Natural Resources and Democracy in Latin America

Thad Dunning
Associate Professor
Department of Political Science
Yale University

Background paper prepared for Latin America and Caribbean Regional Flagship Report on commodities (Office of the Regional Chief Economist, IBRD)

This version: September 14, 2009
I. Natural Resources and Democracy in Latin America

Do oil and other mineral resources inhibit democracy? Studies of mineral-rich countries in the Middle East, Africa, and other world regions have often suggested that the answer is yes. In a seminal contribution, Ross (2001) found a negative partial relationship between oil and democracy in a broad cross-section of countries; unlike previous research, Ross’s (2001) empirical strategy allowed confounding variables to be plausibly controlled, and his cross-regional data set allowed him to generalize the previous claims of scholars of the Middle East (see also Ross 2008). The research helped spark a large body of subsequent work on the topic. The claim that oil hinders democracy was picked up by journalists and policymakers: Thomas Friedman (2006), for instance, coined the First Law of Petropolitics, according to which the price of oil and the “pace of freedom” are inversely related.

Yet even if natural resource wealth hinders democracy on average (and some important recent papers have dissented from this conclusion, as described below), it does not appear to have done so in Latin America. Dunning (2008: 128-132) finds a positive relationship between oil and democracy in time-series cross-section data from 18 Latin American countries between 1960 and 2001; the positive relationship persists when other kinds of mineral resources (such as copper) are included, and it is robust to the exclusion of potentially influential cases such as Venezuela. Ross (2009), using similar data, finds the same result. Haber and Menaldo (2009) find a positive relationship between natural resources and democracy in a longer time series for Latin America, at least when the latter variable is measured in levels; when democracy is first-differenced by year, and when the authors address possible non-stationarities in the data, they find no relationship, on average, between resources and the political regime.

Within-country evidence from Latin America also suggests that natural resources have not harmed, and may have helped, democracy. In Venezuela, for example, a democratic regime consolidated during the oil booms of the 1970s—at a time when military authoritarianism was the modal regime type in South America—while it destabilized only once oil prices fell in the 1980s and 1990s; as discussed in more detail below, the relationship between oil and democracy in the most recent years appears somewhat ambiguous. Ecuador re-democratized in 1979, after the discovery of petroleum flooded the fiscal coffers of the state with oil revenues. Chile has South America’s most prolonged democratic trajectory (one that was, nonetheless, pointedly interrupted by the authoritarian Pinochet regime), despite the country’s substantial fiscal reliance on various natural resources during the twentieth century (first sodium nitrate and then copper). Mexico also democratized after it became a large-scale producer of oil in the late 1970s, though it did so with a substantial lag. This evidence does not, of course, prove that mineral resources have promoted democracy in Latin America, but it does suggest that

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2 These results are discussed and compared in further detail below.
the empirical relationship between resources and democracy is substantially more positive (less negative) in Latin America than in other regions of the world.

Why is Latin America different? There are compelling theoretical reasons to think that oil and other mineral resources may harm democracy. After all, oil tends to provide a source of windfall income to whoever controls the state, plausibly increasing the incentives of various actors to take costly actions to control the state through non-democratic means. Ross (2001) argued that oil revenues lead to greater military expenditures (thereby increasing the repressive capacity of the state) and lower non-oil tax rates, while inhibiting social and economic changes that could promote the emergence and persistence democracy (see Ross 2009 for further discussion).

Dunning (2008) proposes one theory that may help explain Latin American exceptionalism: while conflict over control of natural resources can indeed promote authoritarianism, natural resource “rents” can also moderate redistributive tensions in non-resource sectors of the economy. If the threat of redistribution is one disincentive associated with democracy for elites, then revenues from oil and other minerals can also weaken elites’ incentives to resist democracy, other things equal. In Latin America, where redistributive conflict has plausibly posed an important obstacle to getting and keeping democracy, oil’s role in moderating redistributive conflict may be relatively important. Moreover, resource-rich Latin American countries tend to be less dependent economically on mineral resources than their counterparts in the Middle East or sub-Saharan Africa, where mineral wealth tends to be the “only game in town.” Together, these factors may make the moderation of conflict in non-resource economic sectors a relatively important force in Latin America: in the horserace between the authoritarian and democratic effects of natural resource wealth, the democratic effect may thus be relatively strong.

