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RESOURCE WEALTH AND POLITICAL REGIMES IN AFRICA

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Political economists point to the levels of economic development, poverty, and income inequality as the most important determinants of political regimes. The authors present empirical evidence suggesting a robust and negative correlation between the presence of a sizable natural resource sector and the level of democracy in Africa. They argue that resource abundance not only is an important determinant of democratic transition but also partially determines the success of democratic consolidation in Africa. The results illuminate the fact that post-Cold War democratic reforms have been successful only in resource-poor countries such as Benin, Mali, and Madagascar. The authors argue that resource-rich countries such as Nigeria and Gabon can become democratic only if they introduce strong mechanisms of vertical and horizontal accountability within the state.

Keywords: democratization; democratic consolidation; resource curse; Africa

This study presents empirical evidence suggesting that resource abundance is a crucial determinant of African political regimes. Evidence suggests that the discovery of a natural resource has led to a decrease in the rate of economic growth in African petrostates. Less studied is the phenomenon that most African resource-dependent countries were authoritarian governments and struggled with democratic consolidation after the “third wave” of democratization. These resource-dependent countries include Algeria, Nigeria, Libya, Gabon, Cameroon, and the former Zaire. Besides South Africa, the transition to democracy has been successful only in resource-poor countries such as Benin, Mali, Senegal, and Madagascar. We believe that

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executive discretion over the distribution of resource rents has a significant impact on political regimes. Thus in Africa, discretion in the distribution of oil or mineral revenues causes democratic governments to break down or authoritarian governments to endure.

The literature on rentier states has investigated the political implications of resource abundance (Beblawi & Luciani, 1987; Mahdavy, 1970). 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 the management of risk (profit). Rentier states tend to be autonomous because states with large natural resource endowments are more detached and less accountable; thus 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. In a related work, Yates (1996) argues that rentier states suffer from poor governance because state officials can use resource rents more easily to meet unpopular or illegal objectives. For Karl (1996), fiscal reliance on petrodollars weakens the state and creates political instability. Finally, Wantchekon (1999) investigates how economic growth, the distribution of income, and the allocation of political power simultaneously evolve when resources are discovered. He finds that resource abundance is likely to increase income inequality and the consolidation of dictatorial regimes.¹

As noted by Ross (1999), a key shortcoming of the rentier state literature is that it is based on selected case studies of wealthy petrostates (Venezuela, Algeria, and Iran, among others) and has never been tested in a cross-sectional or panel setting. This gap has been filled by Wantchekon (1999) and Ross (2000). Our analysis provides an important robustness test of these findings in the context of Africa.

More important, in this analysis, we argue that executive discretion over resource rents leads to less political liberalization (transition of democracy) and a greater likelihood of democratic breakdown (consolidation of democracy).² In the empirical analysis, we show that natural resource-dependent economies (a) were more likely to be authoritarian, (b) exhibit higher levels of government spending, (c) are associated with worse governance, and (d) were more likely to lead to breakdown in democracy after the third wave of democratic transitions in the 1990s. We believe that these four findings pro-

1. Political regimes can also have an impact on the levels of foreign direct investment. See Jensen (2003) and Li and Resnick (2003).

2. The literature on the relationship between democracy and development has been recast in reference to authoritarian and democratic breakdowns. See Przeworski, Alvarez, Cheibub, and Limongi (2000).

vide an important contribution to the literature on democratic transition and consolidation in Africa.

Our fourth finding, that resource dependence is negatively correlated with change in the level of democracy, corroborates a finding by Bratton (1998) of a decline in the level of democracy in several African countries in the post-third wave democratization period (1995 to 1997). According to Bratton, from the founding elections that took place in the period from 1989 to 1994 to the second elections that took place in period from 1995 to 1997, there was a decline in the rate of leadership alternation (37% to 6.6%), an increase in the rate of opposition boycotts (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).

We argue that these findings by Bratton (1998) suggest that they could be attributed partly to natural resource dependence. For instance, Bratton's data reveal that opposition boycotts 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.³ We note that from 1965 to 1990, nearly all African low-income countries, including the resource-dependent countries, were authoritarian. However, the correlation between political regimes and resource dependence became more evident after the third wave of democratization. We argue that this result suggests that natural resource abundance, often identified as an impediment to democratic transition, also has a significant impact on democratic consolidation in Africa.⁴ This final finding provides a novel contribution to the broader literature on democratic consolidation.

THE THEORETICAL ARGUMENT

Why do sub-Saharan African countries with an abundance of natural resources tend to have authoritarian governments? An abundance of natural resources increases competition for control of the state, which is linked to high levels of political violence and the use of resource rents by ruling parties to maintain their hold on political power. Resource-poor countries, such as Mali and Benin, have less competition for control of the state, which favors

3. A more detailed analysis of the link between natural resources and civil wars is beyond the scope of this article. See Wantchekon and Jensen (2003).

4. For instance, the authorities of the newest African major oil producer, Equatorial Guinea, recently held a conference to examine why its neighbors had squandered their oil dollars "to evaluate what to do not to have the same thing happen (in their country)" (Onishi, 2000).

elite cooperation and the maintenance of democratic governance. The logic of the argument is as follows.

