and growth per economically active individual to isolate the effects of economic growth on my dependent variables (taken from Penn World Tables, version 5.6). Economically active individuals are defined as all individuals between the ages of 15 and 64. The inclusion of these standard measures of economic development are particularly important in order to highlight the contribution of my results to the political economy literature on the relationship between development and democracy. Since the literature is ambiguous about the possibility of democracy in poor countries, a negative and significant correlation between resource dependence and democracy would suggest that sectoral characteristics of an economy could be at least as important as the GDP or the growth rate of the GDP as explanatory variables for political regimes.

Additional controls include the level of income inequality and the level of education because they are both considered as possible determinants of democracy. According to Dahl (1971) an allocation of income, wealth and status in a society is also an allocation of political resources which an actor can use to influence the behavior of other actors. As result,

> extreme inequalities in the distribution of such key values as income, *wealth*, status, *knowledge*, and military prowess are equivalent to extreme inequalities in political resources...A country with extreme inequalities stands a very high chance of having extreme inequality in the exercise of power, and hence to a hegemonic regime (p. 82).

Deininger and Squire (1996) provide measures of income inequality for 65 countries from four different sources. My income inequality variable was constructed by taking an average of the Deininger and Squire's measures for a specific country over 10 years. For example, the income inequality measure for Nigeria for 1975-1985 is an average of all surveys on income inequality in Nigeria between 1975 and 1985. As for measures of the level of human capital, I use the average education data from Barro and Lee [1993].

Finally, in order to show that the positive association between resource dependence and authoritarianism is not a purely African and petro-states phenomenon, I include regional as well as petro-states dummies provided by Easterly [1999]. I include these dummies because the empirical regularity discussed in this paper seems particularly valid in Africa. For instance, all African petrostates or resource dependent countries have authoritarian governments or have experienced a very slow process of political reforms. These include Algeria, Nigeria, Libya, Gabon, Cameroon and the former Zaire. On the other hand, besides South Africa, transition to democracy has been successful *only* in resource-poor countries such as Benin, Mali, Senegal, and Madagascar. My goal is to show that Africa is not an exception.

III-A. Cross-Section Results

I now present the cross-section results of my two political regimes variables regressed on resource dependence and various control variables and discuss some robustness or sensitivity checks. Tables II presents the result for the Regime 1998 and Table III the results for Regime 1990.

Insert Tables II and III

The likelihood of Democracy in 1998 (Reg 98) and Democracy in 1990 (Reg 90) are negatively correlated with resource dependence. In the Regime 98 regression the coefficients are signi cant with t-statistics ranging from -4.851 to -2.427, which shows that there is a negative correlation between the ratio natural resource exports to total exports and likelihood of democracy in 1998. My study of the marginal effects suggests that at low level of resource dependence (10%), a one point increase in resource dependence has no effect on democracy in 1998. However at high level of resource dependence (90%), a one percentage point increase in resource dependence leads to 2.15 decrease in democracy in 1998. As for the level of Democracy in 1990 regression, the coefficients have the right sign but are slightly less signi cant (see table II). Interestingly, the coefficient for oil exporter dummy is negative and signi cant, which means that rentier authoritarianism was also a petrostate phenomenon in the 1970s and the 1980s.

In order to have better sense of these results, I present the raw data of change in democracy from 1992 to 1998 (See Table IV in appendix). The reason for focusing on the 1992 to 1998 period is to highlight the validity and the robustness of the results to the current world wide wave of democratization. The table suggests that there are a total of 15 countries where democracy has decreased. Among those 15 countries, 8 are well known to be resource dependent (even though their 1998 natural resource exports gures are missing in Table IV): Azerbaijan, Congo, Columbia, Russia, Columbia, Niger, Kazakhstan and Zambia. Thus, despite the world wide surge of democracy after the end of the cold war, democracy is more likely to deteriorate in resource dependent countries. It is particularly interesting to note that many petro-states or resource abundant countries such as Gabon, Cameroon, Congo have experienced major democratic reforms in the early 90s and were under pressure from European countries, the United States and the World Bank to maintain minimal democratic standards.[16]

That resource dependence is negatively correlated with change in level of democracy corroborate a nding by Bratton [1999] of a decline in the levels of democracy in several African countries in the post third wave period (1995-1997). According to Bratton, from the founding elections that took place in the 1989-1994 period to the second elections that took place in 1995-97, there has been a decline in the rate of leadership alternation (37% to 6.6%), an increase in the rate of opposition boycott (11% to 73%) and an increase in the mean of winner s vote share (61.4% to 69.1% for presidential elections and 62.7 to 72.0% in parliamentary elections). My results suggest that such a decline could be partly attributed to natural resource dependence. For instance, an examination of Bratton s data set reveals that opposition boycott and election riggings took place mostly in petrostates or resource dependent countries such as Gabon, Cameroon, Togo and Zambia. In other resource dependent countries such as Algeria, Congo, the former Zaire and Sierra Leone, democratization simply sank into civil wars.

For check of robustness, I include traditional economic determinants of political regimes such as Log of GDP per capita , GDP growth, Gini coefficient and Education. As expected, level of GDP enters positively, which con rms the standard result that more a- uent countries are more likely to be democratic.[17] Interestingly, GDP growth is a negatively correlated with democracy. This could be attributed to the fact many fast growing economies such as China, Thailand and other Eastern

[16] Another interesting observation is that only 8 of the 31 countries in data with 50% resource dependence or more have a democracy score over 10. Among them, Norway, Venezuela, Ecuador, Chile.

[17] See Barro [1999] and Przeworski et al [1999].

Asian countries are not democratic.[18] Indeed, that the GDP growth coefficients (Column III and IV) become insigni cant when I introduce regional dummies might be used to support this explanation. Finally, neither Education nor Gini coefficient are signi cant. This means that cross country differences in human capital and income inequality do not account for differences in levels of democracy in 1998. This empirical ndings corroborates recent theoretical arguments by Roemer [1999] that democracy is perfectly compatible with persistent inequalities in levels of education and incomes.

III.B Panel Results

I now verify that the correlation between authoritarianism and resource dependence holds in a panel setting, that is within countries or regions and over time. For this purpose, I use pooled time series and cross section data covering the period 1970-1998. The sample is 1468 for yearly observations and 515 for ve-year averages of the data. I show the results of the ordered Probit regression with random effects and region as well as period dummies. Before settling on this methodology, I rst tried ordered Probit with xed effects (country dummies). The results were insigni cant, which could be due to the loss in degree of freedom stemming from using a dummy variable for each of the 109 countries in the data. So I decided to use random effects with period and region dummies (instead of country dummy), which could be seen as quasi- xed effects .