This theory may not, of course, provide the only explanation for the apparently anomalous relationship between resources and democracy in Latin America. The purpose of this background paper is therefore to review theoretical arguments that link natural resources to the political regime and then to discuss why these effects may differ in Latin America. Such a discussion, of course, begs the question of what those effects actually are; I thus also describe the evidence that oil has not hindered, and may have helped, democracy in the region, and I discuss case-study evidence that may illuminate the mechanisms through which natural resources have influenced democracy in the region. Recent work has also challenged the idea that there is any negative effect of natural resources on democracy at all (e.g., Haber and Menaldo 2009). As I discuss below, one possibility consistent with this evidence is that natural resources have positive and negative effects on democracy, which might cancel on average; another possibility is that the regime type is simply invariant to the presence of natural resources. Finally, in the conclusion, I discuss policy considerations relating to the role of state ownership or taxation of natural resources and other topics.
II. Crude Democracy, in Theory

The idea of an authoritarian “resource curse” is deeply embedded in contemporary thinking about the relationship between mineral wealth and democracy, and with good reason. Rulers of resource-rich countries from the Arabian Peninsula to the former Zaire appear to have used natural resource revenues to stabilize authoritarian rule.

Yet the claim that resources inhibit development or democracy also fails to explain important anomalies. For one, it fails to explain the co-existence of natural resource wealth and democracy in such countries as the United States, Canada, Australia, Norway, or even South Africa (today). In addition, some countries may be democracies not despite oil, but in part because of it. Karl (1987, 1997), for instance, argued that the availability of petroleum revenues played a crucial role in the emergence of democracy in Venezuela (see also Dunning 2008). The empirical evidence in favor and against the notion that there is an authoritarian resource curse is discussed further below. In this section, I discuss the theoretical basis for thinking that oil might hinder, or instead help, democracy.

The fiscal basis of rentier states

In order to think systematically about the possible political effects of natural resource wealth, it is useful to begin by reviewing some of the canonical features of the economic sectors we are considering.

One characteristic feature of petroleum and similar natural resources such as copper or Kimberlite diamonds is their tendency to produce rents, or the economic returns that surpass the returns to putting land, labor, and capital to their next-best alternative uses. This elevated return to natural resource extraction, above its opportunity costs, may stem from many forces, including an important oligopolistic element in world markets (Mommer 2002, Monaldi 2002).

In addition, resource production tends to be geographically-concentrated and to take place in economic enclaves, with relatively few direct linkages to the rest of the economy (Hirschman 1977). Even in settings like the United States in the late nineteenth century and early twentieth centuries or Chile in the late nineteenth century, where production of natural resources by small producers was more widespread, oil quickly became a relatively capital- as well as knowledge-intensive industry (Wright and Czelusta 2004, 2007). In many developing countries today, resource production is undertaken by large multinational enterprises or by parastatals; compared to other sectors, the natural resource sector typically employs relatively few people.

Partially as a consequence of the previous points, resource rents tend to be relatively easy for states to tax; they thus fairly naturally accrue to whoever holds political power.

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3 Economic historians have also pointed out the crucial role of natural resource production in the emergence of one developing country, the United States in the nineteenth century, as an industrial power (Wright and Czelusta 2004, 2007).
Moreover, due to the capital intensity of resource production and the fact that it tends to involve a very small fraction of the labor force, resource rents tend to flow into the fiscal coffers of the state without substantial intermediation by domestic actors on the production side. Even in the most liberal states such as the United States and the United Kingdom, where resource extraction is often in private hands and taxation of the resource sector is low in comparative perspective, resource sectors can provide substantial fiscal resources for the state.

Finally, natural resource rents can supply a source of government revenue that can partially supplant other forms of revenue-generation, such as taxation. As a theoretical matter, this seems clear: if taxation is costly and generates some distortions (such as diversion of production into less-easily-taxed activities), then the tax rate at which the marginal benefits and costs of taxation can be shifted downwards by a resource boom, which provides an alternate and easier-to-capture source of government revenue. (Put differently, suppose there are diminishing marginal returns to government spending. Then the optimal tax rate may be decreasing in natural resources, if taxes and resource rents both feed the fiscal coffers of the state).

Together, these elements of natural resource sectors imply that the main political-economic impact of petroleum reflects the effect of rents on the revenue-generation and expenditure patterns of the state (Beblawi 1987, Mahdavi 1970). In particular, natural resource booms tend, _inter alia_, to:

- Foster significant windfall resources for the state;
- Generate, therefore, a valuable "prize" for whoever controls political power;
- Limit other forms of government revenue generation, such as taxation (a point discussed further below).

Note that oil, copper, kimberlite diamonds, and other forms of mineral wealth should be contrasted with other natural resources that are not typically understood to provide the basis for “rentier states,” that is, states in which resource wealth provides a high proportion of government revenue (Luciani 1987:72; Herb 2005:8). For instance, alluvial diamonds (which are scattered by riverbeds far away from underground pipes) and certain other minerals are geographically diffuse, demand little in the way of start-up costs, and may be relatively easily harvested by a wide range of private actors (Snyder and Bhavnani 2005). Taxing the latter kinds of resources may therefore be much like taxing other kinds of economic production by citizens; instead of falling easily into the coffers of the state, such forms of revenue-generation may involve substantial distortionary and political costs. In the same vein, primary commodities such as coffee or cocoa typically do not produce rents in the sense that term is used here.  