Consider a political system with incumbents in a one-party or no-party state that faces no opposition or a multiparty state in which incumbents face competition from a number of parties. Voters in both types of systems have preferences based on ideologies and the level of resource rents. In systems that have very high levels of resource rents available, such as Nigeria, politics is dominated by issues concerning the distribution of resource rents, not ideology. Voters select parties on the basis of credible promises to deliver natural resource rents to regions, localities, and groups of individuals; parties attempt to maximize political power. In political systems with opposition parties, incumbents make offers on resource rents in a Downsian fashion, attempting to gain minimum winning coalitions to maintain power. In systems with no credible opposition, such as that of Gabon, incumbents make resource rent offers to a select group of voters to win their political support.⁵

In authoritarian political systems, resource abundance allows incumbent politicians to maintain support and consolidate their hold on political power. That is, higher levels of resource rents translate directly to higher levels of support for incumbent politicians, making democratic transition more difficult. Nowhere is the positive correlation between natural resource windfalls and dictatorship more evident than in Nigeria.⁶ As the share of oil revenues in its gross domestic product (GDP) increased from 1% in 1960 and 30% in 1964 to more than 90% after 1979, its government became increasingly centralized and oppressive (Bienen, 1983). Only 4 of Nigeria's past 35 years of political history have been under civilian rule. Oil revenues have allowed the government to consolidate power on the federal level by creating financially resource-dependent states. More than half (55%) of oil rents accrue directly to the federal government, which is responsible for distributing an additional 35% of these profits to states (Khan Ahmad, 1994). As a result, regional and ethnic competitions for oil revenues have contributed to Nigeria's political system of institutionalized patronage.⁷

5. This core group of supporters has been termed the *selectorate* by Bueno de Mesquita, Morrow, Siverson, and Smith (1999). See Gardinier (2000) for a discussion of recent political developments in Gabon.

6. See Frynas (2000) for an interesting study of oil politics in Nigeria.

7. This feature of Nigerian political economy is shared with other African petrostates. As Howard French (1998) wrote in an investigative report for the *New York Times*,

In addition to their vast oil reserves, all the Gulf of Guinea producers share the traits of authoritarian governments. They also have in common extraordinary brazen forms of official corruption, which have made their elites some of the richest in the world while leaving the bulk of their populations in stuck-in-the mud poverty. (p. A1)

Congo (Brazzaville) also provides an example of the effects of natural resources on political regimes.⁸ The Congo's oil industry gained importance when large production increases coincided with the 1973 oil shock. The oil windfalls from this price shock faded, as did the prospects of the ruler, Marien Ngouabi. Ngouabi undertook a number of economic reforms, such as nationalization and new industry creation, that were financed through oil revenues. After the assassination of Ngouabi on March 17, 1977, Joachim Yhombi-Opango succeeded, and in 1979, Denis Sassou-Nguesso took power. Sassou-Nguesso's rise to power coincided with the second Organization of the Petroleum Exporting Countries oil shock of 1979 and 1980, followed by a massive 5-year plan in 1982 that increased public expenditures to over 40% of the 1981 GDP (Tommasi, 1999). Although this ambitious policy was only partially implemented, the second oil shock of 1979 and 1980 provided Sassou-Nguesso with the resources to consolidate his rule until democratic reforms were undertaken in 1991 (Clark, 1994, p. 45). These reforms led to the election of Patrice Lissouba. However, 2 years later, a civil war broke out, which led to the collapse of Lissouba's regime, and Sassou-Nguesso returned to power.

Although countries such as Congo (Brazzaville) provide extreme cases of the use of oil revenues to consolidate political power, other less direct methods have been used. One example includes massive spending on public service employment. In mineral-rich Guinea, over 50,000 civil servants consumed over half of the budget.⁹ In Botswana, employment in the civil services exploded from 1964 to 1984, fueled by revenues from the sale of diamonds (Niemann, 1993). Bratton (1994) describes a similar pattern in the United National Independence Party of Zambia's use of copper revenues to generate patterns of employment favorable to the regime, which included higher wages to urban workers. In Cameroon, relatively modest oil wealth has been used as an information advantage and resource to buy support. Van de Walle (1994) argues that under President Ahmadu Ahidjo (1960 to 1982), oil revenues were not documented in official revenue totals and were kept in secret bank accounts overseas. These oil revenues were "repatriated to finance state activities when he saw fit" (p. 141). Even when Paul Biya came to power in 1982 and incorporated oil revenues into general government accounts, rumors of a presidential oil account circulated.¹⁰

8. See Clark (1994, 1997, 2002) for a review of politics in the Congo.

9. Ayttey (1998).

10. See Takougang (1995) for a discussion of the relationship between the press and democratization in Cameroon.

Even in democratic systems with legitimate political competition, natural resource dependence translates into authoritarian government by making democratic consolidation difficult. When state capacity is weak and a state cannot enforce the law, incumbent politicians have a large amount of discretion in the allocation of resource rents, which are allocated to voters in return for political support. If the opposition is unable to break this incumbency advantage, resource rents will translate into one-party dominance, such as in Botswana. Opposition parties are often forced to resort to nonconstitutional means to combat the incumbency advantage. Opposition parties might use riots and coups to vie for political power, causing political unrest in resource-dependent countries.¹¹ Incumbent politicians often anticipate the political unrest caused by opposition groups and either ban them or force them to merge with the ruling party, creating an authoritarian government.