Insert Table V here

The resource dependence estimates are remarkably signi cant in all regressions. The heteroskedasticity corrected t-statistics ranges from -3.012 to -22.000. The marginal effects of resource dependence in panel setting are even stronger than the ones for the cross-section setting. When a country is 10 percent resource dependent, a one percentage point increase in resource dependence leads to only 0.05 percentage point decrease in democracy. However, at 90 percent level of dependence, a one percentage point is associated with more than 7 percentage point decrease in the probability of democracy. In addition, 75 percent dependence corresponds to 3.37 percentage point decrease in level of democracy, a 50 percent dependence corresponds

[18] For example, China s average growth rate from 1965 to 1997 is 8.5% as opposed to 2.5% for the United States.

to only .82 percentage point decrease.

In addition, the coefficients for the log GDP, GDP growth, education are all significant. In particular, as various modernization theories would predict[19], both GDP and education levels are positively correlated with democracy. As in the cross-section regression, GDP growth is negatively correlated with democracy. Also, as one should expect, while the coefficients for the Africa, Middle-East/North Africa dummies are negative and significant, the coefficients for Western Europe and North Africa are positive and significant. Finally, the oil exporter dummy is not significant.

In summary, the negative association between resource dependence and level of democracy is not only valid in cross-section setting, it is also valid in a panel setting as well. Remarkably, the estimates are significant even after when one adds regional as well as petrostates dummies. I consider this result to be the main empirical result of the paper.[20]

V. IMPLICATIONS AND CONCLUDING REMARKS

The empirical findings discussed in this paper have profound implications for the study of the linkages between democracy and development. The results suggest that a crucial determinant of African and Asian political regimes is their level of dependence on natural resources revenues. As the case study on Norway would suggest,

[19] See Pzreworski et al [1998] for a survey of the literature.

[20] Besides the empirical investigation of the effect of resource dependence on democracy, I also regress resource dependence on the rule of law using a set of economic controls as independent variables (results are available upon request). The rule of law data is taken from Sachs and Warner [1997] and Knack and Keefer [1995]. This measure is based on 1982 survey data where countries were ranked from 0 to 6, where lower values are defined as a tradition of depending on physical force or illegal means to settle claims . For the rule of law regression I include Centralization as an independent variable in order to control for the federalist or unitary nature of the government.[21] Measures for the level of centralization are obtained from the Polity III data sets which provides regime data for 232 countries starting as early as 1800 and ending in 1998. The centralization variable is coded as follows: a one represents a unitary state, a two an intermediate state, and a three a federal state. I find that both resource dependence and incumbency advantage have a negative and significant impact on the rule of law with t-statistics ranging from -2.328 to -2.610, which means that natural resource abundance contributes to a rise in the use of violence to settle disputes . I also find robust and significant positive correlation between authoritarianism and rule of law (see columns III and IV). The result confirms conjectures by Karl [1997] that petro-states are more likely to experience socio-political instability.

improving transparency of government revenue allocation should facilitate democratic governance. More broadly, the results also suggest that resource dependence clearly has more political signi cance than GDP. Since most studies on the linkages between democracy and growth are inconclusive, I suggest that primary exports to GDP or other measure of resource dependence replace GDP as the main indicator of development in any empirical analysis of the interaction between democracy and development.[22]

There are several avenues for future research. One is to adopt a more precise measure of political dependence on rents by replacing the ratio of primary exports to GDP by the percentage of government revenues that comes from mineral rents and royalties received by the government. Another way to improve on the empirical analysis would be to adopt an index of budgetary procedures instead of the level of centralization as a measure of the incumbent discretion over distributive policies. At the theoretical level, one could develop a more general dynamic game theoretic model to analyze conditions for political change in rentier economies from competitive democracy to one party dominance and to dictatorships.

Finally, what are the policy implications of the results presented in this paper? How could the oil industry or the oil revenues be managed to promote democratic governance in Nigeria and Indonesia? Following the Norwegian experience, one would suggest that the management of the petroleum funds be monitored by an independent body directly controlled by the judicial branch of government. Alternatively, one could also suggest a decentralized distributive policy like the Great Alaskan Money Give Away Program (Olson and O Brien [1990]). The program was established following an amendment to the state constitution in 1976 which speci ed that: At least twenty ve percent of all mineral lease rentals, royalties, royalty sale proceeds, federal mineral revenue sharing payments and bonuses received by the State shall be placed in a permanent fund, the principal of which shall be used only for those income-producing investments speci cally designed by law as eligible for permanent funds investments [Alaskan Constitution]. Following this amendment, each Alaskan resident received a total of $1000, $386, $331, and $404, for the scal years 1982 to 1985. According to Olson and O Brien [1990] one important motive for the program

[22] See Przeworski et al [1997] for a survey of the literature on the interaction between democracy and development.

was to place a portion of the oil revenue beyond the reach of day to day government spending.

In summary, the theoretical and empirical results in this paper suggest that rentier economies tend to generate incumbency advantage, undermine democratic governance and socio-political stability. My theoretical analysis focuses on the way in which lack of transparency and incumbency discretion in revenue allocation affects electoral outcomes when voters only care about redistribution. I explain how incumbency advantage or one party dominance could induce the opposition to resort to political violence to compete for political power and therefore generate political instability and authoritarian governments. My results imply that democratization efforts in rentier states such as Nigeria, Indonesia or Kazakhstan should include major reforms of the process of revenue allocation.

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APPENDIX

A SIMPLE MODEL OF INCUMBENCY ADVANTAGE IN A RENTIER ECONOMY

An incumbent candidate I and a challenger O compete in an election for votes from a large number of voters. A continuum of voters located in the interval $[0,1]$ participates in the election. Voters have a priori no party preference. De ne by R the level of rents to be distributed. A pure strategy for either party is a function

$$s:[0,1]\rightarrow\Re^{+}$$

such that

$$\int_V s(v)\,dv=R.$$

Voter of type v observes its offers $s_I(v)$ and $s_O(v)$, chooses to vote for candidate $i\in\{I,O\}$ if $s_i(v)>s_{-i}(v)$ and randomizes with equal probability if $s_i(v)=s_{-i}(v)$. As in Myerson [1993], I consider the case where offers made by candidate i to voters are the realizations of the same random variable with cumulative distribution function F_i.[23] In addition, since the number of voters is in nite, it turns out that F_i represents the distribution of offers in the electorate, i.e. $F_i(r)$ is the fraction of voters who receive offers of at most r by candidate i or a mixed strategy of campaign promises

[23] As noted by Lizzeri and Persico (1999), the fact that offers to voters by candidates are realizations of the same random variable does not mean that each voter gets the same offer

by candidate i. Finally, each candidate budget constraint is expressed as the average offer that he or she can credibly promise to a voter. That is, each offer distribution must have a mean of $\frac{R}{2}$. In addition, F_i must satisfy $F_i(r) = 0$ for $r < 0$, $F_i(r) = 1$ for $r > R$ and $\int_0^\infty r dF_i(r) = \frac{R}{2}$ for $0 \leq r \leq R$.