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4 This distinction between resources that produce rents and those that do not parallels a distinction in the literature on natural resources and conflict between concentrated, non-lootable or “point-source” resource and geographically “diffuse” resources that are “lootable” by private actors (Le Billon 2001, Snyder 2001, Snyder and Bhavnani 2005, Isham et al. 2003).
such as Kimberlite diamonds or copper typically have similar characteristics; the discussion should be understood to apply to such natural resources as well).

Although there is fairly widespread agreement on the basic fiscal effects of natural resource booms, the political consequences of these features of rentier states are less clear-cut. I turn now to the relationship between rent-producing natural resources and the political regime.

The political effects of rentierism

By way of introduction, it may be useful to consider the following scenario. Suppose that under an existing democracy, rich elites have an opportunity to support a coup against a democratic regime. How might resource rents shape the economic costs and benefits of democracy to these hypothetical coup plotters? Figure 1, which is taken from Dunning (2008, Chapter 1), depicts a stylized game between a relatively poor democratic majority and a rich elite. In the first move of the game, a relatively poor democratic majority sets economic policy. In the second move of the game, a set of relatively rich elites decides whether to support a coup against democracy. Here, there is some exogenous cost to staging a coup that is independent of economic interests (such as the risk that a coup fails); in deciding whether to stage a coup, elites must weigh the payoff to a coup against this cost. Factors that tend to increase the payoff to staging a coup (left-hand branch of Figure 1) will increase the incidence of coups, while factors that tend to increase the payoff (or decrease the disutility) to living under democracy (right-hand branch of Figure 1) will decrease the incidence of coups. The key analytic question is then how an increase in resource rents shapes these payoffs.

[FIGURE 1 HERE]

In this simple game, economic policy has two components: the distribution of resource rents and the setting of a tax rate on non-resource wealth or income. First, the group that holds greater de jure political power—the relatively poor majority under democracy or rich elites under an authoritarian regime—can choose the distribution of rent between different social groups. (This assumption stems from the observation that the state tends to capture resource rents relatively easily; so political power entails control over the distribution of the rents). Second, the group that holds political power also sets a tax rate on private wealth or income. In the models considered by Dunning (2008, Chapter 3),

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5 The expected costs associated with the coup might include the likelihood of success or the probability of exile or imprisonment following an unsuccessful coup; these may be weighed against the anticipated costs and benefits of continuing to live under a democratic regime.

6 In this stylized world, there will be some critical value of the exogenous cost at which elites will be indifferent between staging and not staging a coup, given other costs and benefits associated with authoritarianism and democracy; for values of the cost that fall below this critical threshold, elites would prefer to support a coup than to live under a democratic regime.

7 As a simplification, and to emphasize the distinction between these economic sectors and resource wealth, I will refer to non-resource sectors such as manufacturing, agriculture, and services collectively as the private sector, to profits and wages from these sectors as private income, and to assets owned in the non-resource sectors as private wealth.
this tax might be thought of more generally as any potentially redistributive fiscal policy, whether it involves an actual “tax” or not. Land reforms or even monetary policies may fall under the rubric of a redistributive “tax” on private incomes of some citizens. As with the distribution of resource rents, the ultimate tax policy adopted in the game depicted in Figure 1 depends on the actions of elites. If elites stage a coup, they come to power and can reset the tax rate. If they do not stage a coup, the tax rate set by the democratic majority is implemented.

The ability to set the tax rate on private income and to distribute resource rents may both play an important role in shaping the attractiveness of coups to elites. Importantly, they may shape not just the current economic incentives of elites but also the anticipated future costs and benefits of democracy. Opportunities for a coup may be fleeting, since the collective action capacity necessary to mount a coup may be only temporarily-achieved; while democratic decision-makers and the democratic polity may make concessions to elites in the face of a coup threat today, the ability of elites to influence policy might be weaker tomorrow, when their ability to threaten a coup is weaker (for historical examples, see, e.g., Acemoglu and Robinson 2006: 133-142). Dunning (2008, Chapter 3) presents dynamic models that allow fuller analysis of credible commitment issues; even in the one-period game in Figure 1, however, in considering whether to support a coup, elites may consider the costs and benefits of living under democracy not just in the present but also in the future.

How, then, do the two components of economic policy shape the coup incentives of elites? On the one hand, the ability to influence the distribution of resource rents may increase the incentives of elites to stage coups. Because the group that controls political power controls the distribution of the rent, there is an opportunity cost to foregoing a coup: the preference of members of the relatively poor democratic majority is to use resource rents to fund social spending that benefits their group. Foregoing a coup when conditions would permit one brings a future as well as a current cost to elites, because the democratic majority cannot easily commit not to use its political power to deprive elites of future rents, should democracy endure and elites’ ability to organize a successful coup recede.