The key mechanism linking authoritarian rule and resource dependence, both in democratic transition and in democratic consolidation, is an incumbent's discretion over the distribution of natural resource rents. This mechanism is clear in most sub-Saharan African countries, where weak political institutions allow incumbent politicians to distribute resource rents for political gain. Odedokun (1990) finds that the budgetary procedures of Nigerian states from 1980 to 1983 show a pattern of the use of federal allocation changes during election years in favor of consumption expenditures and against capital expenditures. Picard (1987) directly links the dominance of the Botswana Democratic Party to the presence of resource wealth. Van de Walle (1994) argues that Cameroon's "patrimonial orientation" was due to its political leaders' management of oil wealth and that this wealth, along with foreign aid, allowed the authoritarian regime to endure.

Discretion in the allocation and the informational advantage of the levels of resource rents by incumbents leads to authoritarian rule through a variety of mechanisms. When one-party dominance is combined with a weak rule of law, the opposition will resort to nonconstitutional means such as coups d'état to achieve political power. One possible outcome is that, foreseeing the opposition's need to resort to these nonconstitutional means, the incumbents will preempt such a move by repressing or banning the opposition. Similarly, the incumbents may go beyond banning the opposition party and suspend elections all together. Last, with high levels of natural resource rents and executive discretion in their distribution, the incumbents may simply use the natural resource rents to buy off the opposition, such as in Nigeria and Niger (Ayttey, 1998).

11. See Wantchekon and Jensen (2003) for a more complete treatment of this argument.

In summary, resource abundance leads to authoritarianism for one of the following reasons: (a) It could allow an already dominant or authoritarian party or coalition of parties to extend its level of popular support and consolidate its hold on political power, making both democratic transition and consolidation more difficult¹²; (b) it could generate incumbency advantage and political instability, which could incite the incumbent to adopt repressive policies toward the opposition¹³; and (c) it could generate an open and extra-constitutional conflict (a civil war), which could result in a dictatorship by the opposition party or the incumbent party.¹⁴ In the following sections, we provide a number of empirical tests of the effects of natural resource endowments on democracy. Our focus is on the first of the three points made above. How does natural resource dependence affect democratic transition and consolidation? We leave the relationship between natural resources and civil conflict for future research.

THE DATA

The panel data used in this study come from a series of data sets made available by Robert Bates (1999) through the Africa Research Program at Harvard University. This data set series is composed of six individual data sets, four of which are publicly available online. The four available data sets are composed of political data, economic data, violence data, and a set of controls for 46 sub-Saharan countries from 1960 to 1995. Descriptive statistics for all variables used from these data sets are presented in Appendix A.

The dependent variable for the panel regressions is a measure of political regime type taken from the Polity III data set from Jaggers and Gurr (1998). This data set provides a number of political regime measures for all countries with populations greater than 500,000. Sticking to convention, we have operationalized democracy by the following formula: Polity III democracy score minus Polity III autocracy score, rescaled by adding 10. This variable, democracy, is an ordinal measure of regime type ranging from 0 to 20, from the lowest democracy score to the highest democracy score, spanning the period from 1970 to 1996.

Other control variables were used from Bates's (1999) data set, including the log of GDP per capita, GDP growth, the number of coups, the number of government crises, the number of demonstrations, the number of riots, and

12. This was the case in Algeria, Gabon, Libya, and Iraq, among others.

13. This was the case in Nigeria and Congo (Brazzaville).

14. The former Zaire, Congo (Brazzaville), and Liberia are good illustrations of this case.

the number of strikes. Descriptive statistics for all of these variables are included in Appendix B.

In addition to the data provided in these four data sets, we have constructed a measure of natural resource dependence from the World Bank (1999) *World Development Indicators* CD-ROM. The World Bank provides data on fuel and mineral and metal exports as a percentage of merchandise exports. Unfortunately, although the country coverage of these data is excellent, the time series is plagued by missing values for most African countries. Using these data on fuel and minerals and metals as a percentage of merchandise exports, we constructed a measure of resource dependence that ranges from 1 to 4 (low to high resource dependence) for 46 countries. The objective classification of countries in these four categories followed the rule that countries with less than 25% of merchandise exports from fuel and minerals and metals were coded 1, countries between 25% and 50% were coded 2, countries between 50% and 75% were coded 3, and countries with greater than 75% of merchandise exports from fuel and minerals and metals were coded 4. Given the relative stability of natural resources for most countries in the sample, missing values were filled in by examining the value of the constructed resource dependence score immediately before and after the missing data. Appendix B presents the average constructed natural resource dependence measure for 45 countries from 1970 to 1995.

To test the effects of natural resources on "governance," we have constructed a cross-sectional data set for 40 African countries. We use six measures of governance from the World Bank's Worldwide Governance Research Indicators Dataset (Kaufmann, Kraay, & Zoido-Lobaton, 1999a, 1999b). This data set combines an existing measure of governance from a number of sources into six aggregate measures. This data set is explained in more detail in the empirical section.

The relatively short period since the first waves of African democratization in the 1990s and the most recent data on political regimes (1998) makes panel analysis an inappropriate tool for examining the more recent political changes in Africa. To analyze the effects of natural resource dependence since the first waves of democratization and democratic consolidation, we have constructed a cross-sectional data set for 46 countries. The dependent variable, democracy, is the same ordinal measure of democracy on the same scale of 0 to 20 used in the panel regressions, except that it is the most recent democracy score (1998) from the Polity 98 data set of Jagers and Gurr (1998).