In order to endogenize socio-political instability, I assume that the opposition party might not abide by the electoral outcome and could create political unrest with probability q. When it occurs, political unrest generates a payoff of c_i for party i and c for all voters. When the rule of law is strong, the cost of political unrest on the losing party is very high. When the rule of law is weak, the cost is moderate and private information. Finally, when the incumbent has discretionary power over revenue allocation, I will assume that the incumbent can invest part of the rent, $x \in [0, R]$ in a project whose value is totally realized only after the election. The value of the investment for each voter is $g_i(x, \theta_i)$ where θ_i is a party-speci c human capital.

Payoffs. Voters utility functions depend on (1) its allocation of the rent $s(.)$, (2) the value of the project initiated by the incumbent, $g_i(., \theta_i)$ (3) the cost of political unrest and (4) the probability of political unrest. Thus, voter v s utility if the rule of law is strong and the incumbent has very little discretion over revenue allocation is $s(v)$. When the rule of law is weak and the incumbent has discretionary power over revenue allocation, the payoff of voter v is given by

$$s(v) + g_i(x, \theta_i) - qc$$

Parties preferences are downsian in the sense that they only value winning *per se*. However, like voters, their payoffs depend on the cost or the bene t of political unrest and the probability of political unrest. Thus, the payoff of party i is $-qc_i$ if it loses and

$$G - qc_i$$

if it wins. I rst analyze the case where the availability of the rents is public information and the rule of law is strong. That is, for all i, $c_i > R$ which implies that either party always abide the electoral outcomes.

Proposition 1 *The unique equilibrium offer distribution is such that for each i,*

$$F_i(r) = \begin{cases} 0 & for \quad r < 0 \\ \dfrac{r}{R} & for \quad 0 \leq r \leq R \\ 1 & for \quad r > R. \end{cases}$$

Given these offers, each party wins with probability $\dfrac{1}{2}$.

Proof: Assume the incumbent chooses a uniform offer distribution, that is $F_I = \dfrac{r}{R}$ for $0 \leq r \leq R$, and that the opposition choose an offer distribution F_O such that $\displaystyle\int_0^\infty r dF_O(r) = \frac{R}{2}$. The vote share of the opposition is given by:

$$S(F_I, F_O) = \int_0^\infty F_I dF_O(r) \leq \int_0^\infty \frac{r}{R} dF_O(r) = \frac{1}{2}$$

Thus, when the incumbent is choosing the uniform offer distribution, the opposition s best response is to do the same. A proof of the uniqueness of this equilibrium is contained in Myerson [1993] and Lizzeri [1997].Q.E.D.

I next derive incumbency advantage by assuming either that the level of rents available for distribution is private information (Proposition 2) or that the incumbent has discretionary power over distributive policies (Proposition 3). For the private information case, I will assume for the sake of simplicity that R is a random variable that takes the value R_1 with probability p or R_2 with probability $(1-p)$ where $R_1 > R_2$. As before, parties are required to commit to their platforms, which means that there is an in nite cost of lying for both the incumbent and the opposition. A strategy for the incumbent is $F_I(r_1)$ when the $R = R_1$ and $F_I(r_2)$ when $R = R_2$. A strategy for the opposition is $F_O(r)$.

Proposition 2 *The equilibrium offer distribution is such that type l of the incumbent offers* $F_I(r_l) = \dfrac{r_l}{R_l}$ *for* $R = R_l$ *and* $r_l \in [0, R_l]$ *while the opposition offers* $F_O(r) = \dfrac{r}{R_2}$ *for* $r \in [0, R_2]$. *Given these offers, the incumbent candidate wins the election with probability* $p + \frac{1}{2}(1-p) > \frac{1}{2}$. *Incumbency advantage disappears if the opposition can make a state-contingent offer to the electorate.*

Proof: I rst consider the case where parties are required to make non state contingent offers. Assume there is an equilibrium in which the opposition chooses r such that $\int_0^\infty r dF_I(r) = \dfrac{R_1}{2}$ where F_I is uniformly distributed in the interval $[0, R_1]$. In such an equilibrium the opposition wins with probability $1/2$ and earns a payoff of

$G/2$ if $R = R_1$ and a payoff of $-\infty$ if $R = R_2$. The opposition will deviate and choose r such that $\int_0^\infty r dF_I(r) = \frac{R_2}{2}$. If the opposition plays such a strategy, type $l = 1, 2$ of the incumbent will choose r_l such that $\int_0^\infty r_l dF_I(r_l) = \frac{R_l}{2}$. Finally, if parties can make state contingent offers, it is straightforward that an equilibrium strategy for the opposition consists on offering uniformly to each voter at least r_l if $R = R_l$ such that $\int_0^\infty r_l dF_I(r_l) = \frac{R_l}{2}$ is equilibrium. Q.E.D.

I now drop the private information assumption used in Proposition 2 and assume that R is public knowledge and that there are two types of project, an I-type or an O-type project. For I-type project $g_I(x, \theta_I) > g_I(x, \theta_O)$ and for O-type project $g_O(x, \theta_O) > g_O(x, \theta_I)$. If the incumbent were to invest in the I-type project, he or she would have $g_I(x, \theta_I) + (R - x)$ to offer to the electorate. I assume that parties make promises taking into account future return for the investment (if the investment took place). At the electoral stage, voters choose the party that promises the most.

Proposition 3 *All equilibria are characterized by* $0 < x^e \leq R$ *with the incumbent winning the election with probability 1.*

Proof: In the last subgame with investment, voters prefer the incumbent for all $x > 0$. In the subgame without investment either party wins with probability 1/2. Given this electoral behavior, the incumbent will choose to invest. Thus, there are multiple equilibria, each characterized by $0 < x \leq R$. Q.E.D.