Conflict over the distribution of rents may thus provide a “direct” authoritarian effect of rents. This claim is consistent in a reduced-form way with much of the recent literature on natural resource wealth and authoritarianism, including several of those discussed by Ross (2001, 2009). For instance, control over resource rents may be used strategically by elites to moderate demands for political reform or to “buy out” elements of the political opposition (Acemoglu et al. 2004; see also Robinson et al. 2006). In existing

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8 Ross (2001) details three mechanisms through which oil may hinder democracy. First, resources may provide incumbents with revenues through which they can increase the repressive capacity of the state. Second, by discouraging taxation, resources may diminish pressures from citizens for greater state accountability, including through the adoption of representative institutions. Finally, because of the enclave character of resource extraction, resources may not encourage broad modernizing changes, such as occupational diversity, that are thought by some scholars to be propitious for democracy. Ross (2009) finds support for the second mechanism but not the first or third.
democracies, rents may engender a strong incumbency advantage that can inhibit political competition and promote creeping authoritarianism (Wantchekon 2002); in authoritarian regimes, when elites can transfer resource rents directly to themselves and their supporters, they may exclude other groups from the direct benefits of the rents and thereby inhibit the development of autonomous challenges to their rule.9 This direct authoritarian effect of rents may also explain why incumbents in resource-rich states appear to have heightened incentives and capacity to take costly actions to stay in power. Ross (2001), for example, finds that natural resources may inhibit democracy by promoting military spending (though Ross 2009 finds less support for this mechanism).

Yet the ability to set tax policy in non-resource sectors of the economy may also matter to elites. Much of the recent political economy literature emphasizes that the actual or anticipated extent of economic redistribution can shape the incentives of elites to support or oppose democracy (e.g., Acemoglu and Robinson 2001, 2006; Boix 2003; Reuschemeyer, Stephens, and Stephens 1992), though the effectiveness of the tax bureaucracy and other aspects of state capacity can also shape the extent of the actual redistributive threat that democracy poses (Menaldo 2008, Soifer 2008). A relatively poor group of citizens can, at least in principle, use its numerical advantage at the ballot box to redistribute more private income away from a rich minority than this minority would like. Especially in Latin America—the most unequal region of the world and one in which tensions over redistribution have played an important role in shaping the emergence and persistence of democracy in many countries—the ability to control tax (or other redistributive) policy may provide an important incentive for elites to support coups.

Yet resource booms may make this consideration less important. There is some debate about the size of the marginal reduction in the non-resource tax burden associated with an increase in resource rents; comparable long-term tax data are difficult to compile across countries, and the fiscal effects of resource booms can be difficult to measure. Yet as discussed below, the case-study literature strongly suggests that resource booms have tended to erode the non-resource tax base, in Latin America and elsewhere (Soifer 2006, Dunning 2008). Indeed, this claim is at the core of the literature on so-called “rentier states” (Ross 2001, 2009; Mahdavy 1970, Beblawi 1987). If so, then by reducing the extent to which democratic majorities redistribute private income or wealth away from rich elites through taxation, land reform or other measures, resource rents can reduce the economic cost of democracy to elites.

This implies that while resource rents may raise the payoff to elites from staging a coup (left terminal branch of Figure 1), they may also raise the payoff to (or reduce the disutility of) continuing to live under democracy (right terminal branch of Figure 1). This latter effect occurs both because resource rents may reduce the current redistributive costs of democracy but also because resources may endogenously lower the extent to which democratic regimes may redistribute private income away from elites in the future, when a credible coup threat does not exist. Given that coups are not free (they come with

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the risk of imprisonment or exile, for instance), the mitigation of redistribution that is associated with resource wealth may diminish the relative attractiveness of coups.

This brief introduction suggests, in a schematic way, Dunning’s (2008) argument about the dual effects of resource wealth on the political regime. On the one hand, a resource boom may increase the incentives to control the distribution of resource rents and decrease the attractiveness of democracy to elites. This is the “direct,” authoritarian effect of resource rents. On the other hand, a resource boom may also mitigate the threat of redistribution of private income under democracy and thereby increase the attractiveness (or reduce the disutility) of democracy. This is the “indirect,” democratic effect of rents, which is indirect because it works through the effect of resource rents on the threat redistribution, which in turn shapes incentives to support or oppose democracy.  

While Figure 1 focuses on democratic breakdown, a similar theoretical argument may be made about democratization. The anticipated effect of resource rents on future distribution and redistribution is relevant for elites in an authoritarian regime who, faced with a challenge to their rule “from below,” must decide between repression and democratization (Dunning 2008, Chapter Three). Here again, the effects of resources on the prospects for democracy may cut in two directions. Living under democracy in a resource-rich country implies an opportunity cost to the rich, since continuing to control the state entails greater current and future control over the distribution and consumption of the rents. Yet resource rents may also mitigate the current and future redistributive costs of democracy, thus increasing the payoff to (decreasing the disutility of) permitting a democratic transition.