We have included a number of independent variables from Bratton and van de Walle's (1997) *Political Regimes and Regime Transitions in Africa 1910-1994*. These variables include the number of elections, a measure of the

total number of elections since independence; the percentage of seats, a measure of the total number of legislative seats held by the largest party in 1989; protest frequency, a measure of the level of political protest; and military role, an ordinal measure of the role of the military in the political process. These control variables were used by Bratton and van de Walle in their book to model the level of democracy in 1994. A more detailed description of these variables and their original source is located in Appendix C.

To control for natural resource dependence, we have included the variable natural resources, which is the constructed natural resource dependence score for 1990. We have also included gross national product (GNP) per capita, the log of GNP per capital from Bratton and van de Walle's data set. Last, we have included a measure of past GNP growth rates from Bratton and van de Walle's data set.

EMPIRICAL RESULTS

To test the implications of natural resource dependence on political regimes, we have constructed a number of time-series cross-sectional regressions. We have taken into account the numerous critiques of panel regression analysis to make our regressions the theoretically strongest test of the effects of natural resource dependence on political regimes. One set of critiques concerns the use of random-effects versus fixed-effects regressions. A fixed-effects regression has the desirable property of allowing each panel group (African countries in this case) to have an independent intercept, decreasing the probability of omitted variable bias. The practical problem with this technique is that it is costly in terms of losing degrees of freedom. To come to grips with this problem, we use both random effects (generalized least squares [GLS]) and fixed effects (ordinary least squares [OLS]) and perform the Hausman test to examine if there is a statistically significant difference in the coefficients. For all models, the Hausman test failed to reject the null hypothesis that there was no systematic difference between the coefficients of the random- and fixed-effects regressions.¹⁵

A second set of critiques relates to the calculation of the standard errors from OLS panel regressions. Beck and Katz (1995) show that the GLS estimator, when applied to a time-series cross-sectional data set, often leads to "extreme overconfidence" in calculating the standard errors. To address this second issue, we have estimated all models using what Beck and Katz rec-

15. In other words, we find no significant impact of the inclusion of country dummy variables on the coefficients in our model.

Table 1
Dependent Variable: Democracy

Log of GDP per capita	2.847*** (10.956)	1.995*** (6.266)
GDP growth	0.091** (2.305)	0.076** (2.176)
Resource dependence	-0.530*** (-5.945)	-0.364** (-3.779)
Dummy for the 1970s	-0.717 (-1.424)	-0.887** (-2.021)
Dummy for the 1980s	-0.538 (-1.093)	-0.699* (-1.679)
Colony dummy: Belgium		-1.566*** (-2.782)
Colony dummy: France		-1.605*** (-2.638)
Colony dummy: Portugal		-1.825*** (-2.564)
Colony dummy: United Kingdom		2.305*** (2.774)
Constant	-13.661*** (-7.972)	-7.751*** (-4.789)
Number of observations	690	690
Number of countries	39	39
χ^2	202.63	1,246.26
Hauseman test	3.67	1.89

Note: GDP = gross domestic product.

* $p < .10$. ** $p < .05$. *** $p < .01$.

omment: a random-effects OLS regression with panel-corrected standard errors.

The empirical results are presented in Table 1. The first number for each variable is the coefficient, and the number in parentheses is the t statistic. In Model 1, we regress the level of democracy on the log of GDP per capita, GDP growth, resource dependence, and two decade dummies to control for time trends in the data.¹⁶ The analysis clearly reveals the effects of natural resource abundance on political regimes.

High levels of GDP per capita and high levels of economic growth both have a positive effect on democratic institutions across countries. Even more interesting, we find strong evidence for the theory presented in this study: Countries with higher levels of natural resource dependence have lower democracy scores. The predicted effects of natural resource dependence on democracy are presented in Table 2. Highly natural resource-dependent countries, such as Nigeria, Gabon, Zaire, and Angola (resource dependence of 4), are predicted to have democracy scores that are 1.59 lower than the least dependent countries (resource dependence of 1). Although a change of 1.59 units may seem small on the surface, during this time period, the average level of democracy for this set of countries was only 5.63 out of a maximum score of 20. That is, during this time period, practically all African countries were authoritarian regimes (defined as a Polity score of less than 8), although

16. We also tested all models with AR1 corrections. The empirical results remain unchanged.

Table 2
Dependent Variable: Democracy

Log of GDP per capita	2.848*** (5.978)	2.840*** (5.979)	2.820*** (5.896)	2.831*** (5.936)	2.838*** (5.990)	2.843*** (5.971)
GDP growth	0.091** (2.375)	0.093** (2.432)	0.093** (2.420)	0.094** (2.448)	0.093** (2.445)	0.093** (2.427)
Resource dependence	-0.530*** (-2.839)	-0.529*** (-2.827)	-0.525*** (-2.797)	-0.535*** (-2.851)	-0.522*** (-2.786)	-0.519*** (-2.763)
Dummy for the 1970s	-0.718 (-0.743)	-0.655 (-0.603)	-0.587 (-0.602)	-0.565 (-0.584)	0.668 (-0.691)	-0.632 (-0.652)
Dummy for the 1980s	-0.540 (-0.563)	-0.498 (-0.500)	-0.430 (-0.447)	-0.419 (-0.438)	-0.500 (-0.522)	-0.431 (-0.447)
Coups	0.058 (0.078)					
Crises		1.153** (2.288)				
Demonstrations			0.427 (1.184)			
Riots				0.470 (1.555)		
Strikes					2.451** (1.989)	
Assassinations						1.57* (1.859)
Constant						
Number of observations	690	688	688	688	688	688
Number of countries	39	39	39	39	39	39
χ^2	51.29	57.01	54.28	55.92	54.93	56.16
Hausman test	3.59	3.59	3.51	3.28	4.06	3.52