In order to investigate the effects of one party dominance on the incentive of the opposition to abide by electoral outcomes, I assume that the payoff of the opposition party when there is political unrest is private information and takes a positive value $\overline{c}$ with probability α and a negative value $\underline{c}$ with probability $(1 - \alpha)$.[24] If the cost of political unrest to voters is too high, say $c > R$, then voters will vote for the incumbent with the hope that he can concede at least $\overline{c}$ to the opposition in order to secure stability . The incumbent will make such a concession if $G - (1 - \alpha)\overline{c} < 0$. I will focus on the non trivial and realistic case where the incumbent is not very fearful of political unrest and will not make any concession. That is, $G - (1 - \alpha)\overline{c} \geq 0$ or

$$\alpha \leq \frac{\overline{c} - G}{\overline{c}} \qquad (1)$$

[24] For a general model of electoral competition in conditions of political instability, see Ellman and Wantchekon (1999).

De ne by x^* the level of investment that maximizes the value of the project (x^* is such that $g_I'(x^*, \theta_I) = 0$). The following proposition shows that incumbency advantage disappears only if the opposition credibly threatens to create political unrest.

Proposition 4 *Assume A1 holds. Then political unrest occurs with probability* α *and the incumbent wins only if* $g_I(x^*, \theta_I) - \alpha c > 0$.

Proof: Under A1, the opposition never creates political unrest if $c_O = \underline{c}$ and can create political unrest if $c_O = \overline{c}$. Thus political unrest occurs with probability α if the opposition loses and (by assumption) there is no unrest if the incumbent loses. At the election stage, voter v prefers the incumbent if

$$g_I(x, \theta_I) + F_I(r) - \alpha c \geq F_O(r)$$

They vote for the opposition otherwise. The interesting case arises when both parties make the same offer ($F_I(r) = F_O(r)$). In that case, voters prefer the incumbent if $g_I(x, \theta_I) - \alpha c > 0$. They prefer the opposition if $g_I(x, \theta_I) - \alpha c < 0$ and randomize with equal probability if $g_I(x, \theta_I) - \alpha c = 0$. Given that voters are playing such a strategy, the incumbent will choose x^* such that $g_I'(x^*, \theta_I) = 0$. Thus the incumbent wins only if the value of the project is either high or the cost of unrest to voters is low. That is, $g_I(x^*, \theta_I) - \alpha c > 0$.

Table I: Resource Dependence in Selected Petrostates
(Economic Intelligence Unit, 1998)

Country	Oil as % of Gvt Rev.	Oil as % GDP	Oil as % of Exports
Kuwait	87	50	90
Oman	74	40	75
Nigeria	73	30	95
Yemen	70	19	95
UAE	70	33	66
Algeria	65	29	97
Qatar	62	32	80
Gabon	60	50	88
Norway	60	15	60
Libya	59	33	95
Angola	58	49	92
Venezuela	50	36	78
Ecuador	47	14	33
Iran	35	14	33
Mexico	33		
Indonesia	30		

TABLE II. Ordered Probit Polity 98 Regressions

Dependent Variable: Democracy 1998				
Log of GDP per capita	0.695***	1.033***	0.682***	0.466**
	(2.752)	(3.271)	(2.693)	(2.047)
GDP Growth	-0.123***	-0.195***	-0.100**	-0.107
	(-2.830)	(-2.778)	(-1.969)	(-1.538)
Resource Dependence	-2.860***	-2.324***	-3.126***	-2.256***
	(-4.851)	(-3.100)	(-3.009)	(-2.427)
Education	0.010	0.005	0.017	0.015*
	(1.177)	(0.479)	(1.630)	(1.727)
Gini Coefficient		0.003		
		(0.167)		
Sub-Sahara Africa Dummy			0.549	0.719
			(1.134)	(1.217)
Latin America/Caribbean Dummy			0.799**	0.492
			(2.530)	(1.418)
Transition Economy Dummy			-0.046	-0.167
			-0.082)	(-0.348)
Oil Exporter Dummy			0.038	0.095
			(0.044)	(0.140)
Democracy 1992				0.254***
				(3.389)
Number of Observations	74	60	74	72
Wald Chi-sq	70.97	52.44	109.79	70.11
Prob>Chi-sq	0.000	0.000	0.000	0.000
Pseudo R-sq	0.22	0.24	0.24	0.42

TABLE III. Probit Democracy Regression

Dependent Variable Democracy 1990				
Democracy 1970	1.547***	1.746***	1.726***	1.666***
	(3.364)	(4.014)	(3.021)	(2.796)
Log GDP 1970	0.414	1.037***	0.679*	0.542
	(0.945)	(3.271)	(1.914)	(0.869)
Growth 1970-90	0.042	0.077	0.112	0.046
	(0.323)	(0.651)	(0.738)	(0.287)
Resource Dependence	-6.106**	-5.072**	-3.515	-3.392
	(-2.427)	(-2.103)	(-1.254)	(-1.269)
Gini 1970-90	0.023	0.025	0.010	0.004
	(0.803)	(0.897)	(0.258)	(0.094)
Average Education	0.217			0.042
	(1.380)			(0.214)
Oil Dummy		-1.291**		-1.042
		(-2.284)		(-1.342)
Sub-Saharan Africa Dummy			-1.343	-1.364
			(-1.635)	(-1.574)
Middle East/North Africa Dummy			-0.667	-0.267
			(-1.158)	(-0.367)
Latin America/Carib Dummy			0.478	0.403
			(0.596)	(0.516)
Constant	-4.789	-9.382***	-5.946*	-4.546
	(-1.229)	(-2.957)	(-1.760)	(-0.927)
Number of Observations	66	74	74	66
LR Chi-sq	28.87	41.17	65.90	51.65
Prob>Chi-sq	0.000	0.000	0.000	0.00
Pseudo R-sq	0.48	0.53	0.58	0.54

TABLE IV. List of Countries in the Data

Country Name	Resource Dependence	Polity 1992	Polity 1998
Afghanistan			3
Albania		15	16
Algeria	96.90		
Argentina	10.25	18	18
Armenia		17	16
Australia	34.39	20	20
Austria	4.46	20	20
Azerbaijan		11	4
Bahrain	90.05	0	1
Bangladesh	1.28	16	16
Belarus		17	3
Belgium	7.65	20	20
Belize	0.03		
Benin		19	19
Bhutan		2	2
Bolivia	68.65	19	19
Botswana		18	18
Brazil	15.72	18	18
Brunei	99.52		7
Bulgaria		18	18
Burkina Faso		5	10
Cambodia			7
Cameroon	56.74	3	3
Canada	18.61	20	20
Central African Republic		4	16
Chad		4	8
Chile	55.14	18	18
China	10.39	3	3
Columbia	37.06	19	17
Comoros		14	14
Congo–Zaire		2	3
Congo		15	4
Costa Rica	1.93	20	20
Coted Ivoire		3	4
Cuba		3	3
Cyprus	2.61	20	20
Czech Republic		18	20
Denmark	4.53	20	20
Djibouti	0.21	3	4
Dominica	0.07		
Dominican Republic		16	18
Ecuador	52.07	19	19
Egypt	38.30	7	7
El Salvador	4.22		
Equatorial Guinea		3	5
Eritrea		8	8
Estonia		18	18
Ethiopia	6.21		11