If so, resource rents may have both authoritarian and democratic effects: “crude democracy” is not an oxymoron. The key question is then what explains variation in the political effects of natural resources across countries. For purposes of this background paper, the right question to ask may be: what makes Latin America different?

In this schematic framework in Figure 1, there is a horserace between the competing democratic and authoritarian effects of resource wealth. The democratic effect arises, in this model, because resource rents mitigate the threat of redistribution under democracy. This effect of resources is therefore more important where the threat of redistribution is more severe and thus more consequential for shaping the political incentives of elite actors (Dunning 2008, Chapter Three). Where the threat of redistribution of non-resource income is more modest or less consequential, on the other hand, the democratic effect of natural resources should be weaker.

In Latin America, the threat of redistribution has credibly played a quite important role in shaping the emergence and persistence of democracy. One can point to many historical episodes in which redistributive conflict has played an important role in democratic
breakdowns: Argentina (1955), Chile (1973), Ecuador (1972), Guatemala (1954), Venezuela (1948-1951), and perhaps again Venezuela (1992, 2002) provide just a few possible examples. Of course, the extent of redistribution has clearly varied across different democracies in the region, and the redistributive threat may be more potent where the state is more capable or the tax bureaucracy more effective (Menaldo 2008, Soifer 2008). Relative to many other parts of the world, however, it seems fair to say that the threat of redistribution has played a particularly important political role in Latin American democracies.

There may be a number of reasons this is so. Latin America is the most unequal region of the world (IDB 1998). This means, inter alia, that the preferences of the median voter over redistribution may diverge especially sharply from the preferences of rich voters, or even voters with average income levels. In the models developed in Dunning (2008, Chapter Three), inequality of private (non-resource) income strengthens the democratic effect of resource rents. It is important to stress that this is not because inequality of private income is itself good for democracy: just as in theoretical frameworks from Tocqueville (1835) to Acemoglu and Robinson (2006), high inequality is seen as harmful to the chances for the emergence and consolidation of democracy, precisely because it can engender more divergent preferences between elites and masses over tax policy. According to the theory, because the preferences of poorer citizens for greater redistribution are assumed to be more influential under democracy than under authoritarianism, democracy is more costly to elites in more unequal societies. Yet where redistribution is a more salient concern for elites—precisely because there is greater inequality of non-resource income or wealth—the effect of resource rents in moderating redistributive conflict should be more important.

Of course, while inequality may be a necessary condition for divergence of preferences over tax policy, it may not be sufficient. Many Latin American countries have also seen the emergence, at various points during the twentieth century, of mass labor-based parties which articulated a policy of wage and salary defense for the urban-industrial and sometimes the rural working class (Collier and Collier 2001). More recently, various neo-populist candidates and parties have also pressed for distribution to the poor, which may also raise redistributive demands on the rich (Roberts 2004). The presence of mass mobilization and labor-based or populist parties may also be necessary for the atmosphere of redistributive conflict that has characterized many of Latin America’s democracies, even today. The more general prediction, perhaps insufficiently elaborated in Dunning (2008), is thus that “redistributive pressure” is harmful to the emergence and persistence of democracy; but where redistributive pressure is potentially greater, due to inequality, the presence of mass parties, and/or other factors, the role of oil or other resource rents in moderating redistributive pressure should be relatively important. In the horserace between the democratic and authoritarian effects of natural resources, the democratic effect should be more important, relative to societies in which the redistribution of non-resource income is not as important.

These reflections lead to consideration of one other variable that may help explain Latin American exceptionalism (the empirical reality of which is still to be considered below):
the extent of resource dependence. In the early literature on natural resources and democracy (as well as natural resources and economic growth), researchers employed empirical measures of resource wealth that were, in fact, measures of resource dependence, such as the ratio of resource exports to GDP (see, e.g., Sachs and Warner 1995).

In fact, of course, resource abundance is quite different from resource dependence. The distinction may be important for understanding when the democratic effect of natural resources should be relatively strong. In those countries where natural resources are the only economic “game in town,” the effect of resources in moderating redistributive conflict over non-resource income may be of only marginal political importance. In resource-abundant countries that are not as resource-dependent, however, this effect may be more important.