Note: GDP = gross domestic product.
* $p < .10$. ** $p < .05$. *** $p < .01$.

there is a statistically significant difference in the level of authoritarianism between resource-dependent and non-resource-dependent African countries.

Model 2 adds former colony dummy variables for the former Belgian, French, Portuguese, and British colonies. Although these variables had little effect on our dependence on political regimes, these results deserve some attention. Colonial heritage seems to have a large effect on a country's political regime; former British colonies were predicted to have the highest democracy scores and former Portuguese colonies the lowest. Two potential explanations are possible. One is that a number of political institutions inherited by the former colonies have a large impact on current political regimes. Widner (1994) forwards a concise set of arguments on the differences between countries with Anglophone and Francophone heritages and how this has an impact on political reform. A second explanation is that a former colony dummy variable does not necessarily capture the "path dependence" of colonial institutions but rather stresses the importance of ties with the former colonizers. Cold War politics undoubtedly had a large effect on African political regimes in nations where ties with former colonizers had an impact on domestic politics.¹⁷

A number of scholars have linked the emergence of democratic political regimes and the persistence of authoritarian regimes to political protest and political violence. To control for these different possible explanations, we have included a number of empirical tests using different variables on protest and violence in Table 2, such as the numbers of coups, government crises, demonstrations, riots, and strikes. Even when these political violence controls are added, the effect of natural resource dependence on political regimes is unchanged. We believe that this is an important test of the robustness of the empirical results.

These empirical tests show a negative correlation between the existence of natural resources and the level of democracy in Africa. We argue that these results are consistent with the theory that natural resources make political liberalization less likely in Africa.

Although the mechanisms by which natural resource dependence affects political regimes are complex, one potential test is the relationship between natural resources and the levels of government consumption. We predict that countries with large natural resource endowments will use a larger percentage of resource rents to maintain political power. Countries with high natural resource endowments should be associated with higher levels of government

17. For an interesting discussion of the literature on international factors and African democratization, see Bratton and van de Walle (1997).

Table 3
Dependent Variable: Government Consumption

Log of GDP per capita	0.943*** (2.822)	0.251 (0.697)
GDP growth	-0.098*** (-2.754)	-0.078** (-2.286)
Resource dependence		1.083*** (5.763)
Dummy for the 1970s	1.500*** (2.865)	1.473** (2.965)
Dummy for the 1980s	3.233*** (6.255)	2.773*** (5.598)
Constant	14.933*** (6.328)	18.246*** (7.517)
Number of observations	842	818
Number of countries	42	41
χ^2	56.04	100.04

Note: GDP = gross domestic product.

** $p < .05$. *** $p < .01$.

consumption. Table 3 presents a time-series cross-sectional regression, with government consumption as a percentage of GDP as the dependent variable. This variable includes government consumption statistics for 42 countries from Bates's (1999) data set. The effects of natural resource dependence on government consumption are obvious. Countries with large natural resource endowments have higher levels of government consumption than resource-poor countries. The difference between a resource-rich (4) and a resource-poor (1) country amounts to over 3% of the GDP. This illustrates one of the mechanisms by which democratic regimes break down or authoritarian regimes persist in resource-rich countries.

More generally, natural resource dependence has serious effects on governance, which in turn affects political regimes. An alternative test of the causal mechanism linking natural resources to authoritarianism is to examine the effects of large endowments of natural resources on governance. That is, even after controlling for political regimes, are natural resource rents associated with worse governance? In our dynamic story, even in a democratic regime, natural resources rents will be used to bolster political support, making democratic consolidation less likely. We argue that this will have a long-term impact on political regimes, leading to a breakdown of democracy. We would also expect that natural resources would have an immediate impact on governance in any regime type.

To test this, we use data from the World Bank on measures of governance for 1997 and 1998, including variables on (a) voice and accountability, (b) political stability and lack of violence, (c) governance effectiveness, (d) regulatory framework, (e) the rule of law, and (f) control of corruption. These variables are aggregate measures of governance constructed from the following sources: Business and Environmental Risk Intelligence, the *Wall Street*

Journal and the *Central European Economic Review*, Standard and Poor's DRI, the European Bank for Reconstruction and Development, the Economist Intelligence Unit, Freedom House, Gallup International, the World Economic Forum's Global Competitiveness Survey and Global Competitiveness Survey Africa, the Economic Freedom Index, Political & Economic Risk Consultancy's *Asian Intelligence Reports*, Political Risk Services' *International Country Risk Guide*, the *World Competitiveness Yearbook*, and the World Bank's *World Development Report*. Further documentation can be found in Kaufmann et al. (1999a, 1999b). Descriptive statistics for these six aggregate measures are found in Appendix B.