TABLE IV (continued)

Country Name	Resource Dependence	Polity 1992	Polity 1998
Fiji	0.20	14	18
Finland	5.05	20	20
France	5.16	18	19
French Guiana	0.32		
Gabon		7	7
Gambia		18	5
Georgia		14	15
Germany	3.85	20	20
Ghana		11	15
Greece	14.08	20	20
Greenland	0.91		
Guatemala	2.49	13	18
Guinea		5	11
Guinea Bissau		4	
Guyana		16	16
Haiti	0.11	3	17
Honduras	5.02	17	17
Hong Kong	1.76		
Hungary	9.03	20	20
Iceland	11.06	20	20
India	8.08	18	18
Indonesia	48.36	3	5
Iran		4	4
Iraq		1	3
Ireland	1.85	20	20
Israel	2.27	19	19
Italy	3.65	20	20
Jamaica	11.25	20	19
Japan	1.41	20	20
Jordan	38.16	7	7
Kazakhstan		12	7
Kenya	16.01	5	11
North Korea		1	1
South Korea	1.85	19	20
Kuwait	92.78	3	3
Kyrgyzstan		16	12
Laos		3	3
Latvia		18	18
Lebanon		7	7
Lesotho		3	
Liberia			11
Libya	94.71	3	3
Lithuania		20	20
Luxemburg		20	20
Macao	0.07		
Madagascar	8.19	19	18
Malawi	0.03	1	18
Malaysia	20.40	15	14

TABLE IV (continued)

Country Name	Resource Dependence	Polity 1992	Polity 1998
Mali	0.05	17	16
Malta	1.51		
Martinique	16.31		
Mauritania		4	4
Mauritius	1.59	20	20
Mexico	43.28		
Micronesia		10	16
Moldova		15	17
Mongolia		12	19
Morocco	18.71	6	7
Mozambique		4	16
Myanmar		1	1
Namibia		18	18
Nepal	0.27	18	18
Netherlands	13.35	20	20
New Zealand	9.61	20	20
Nicaragua	1.05	16	18
Niger		10	4
Nigeria		5	
Norway	57.90	20	20
Oman	92.83	1	1
Pakistan	1.58	18	17
Panama	1.49	18	19
Papua New Guinea	58.33	20	20
Paraguay	0.05	12	17
Peru	57.09	7	12
Philippines	10.41	19	19
Poland	19.97	18	19
Portugal	6.01	20	20
Qatar	84.23	0	0
Romania	21.96	15	18
Russia		16	14
Rwanda			4
Saudi Arabia	92.17	0	0
Senegal	21.65	11	12
Seychelles	0.25		
Sierra Leone		3	14
Singapore	19.43	8	8
South Africa	18.17	15	19
Spain	7.34	20	20
Sri Lanka	2.28	15	15
Sudan		3	3
Suriname	9.74		
Swaziland		0	1
Sweden	6.42	20	20
Switzerland	2.79	20	20
Syria	46.13	1	1
Tajikistan		4	8

TABLE IV (continued)

Country Name	Resource Dependence	Polity 1992	Polity 1998
Tanzania		4	11
Thailand	1.87	19	19
Togo	44.69		
Tonga			8
Trinidad and Tobago	67.61	19	19
Tunisia	18.93	5	7
Turkey	6.62	19	18
Turkmenistan		1	1
Uganda		3	8
Ukraine		16	17
United Arab Emirates	44.45	2	2
United Kingdom	10.75	20	20
United States	6.28	20	20
Uruguay	0.45	20	20
Uzbekistan		1	1
Venezuela	87.28	18	18
Vietnam		3	3
Yemen			10
Yugoslavia	9.4	5	4
Zambia		16	11
Zimbabwe	16.68	4	5

TABLE V. Panel Regressions: Dependent Variable: Democracy					
	1 year	1 year	5 year	5 year	5 year
Log of GDP per capita	0.437***	0.375***	0.483***	0.539***	0.235***
	(12.842)	(7.597)	(6.748)	(6.013)	(2.599)
GDP Growth	-0.059***	-0.019	-0.076**	-0.077***	-0.121***
	(-3.569)	(-1.245)	(-2.297)	(-2.830)	(-3.783)
Resource Dependence	-8.321***	-2.935***	-7.420***	-3.125***	-2.300***
	(-22.000)	(-7.622)	(-10.742)	(-4.490)	(-3.012)
Education	0.129***	0.057***	0.129***	0.064***	0.063***
	(44.540)	(14.534)	(25.607)	(9.131)	(7.327)
East Asia/Paci c		-1.055**		-1.189	-0.751
		(-2.388)		(-1.637)	(-1.121)
E. Europe and Central Asia		-1.072**		-1.403*	-1.775**
		(-2.380)		(-1.924)	(-2.321)
Middle East/North Africa		-9.772***		-9.062***	-8.654***
		(-26.872)		(-15.723)	(-14.575)
South Asia		0.135		0.352	1.071
		(0.239)		0.358)	(1.077)
Western Europe		1.803***		1.700**	2.809***
		(4.686)		(2.549)	(3.872)
North America		1.415***		1.200	3.072***
		(3.172)		(1.468)	(3.396)
Sub Sahara Africa		-7.942***		-5.777***	-5.728***
		(-20.869)		(-8.971)	(-9.407)
Transition Economy Dummy		0.708***		1.062***	1.019***
		(3.564)		(3.109)	(2.656)
Oil Exporter Dummy		-0.446		0.084	-0.075
		(-1.332)		(0.152)	(-0.127)
Constant	-4.022***	3.226***	-4.842***	-1.336	7.232***
	(-4.838)	(2.694)	(-2.990)	(-0.624)	(3.196)
Number of Observations	1468	1468	515	515	515
Number of Countries	109	109	114	114	114
Prob>Chi-sq	0.000	0.000	0.000	0.000	0.000