To throw this distinction into sharper relief, it may be useful to compare typical Latin American resource-rich countries with many oil exporters in the Persian Gulf and West Africa. During Venezuela's oil boom of the 1970's, oil revenues provided more than 80 percent of the central government's budget, yet oil only constituted between 10 and 20 percent of gross domestic product.\textsuperscript{11} Even during the boom, the private sector remained quite robust: Karl (1997: 142), for example, reports that the participation of the private sector was 85.4 percent of GDP from 1970-1972 and 86.3 between 1973-1975, at the acme of the first oil boom; while this participation eroded subsequently, at least in percentage terms, the private sector continued to contribute well over half of the total value of economic activity. In Chile, between the turn of the twentieth century and the First World War, the mining of nitrate supplied the majority of government revenues yet made up just 14 percent of GDP, on average (Mamalakis 1976: 38-9; Blakemore 1974: 43-4); the rest of the economy, and particularly the agricultural estates of the Central Valley, remained a crucial component of overall economic activity. Similarly, after the collapse of the nitrate sector and the rise of copper between the First and Second World Wars, revenues from copper came to finance up to 40 percent of annual government expenditures but only constituted between 7 and 20 percent of GDP (Moran 1974: 6). During Ecuador's oil boom of the 1970's, the national budget grew 21 percent in 1974, 32 percent in 1975, and 32 percent in 1976, much faster than the overall growth in economic product (Martz 1987: 51, 159, 404); in comparative perspective, Ecuador during the boom was a resource-abundant country but not a resource-dependent one.

Such cases present striking contrasts, however, with many resource-rich states in the Persian Gulf and in West Africa. In the midst of Saudi Arabia's oil boom of the 1970's, petroleum constituted upwards of 80 percent of government revenue, just as in Venezuela; but it also appears to have reached between 70 and 80 percent of GDP (though data are not as reliable). Similar patterns of resource dependence appear elsewhere in the oil-rich Gulf states and in Africa. Perhaps the most extreme recent example is Equatorial Guinea, a country of just around 500,000 people that became Africa's third biggest oil producer with large deposits of offshore oil were discovered in

\textsuperscript{11} Author's calculations, \textit{Ministerio de Energía y Minas}, various years; see also Baptista (2004: 73).
the mid-1990's. Due solely to the influence of these discoveries, Equatorial Guinea became the country with the second-highest per capita income in the world; the oil sector in Equatorial Guinea has comprised over 90 percent of GDP (McSherry 2006; International Monetary Fund 2005).

Again, these examples suggest that there is a useful distinction to be drawn between rentier states in which the total economy (rather than simply the government) is relatively dependent on natural resources and those in which the degree of resource dependence is considerably lower. How is this distinction tied to the large-scale political outcomes this book seeks to explain? Inspection of the countries listed in the previous two paragraphs suggests that the resource-dependent countries tend to be more authoritarian than the merely resource-abundant countries. The framework sketched in Figure 1 suggests this may not be coincidence: where natural resources are the only economic game in town, the democratic effects of natural resources may be substantially less important relative to resource-abundant countries that are not as resource-dependent. This distinction may also contribute to explaining Latin American exceptionalism, since the resource-rich countries of the region are comparatively less resource-dependent than many of the authoritarian rentier states of the Middle East and Africa.

In sum, the effects of natural resources on the broader political regime do not appear unidirectional. In many circumstances, natural resources can support authoritarian regimes, and retaining power through authoritarian means may be more valuable to incumbents when conflict over the distribution of resource rents is more important. But where there are cross-cutting dimensions of conflict—such as vertical redistributive conflict in non-resource sectors of the economy—resource rents may play an important role in mitigating tensions and making democratic regimes less costly to key actors. Indeed, a range of other theoretical and empirical work in political economy has recently the importance of understanding the conditional effects of natural resource wealth. For instance, Smith and Kraus (2005) survey a range of countries that are “democracies despite oil” (several of them Latin American countries); while Herb (2005) alsosuggests there may be effects that cut in different directions. Morrison (2007) develops a theoretical model in which natural resources may stabilize either democracy or autocracy.

III. Crude Democracy, in Practice

But empirically, are the political effects of resources in Latin America really different? And if so, why?

This section takes up these questions in several different ways. I first consider the empirical association between natural resources and democracy, both across countries (within Latin America and the Caribbean) and then within individual countries. This evidence helps make the point, first, that resources do not appear to have harmed and may have helped democracy in the region; and second, that the relationship between resources and democracy is more positive (less negative) than in other world regions.
This does not, of course, help explain why Latin America appears to be different. A full empirical evaluation of the conditional theories discussed above runs into substantial difficulties, as I note in the conclusion. However, I use a brief case study of Venezuela, and tangential discussion of other cases, to examine some of the mechanisms that appear to link resources to the political regime, emphasizing the link between resources and the relative presence or absence of redistributive conflict under democracy.