In Tables 4, 5, and 6, we present six sets of cross-sectional regressions using these measures of governance as the dependent variable while controlling for political regime. A word of caution is merited in the interpretation of these results. Although these aggregated measures are a vast improvement from the raw data on governance, these measures are still far from perfect. Our purpose is not to provide point estimates on how natural resources affect governance but rather to explore the direction of the impact. To most accurately test our theory, we used both the standard OLS estimates and the weighted least squares (WLS) estimates for all models.¹⁸ Given the large standard errors of many of the constructed measures of governance, we believe that the WLS estimates, which weigh the observations with large standard errors less, are the appropriate technique.

Does natural resource dependence, even when controlling for political regimes, lead to worse government performance? Our empirical results find a robust negative relationship between the measures of voice and accountability, the rule of law, and control of corruption. We find mixed results on government effectiveness, for which natural resources have a negative impact on all models, but the estimates are only weakly significant. For the level of political stability and the regulatory framework, we find that natural resources have a negative coefficient, as predicted, but these estimates are not statistically significant in any of the models. These results are relatively unchanged when we control for the colonial legacy.¹⁹ Countries with large endowments of natural resources are associated with worse government performance.

These empirical results show that natural resource dependence had a negative effect on government performance. Our argument is that the long-term effects of natural resources are either a collapse of democratic rule or a con-

18. We use the standard deviations of the survey responses as the weights.

19. The estimates for the colony dummy variables are not reported. In most models, all colonial dummy variables were associated with lower levels of governance. These results were especially strong in the regressions on voice and accountability and political stability.

Table 4
Natural Resources and Governance: Voice and Stability

Variable	Voice			Stability		
	OLS	OLS	WLS	OLS	OLS	WLS
Log of GDP per capita	0.365*** (5.484)	0.359*** (4.757)	0.334*** (5.711)	0.132 (0.811)	0.056 (0.309)	0.057 (0.822)
Resource dependence	-0.116** (-2.484)	-0.132** (-2.266)	-0.096** (-2.532)	-0.110 (-0.0974)	-0.041 (-0.382)	-0.073 (-1.584)
Democracy	0.089*** (8.577)	0.083*** (8.072)	0.090*** (11.045)	0.073*** (2.982)	0.067** (2.693)	0.076*** (7.068)
Colonial dummies	No	Yes	No	No	Yes	No
<i>n</i>	40	40	40	32	32	32
<i>R</i> ²	.74	.79	—	.33	.686	—

Note: OLS = ordinary least squares; WLS = weighted least squares; GDP = gross domestic product.
 p* < .05. *p* < .01.

Table 5
Natural Resources and Governance: Effectiveness and Regulation

Variable	Government Effectiveness			Regulatory Framework		
	OLS	OLS	WLS	OLS	OLS	WLS
Log of GDP per capita	0.089 (1.178)	0.023 (0.272)	0.107* (1.784)	0.204 (1.641)	0.126 (1.070)	0.126* (1.828)
Resource dependence	-0.102 (-1.456)	-0.053 (-0.833)	-0.092*** (-2.235)	-0.057 (-0.595)	-0.049 (-0.648)	-0.062 (-1.289)
Democracy	0.052*** (3.898)	0.051*** (3.440)	0.052*** (5.561)	0.048*** (3.088)	0.036*** (2.467)	0.040*** (3.752)
Colonial dummies	No	Yes	No	No	Yes	No
<i>n</i>	33	33	33	38	38	38
<i>R</i> ²	.44	.55	—	.28	.51	—

Note: OLS = ordinary least squares; WLS = weighted least squares; GDP = gross domestic product.
 p* < .10. *p* < .05. ****p* < .01.

Table 6
Natural Resources and Governance: Rule of Law and Corruption

Variable	Rule of Law			Control of Corruption		
	OLS	WLS	WLS	OLS	WLS	WLS
Log of GDP per capita	0.326** (2.333)	0.304** (2.272)	0.200*** (3.099)	0.177*** (2.662)	0.262*** (3.382)	0.268*** (4.819)
Resource dependence	-0.167** (-2.266)	-0.181*** (-2.911)	-0.113*** (-2.629)	-0.101** (-2.245)	-0.136** (-2.618)	-0.090** (-2.362)
Democracy	0.049*** (2.948)	0.038** (2.126)	0.049*** (4.991)	0.037*** (3.543)	0.032** (2.372)	0.039*** (4.387)
Colonial dummies	No 38	Yes 38	No 38	Yes 38	No 32	Yes 32
<i>n</i>						
<i>R</i> ²	.40			.59		

Note: OLS = ordinary least squares; WLS = weighted least squares; GDP = gross domestic product.
 p* < .05. *p* < .01.

tinuation of authoritarian regimes. During most of the time period under consideration, few African countries would have been considered democratic. As Yates (1996) states,

The idea is not to blame the lack of democracy and the presence of authoritarianism in Africa on the mere existence of oil—for after all what states in Africa have truly democratic regimes?—but rather is to show that these states conform to the general pattern of the rentier state. (p. 229)

Although the Cold War period was characterized by relatively low levels of democracy in sub-Saharan Africa, in the early 1990s, a number of African countries made the transition toward democratic governance. Unfortunately, this early period of democratization was marked by a backslide toward authoritarianism in a number of countries (Bratton, 1998). In many of these countries, the presence of large natural resource endowments has facilitated this backslide. A third set of empirical tests directly examines how natural resource dependence has a negative impact on democratic consolidation.