Figure I
Nigeria: Regimes and Fuel Exports

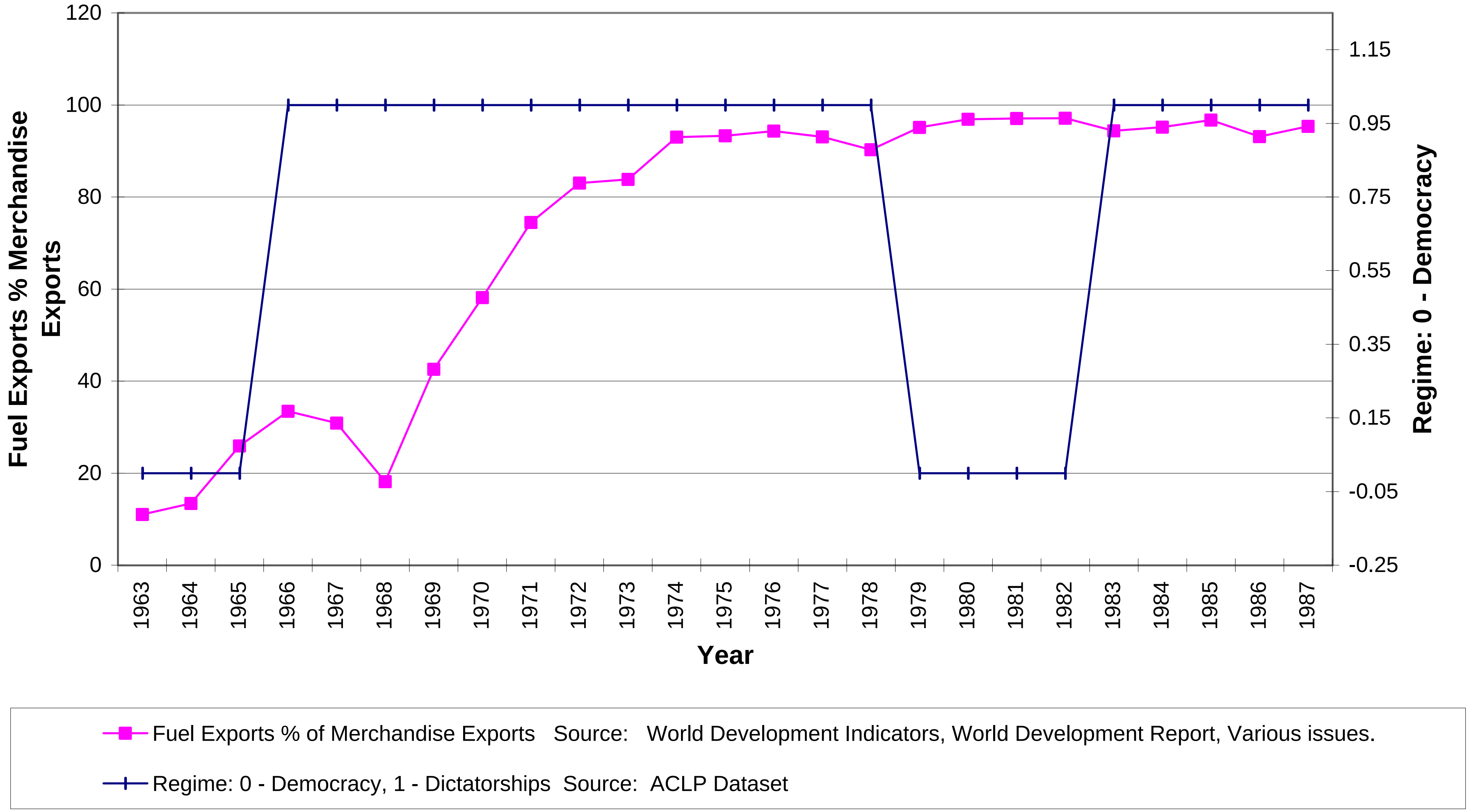


Figure II
Norway: Regimes and Fuel Exports 1963 - 1997

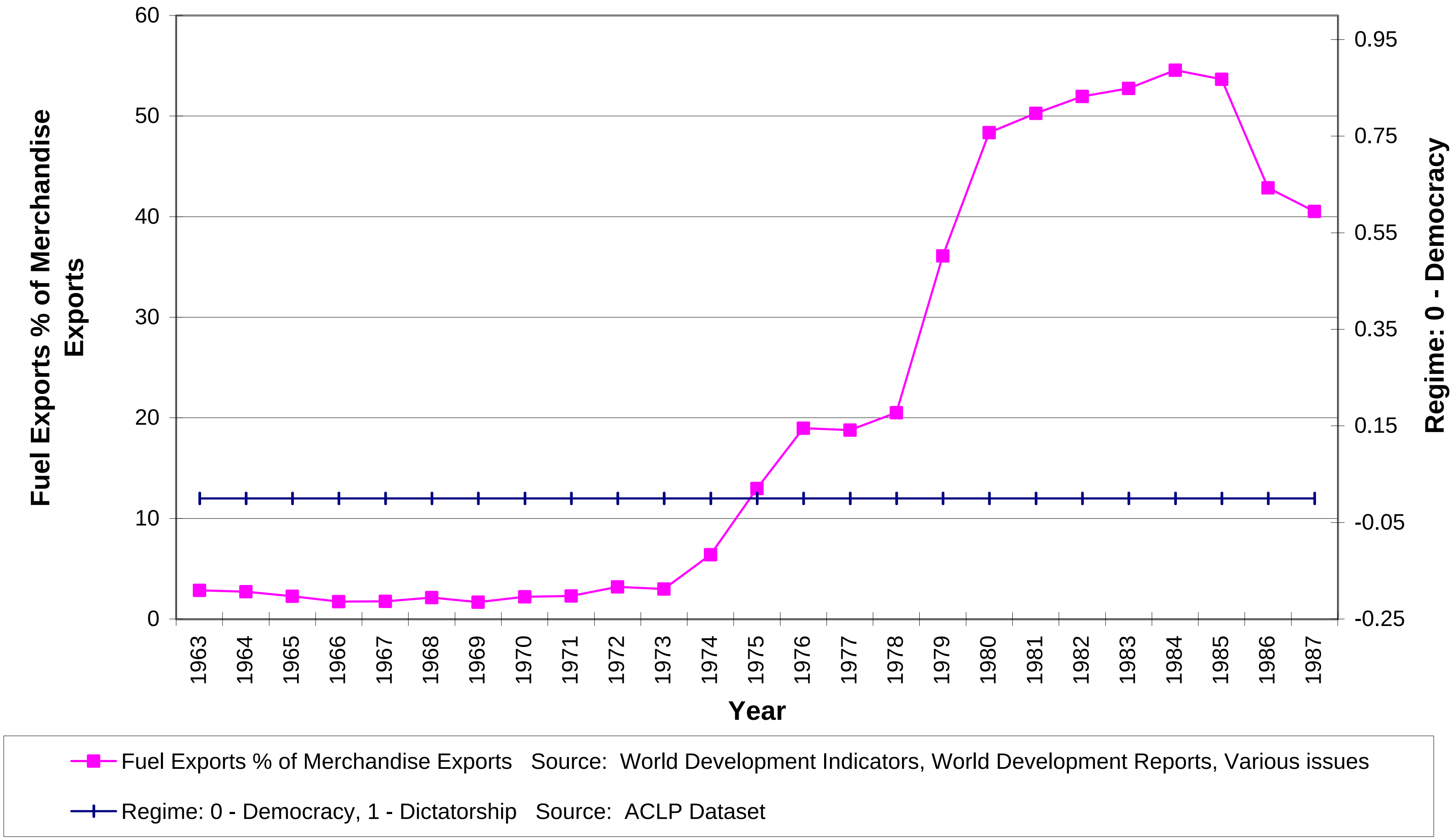