As a preliminary point, it is useful to note that there is substantial variation in the size of natural resource rents across Latin America and the Caribbean. Take the case of oil. Table 1 shows the average real values of oil and gas rents per capita for 20 Latin American and Caribbean countries from 1960-2001, in 2000 US$. Here, the value of oil and gas rents is calculated from the World Bank series of Hamilton and Clemens (1999) and is extended back to 1960 using production data from British Petroleum (2005), as in Dunning (2008); essentially, rents are given by the value of production, net of pre-tax production costs and a “normal” return to capital (typically 15 percent). The measure thus provides an approximate indicator of the absolute amount of oil rents that are, in principle, appropriable by the central government. I then divide the value of rents by population to get an approximate measure of rents per capita.

If the resource curse argument holds for Latin America, then countries at the top of the list should tend to be less democratic than their oil-poor neighbors. Yet this is not the empirical reality. Figure 2 compares Polity scores by year for the region’s top four long-term oil producers—Trinidad & Tobago, Venezuela, Ecuador, and Mexico—to those of 16 lesser or non-oil producers; Polity scores are plotted against year from 1960 to 2001, the most recent year for which I have comparable data on all countries. (See Ross 2009 for a similar figure). These Polity scores consist of the sum of a 0-10 increasing measure of democracy and a -10-0 decreasing measure of authoritarianism; thus, a maximally-democratic country would score 10 and a maximally-authoritarian country would score -10.

As Figure 2 shows, during this period oil-rich countries were more democratic, as measured by the Polity score, than their oil-poor neighbors. Indeed, during the 1970s, as more oil-poor countries of the Southern Cone fell victim to prolonged authoritarian episodes, the oil-rich countries tended to be substantially more democratic than the oil-poor countries, though there is less difference today. Indeed, during this period the leading democratic exemplar in South America was oil-rich Venezuela. Of course, there are other ways to slice the list of oil producers; however, including lesser per capita oil

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12 In the conclusion, I contrast papers that find little effect of resources on democracy, such as the paper by Haber and Menaldo (2009) with conditional theories such as Dunning’s (2008) or Morrison’s (2009), which suggest that natural resources can have both positive and negative effects on democracy (but that the net effects could well cancel on average).
13 These data are described further in Dunning (2008: 111-113).
14 The other 16 countries are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Paraguay, Peru, and Uruguay.
producers such as Argentina does not change the basic comparison (see also Ross 2009). Note also that the list of non-oil producers includes countries such as Chile who were rich in other rent-producing natural resources, such as copper, and who have long democratic trajectories (though Chile was, of course, authoritarian for about 18 of the 41 years under consideration). Inclusion of democracies rich in other natural resources may weaken the comparison based on oil.

As Ross (2009) shows, this comparison between oil and non-oil producers suggests that while oil may well have helped democracy in Latin America—where oil producers during this period had higher Polity scores than non-oil producers—this relationship does not hold in other regions. In the Middle East, sub-Saharan Africa, the former Soviet Union, and Asia, oil producers instead have lower Polity scores. Indeed, Latin America is the only world region where cross-sectional comparisons between oil producers and non-oil producers at given points in time produces a graph like Figure 2.

Within Latin America and the Caribbean, then, this cross-sectional comparison is not consistent in any direct way with the claim that oil has hindered democracy. What about the within-country relationship between petroleum and the political regimes?

One way to investigate this question is to ask how oil rents are associated with democracy in the oil-rich countries—where, notwithstanding high average values compared to the rest of the region, there has been substantial variation in the real value of oil rents. Figures 3 through 6 depict the relationship between Polity scores and the one-year lag of real per capita oil rents (in year 2000 US$) for the top four oil and gas producers listed in Table 1—that is, Trinidad & Tobago, Venezuela, Ecuador, and Mexico—from 1960 to 2001. In all four graphs, the best linear fit to the scatterplot has a positive slope: as the lagged real value of oil rents increases, so does the Polity score. (Using contemporaneous values of real oil rents per capita produces similar scatterplots).

The quality of the fit varies in Figures 3 through 6. For example, there are more outlying values for Trinidad & Tobago and Mexico (that is, country-years with low lagged oil rents and high democracy scores, or high lagged oil rents and low democracy scores) than for Venezuela and Ecuador. Yet the bivariate regressions suggest non-trivial postdictive power, at least for Venezuela and Ecuador: the R-squared is 0.26 for the latter and 0.14 for the former, while it is 0.05 for Mexico and 0.03 for Trinidad & Tobago. Moreover, the slope coefficient on lagged oil rents is positive, highly significant (the t-ratios are 2.53 and 3.73, respectively), and substantively non-trivial for both Venezuela and Ecuador. In Ecuador, for example, a $100 increase in real per-capita oil rents is associated with a 1.6 point increase on the Polity scale.