Thus far we have established that natural resources are (a) associated with lower levels of democracy, (b) more likely to have high levels of government consumption, and (c) generally associated with worse governance. The first two results are consistent with the theory that resource-dependent countries (almost all African regimes prior to 1990) were more likely to remain authoritarian. The third set of tests highlights how resource dependence leads to worse governance. In the final empirical test, we examine the role of natural resource dependence on the breakdown of democracy in the 1990s.

We believe that the post-third wave democratizations in Africa provide an important test of the causal mechanism linking natural resource rents and democratic breakdown. Thus if we think of the first wave of democratizations in Africa in the 1990s as an exogenous shock, that is, outside influences (such as the end of the Cold War) that helped pave the way for the first wave of democratizations, Africa in the 1990s provides us with a natural experiment to test our theory on the impact of natural resources on democratic consolidation. We predict that even in natural resource-dependent countries that had successful first democratic elections, transitions from authoritarian rule are more likely to collapse back into authoritarianism.

The relatively short time period from the first wave of African democratization to the most recent data on political regimes (1998) makes panel analysis an inappropriate tool for examining these recent regime changes. To examine the role of natural resources in the failure of democratic consolidation in a number of countries in Africa, we have used both cross-sectional OLS and an ordered probit analysis on the changes in democracy between 1994 and 1998.

The empirical results for the ordered probit regression are presented in Table 7.²⁰ The regressions in the first column mirror the work done by Bratton and van de Walle for 1994. That is, we use the existing work on the determinants of democratization, control for these factors that lead a country to democratize, and examine the impact of natural resources on political regimes after this first wave.

The interpretation of this result is that although the number of elections, the percentage of seats, the number of protests, and the military role in politics all had significant effects on the level of democracy in 1994, the subsequent changes between 1994 and 1998 are not captured by these variables. In columns 2 to 4, we have included our constructed natural resource dependence score for 1994. In all three of these regressions, natural resources contributed to a decline in the level of democracy after 1994.

These results are not necessarily at odds with the work done by Bratton and van de Walle (1997). They showed empirically that the effects of political variables, such as protests and electoral history, contributed to the emergence of democracy in sub-Saharan Africa. As they state,

The weight of our account of democratization rests on domestic political factors. Indeed, an adequate explanatory model could be constructed with reference to military intervention, political protest, and opposition cohesion alone, that is, entirely without reference to international or economic factors. (p. 223)

Our results show that although these domestic political variables may have been instrumental to the initial wave of democratization, helping explain political liberalization, dependence on natural resources has a dramatic effect on the likelihood of democracy enduring in these countries.²¹ In many sub-Saharan countries, natural resources dependence and how these rents are distributed are not simply central to the functioning of the economy; they are also a central element of domestic politics.

CONCLUDING REMARKS

In this study, we present evidence suggesting that African rentier economies tend to generate authoritarian governments or undermine democratic governance. The theoretical argument focuses on the way in which the lack of transparency and executive discretion in revenue allocation affects electoral outcomes when voters care only about redistribution. Thus, natural

20. OLS estimates produce similar results.

21. This argument is consistent with the finding of Przeworski et al. (2000) on the link between economic development and democratic breakdown.

Table 7
 Dependent Variable: Democracy 1998

Variable	I	II	III	IV
Democracy 1994	0.193*** (3.172)	0.278*** (4.672)	0.289*** (4.633)	0.286*** (4.626)
Number of elections	0.006 (0.076)	0.115 (1.293)	0.124 (1.339)	0.121 (1.321)
Percentage of seats	0.001 (0.134)	-0.003 (-0.524)	-0.003 (-0.656)	-0.003 (-0.627)
Protests	-0.031 (-0.710)	-0.058 (-1.416)	-0.065 (-1.458)	-0.068 (-1.514)
Military role	0.303 (0.475)	-0.286 (-0.417)	-0.395 (-0.568)	-0.382 (-0.553)
Resource dependence		-0.585*** (-2.178)	-0.656*** (-2.162)	-0.675*** (-2.096)
GNP per capita			0.186 (0.696)	0.239 (0.634)
Growth				-0.012 (-0.120)
R^2	.181	.230	.233	.232
χ^2	19.66	32.34	31.02	31.67
Number of observations	30	30	30	29

Note: GNP = gross national product.
 ** $p < .05$. *** $p < .01$.

resource dependence can have a serious negative impact on both democratic transition and democratic consolidation. The empirical section provides strong evidence for the link between natural resource dependence and political regimes. From the period between 1970 and 1995, countries with higher levels of natural resource dependence tended to be more authoritarian than their less resource dependent counterparts. Higher levels of natural resources are associated with higher levels of government consumption and worse government performance. After the initial wave of democratization, countries with higher levels of natural resource dependence experienced a backslide toward authoritarian rule.