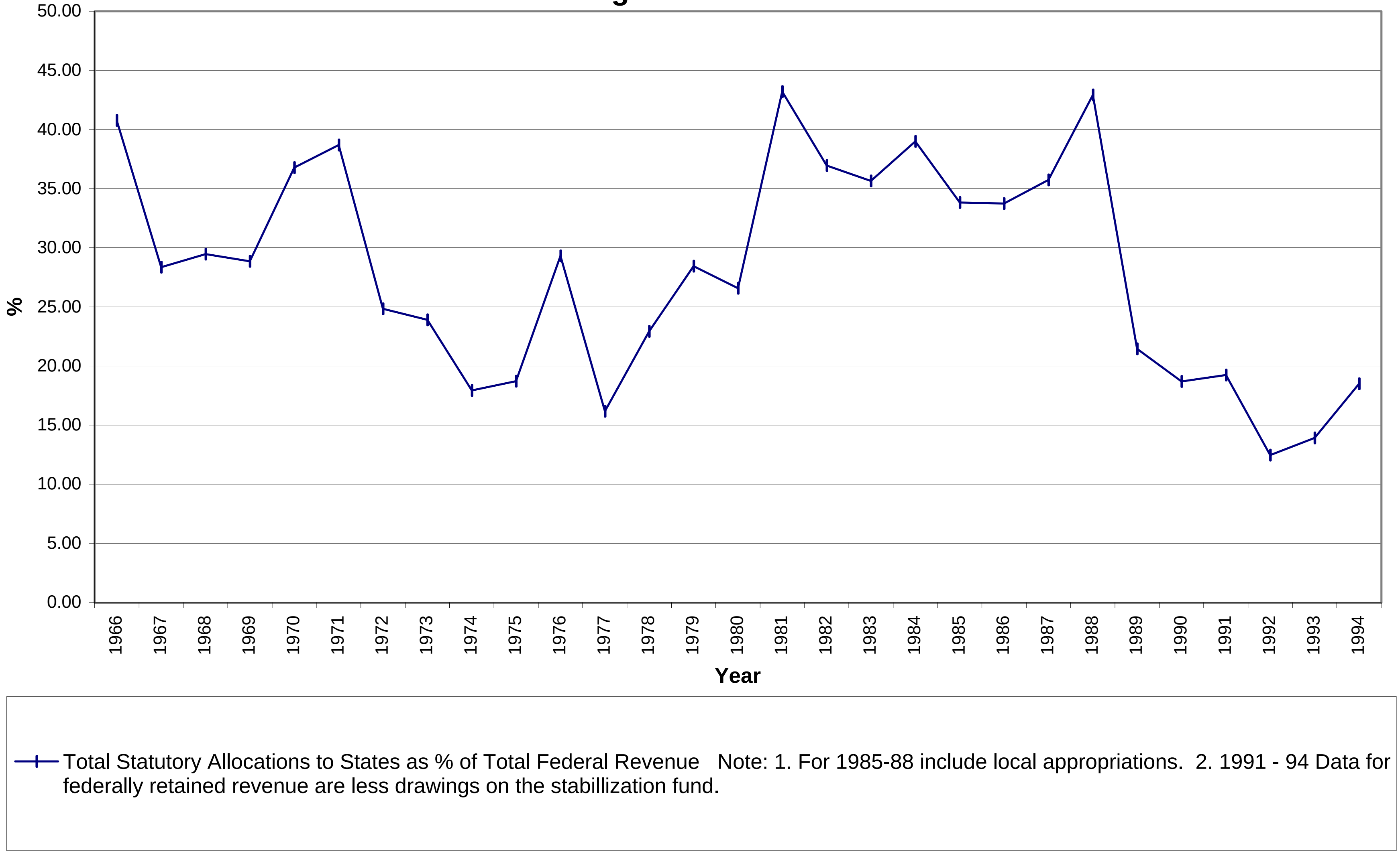


Figure III
Allocation of Revenue to State Governments by the Federal Government: Nigeria 1966 - 1994