Before the third wave of democratization in the 1990s, almost all African countries were authoritarian, including the rentier states. Thus the correlation between authoritarianism and resource abundance is essentially a post-third wave phenomenon. Furthermore, because post-third wave democratization has been greatly facilitated by outside pressure, we intend in future works to formally investigate to what extent the failure of democratic reforms in most rentier states results from less dependence on aid resources and thus less vulnerability to donor political pressures. In other words, the distinct character of rentier states may be their ability to deal with oppositions as well as donors.²²

One interesting avenue for further research would be to compare the effects of natural resource dependence and foreign aid on political regimes. The theory forwarded in this study points to two possible conjectures on the effects of natural resource rents versus foreign aid on political regimes. First, governments with large natural resource endowments have more discretion in spending these rents, whereas foreign donors can put both economic and political constraints on aid. Second, incumbents in governments with large natural resource endowments have an informational advantage over challengers to the level of natural resource rents, whereas foreign aid flows are much more transparent. According to both conjectures, natural resource dependence should have a larger negative effect on political regimes. Our preliminary empirical results find that although natural resource endowments and foreign aid both increase the levels of government consumption of natural resources and foreign aid, they have the opposite effects on political regimes.²³ Natural resources are associated with lower levels of democracy, whereas foreign aid contributes to the emergence of democratic institutions.

22. We thank Nicolas van de Walle for suggesting further investigation of this issue.

23. These preliminary results were generated with panel-corrected standard error regressions similar to those in Table 1. In these regressions, the level of democracy was regressed on the log of GDP per capita, economic growth, decade dummy variables, natural resource dependence, and overseas development assistance as a percentage of GDP. The coefficients for natural resource dependence and foreign aid were -0.46 and 0.04 , respectively, and both were highly sta-

Finally, instead of viewing low state capacity (which allows an incumbent to manipulate state rents) to be exogenously determined, we could thoroughly investigate how corrupt rentier states use low state capacity to further undermine the legal order and facilitate rent seeking.

APPENDIX A Average Resource Dependence Scores

Country	Score	Country	Score
Angola	3.49	Madagascar	1
Benin	1	Malawi	1
Botswana	4	Mali	1
Burkina Faso	1	Mauritania	3.59
Burundi	1	Mauritius	1
Cameroon	1.57	Mozambique	1
Cape Verde	1	Namibia	3
Central African Republic	1.11	Niger	2.78
Chad	1	Nigeria	3.7
Comoros	1	Rwanda	1
Congo	2.89	São Tome e Principe	1
Côte d'Ivoire	1	Senegal	1.24
Djibouti	1	Seychelles	1
Equatorial Guinea	1.27	Sierra Leone	1.48
Ethiopia	1	Somalia	1
Gabon	3.62	Sudan	1
Gambia	1	Swaziland	1
Ghana	1.46	Tanzania	1
Guinea	4	Togo	2.24
Guinea-Bissau	1	Uganda	1
Kenya	1.08	Zaire	3.76
Lesotho		Zambia	4
Liberia	3.11	Zimbabwe	1

tistically significant (t statistics of -5.77 and 4.27 , respectively). Both foreign aid and resource dependence had a positive and statistically significant effect on government consumption (coefficients of 1.59 and 0.17 and standard errors of 1.72 and 5.45 , respectively).

APPENDIX B
Variables for Panel Regressions

Variable	Observations	<i>M</i>	<i>SD</i>	Minimum	Maximum	Source
Log of GDP per capita	1,324	7.04	0.58	5.8	9.03	Log of Bates, GDPea
GDP growth	1,122	0.7	8.07	-47.5	91.79	Bates
Resource dependence	1,665	1.74	1.17	1	4	Constructed
Life expectancy	1,519	46.91	7.05	32.01	71.12	Bates
Ethnic fragmentation	1,584	3.38	1.73	1	9.8	Bates
Coups	1,146	0.05	0.22	0	1	Bates
Crises	1,140	0.09	0.34	0	4	Bates
Demonstrations	1,140	0.16	0.58	0	6	Bates
Riots	1,140	0.16	0.64	0	7	Bates
Strikes	1,140	0.04	0.25	0	4	Bates
Assassinations	1,140	0.07	0.37	0	7	Bates

Source: Bates (1999).

Note: GDP = gross domestic product.

APPENDIX C
Governance Measures

Variable	Observations	<i>M</i>	<i>SD</i>	Minimum	Maximum
Voice	46	-0.444	0.73	-1.694	1.012
Stability	37	-0.667	0.82	-2.586	1.144
Effectiveness	38	-0.532	0.56	-1.769	0.221
Regulation	43	-0.401	0.66	-2.34	0.572
Rule of law	43	-0.572	0.7	-2.153	1.279
Control of corruption	37	-0.48	0.51	-1.567	0.535

APPENDIX D
Variables for Cross-Sectional Regressions

Variable	Observations	<i>M</i>	<i>SD</i>	Minimum	Maximum	Source
Regime98	40	9.9	5.81	1	20	Polity 98
Regime94	38	10.16	6.57	1	20	Polity III
Number of elections	47	6.19	3.88	0	14	Bratton and van de Walle
Percentage of seats	47	76.71	39.02	0	100	Bratton and van de Walle
Protest frequency	42	9.05	7.56	0	26	Bratton and van de Walle
Military role	42	0.02	0.56	-1	1	Bratton and van de Walle
Resource dependence	46	1.8	1.22	1	4	Constructed
Log of GNP	47	6.07	0.84	4.38	8.35	Log of Bratton and van de Walle, GNP

Source: Bratton & van de Walle (1997).

Note: GNP = gross national product.

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