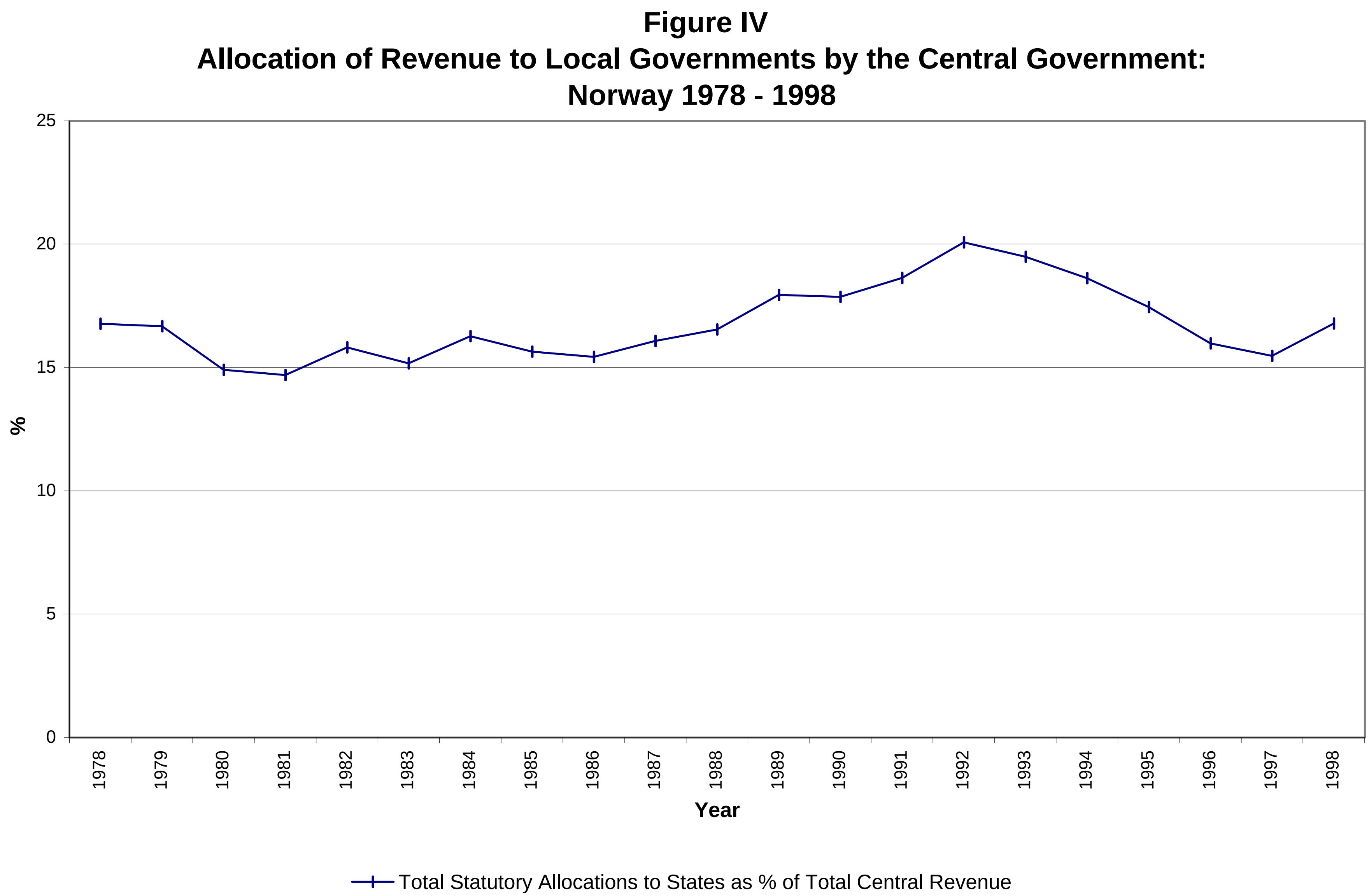


Figure IV
Allocation of Revenue to Local Governments by the Central Government:
Norway 1978 - 1998
25
20
15
10
5
0
%
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
Year
Total Statutory Allocations to States as % of Total Central Revenue

Figure V
Oil Revenue Trends in Nigeria & Norway (1977 - 1996)

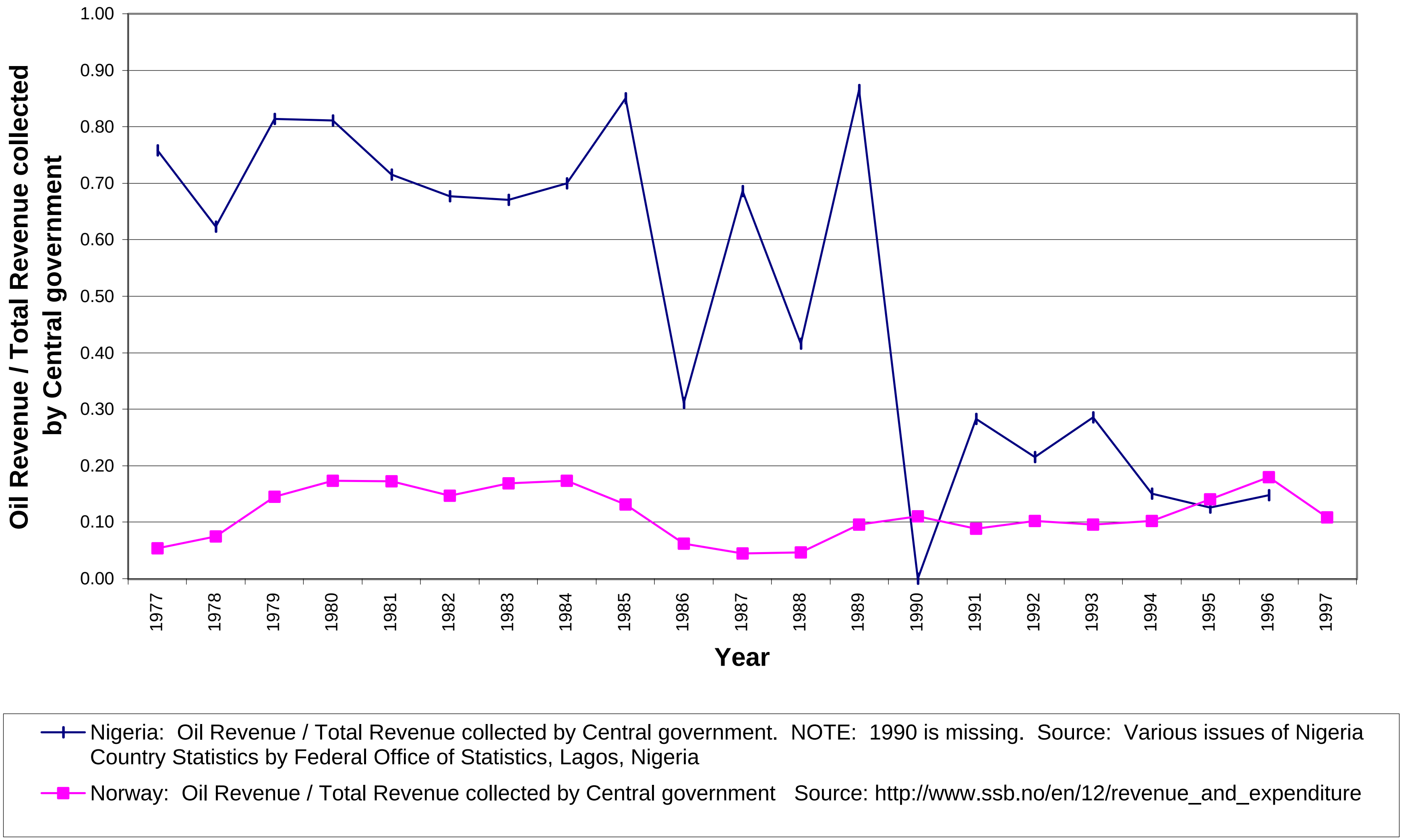


Figure VI
Statutory Allocation To The Then Bendel State 1966 - 1990