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15 Note that the inter-temporal comparison here is abbreviated, since many countries in Latin America have produced and exported rent-producing natural resources for a much longer period of time than is captured by the 41-year window from 1960-2001. On the other hand, this period saw substantial within-country variation in the value of oil rents, due to the price boom of the 1970s and price drop of the 1980s.
One can, of course, develop more elaborate statistical models of the relationship between oil and democracy, in Latin America and elsewhere. In Dunning (2008, Chapter Four), more fully-specified regression models are fit to data from Latin America and other world regions; such models involve specifying properties of error terms and making other decisions about model specification. The basic story told by Figures 2 through 6 is consistent with that evidence: oil is associated with democracy, not autocracy, both across Latin American countries and within them.

But what accounts for this finding? This is substantially more difficult to evaluate. It is possible that inequality helps explain Latin American exceptionalism; for example, average inequality, measured as labor’s share of manufacturing value-added, is substantially higher in Latin America than in other world regions. (This is a useful measure because it should capture inequality in non-resource sectors of the economy; natural resource sectors can also be omitted, using UNIDO industry classifications). Dunning (2008) presents some evidence that the relationship between oil and democracy is conditioned by the level of inequality; interaction models are fit to global cross-section time-series data and in particular, the level of inequality is interacted with the size of natural resource rents.

Yet inequality measures including this one are subject to well-known deficiencies, as discussed in Ross (2009). More generally, as discussed above, inequality provides only one (possibly individually insufficient) source of “redistributive pressure.” Thus it is really the importance of redistributive threats under democracy that is at issue—not necessarily inequality per se, which is a potentially powerful but admittedly imperfect proxy for this redistributive pressure. Given these measurement and other inferential issues, case studies are especially useful for illuminating the relationship between resource rents, redistribution, and democracy in Latin America. Space allows brief discussion of the Venezuelan case below; discussion of other Latin American cases, such as Chile, Ecuador, and Bolivia, can be found in Dunning (2008).

**Venezuela**

In brief, the relationship between oil and democracy in twentieth-century Latin America has appeared to be the opposite of the First Law of Petropolitics: when oil rents increased, democracy stabilized, while it destabilized when oil rents declined. Figure 7 presents the long-term trends.

[FIGURE 7 HERE]

What is most illuminating, however, is to consider the nature of redistributive conflict during Venezuela’s democratic episodes, with and without oil. Venezuela’s first brief democratic period from 1945 to 1948 was characterized by an atmosphere of intense class conflict, marked by the formation of unions in a number of sectors; political parties made universal suffrage and the extension of other political rights among their primary reforms. The Constitution of 1947 enshrined many political, social and economic rights, including the right of labor to unionize and strike, the right of equal pay for equal work,
the right to social security and health care, and many other provisions that had not appeared in any previous Venezuelan constitution (Kornblith and Maignon 1985), and the labor-based party Acción Democrática (AD) promoted an incipient but assertive program of land reform, massive investment in public works and education, and a vigorous policy of promoting real wage increases (Betancourt 1956: 319-319-342). The party also mobilized and organized actively among lower sectors in both the cities and the countryside, raising the concern among opponents that this popular party was on the verge of monopolizing political power. 16 Most analysts therefore concur that the coup of 1948 was intended to counter the political power of mass majorities under a democracy with universal adult suffrage and, in particular, to block the redistributive reforms proposed by AD (Bergquist 1986: 268; Hellinger 1984: 49; Myers 1986: 122; Urbaneja 1992: 168).

The years after the breakdown of democracy in 1948, however, brought a qualitative change to the fiscal basis of the state, as oil rents became a much more important source of revenue for the Venezuelan state. By the time Venezuela re-democratized in 1958, and especially during the 1970s, oil could underwrite broad-based social spending that did not come at a very high redistributive cost to elites. As Figure 7 indicates, the real value of the central government's oil revenues more than tripled between 1958 and its peak in 1974. Inflation-adjusted spending on education increased by a factor of more than 20 between 1958 and 1980, while real spending on health increased by a factor of nearly 5; as a percentage of total government spending, the budget of the education ministry rose from just over six percent to nearly 19 percent over the same period (Kornblith and Maignon 1985). Many medical services were subsidized and remained completely free until the 1980's (España 1989: 168), and domestic fuel price subsidies made Venezuelan gasoline among the cheapest in the world. A notable feature of the post-1958 period was the hostility of elites to new taxation, which contributed to the total failure of the very few proposals (in 1966, 1971, 1975, 1986, and 1989) that were floated that would have increased taxes even modestly; Acción Democrática instead opted to extract more rents from the oil sector, at the expense of new taxes in the non-resource economic sectors. The land reform program undertaken after 1958 was comprehensive, compared to other agrarian reforms in Latin America (Goodwin 2001: 231), yet full compensation was paid for expropriated land, forestalling greater social conflict (Hellinger 1991: 107). Thus, oil-financed spending played an important role in reducing the demand for greater redistributive policy from below (Neuhouser 1992). Indeed, almost all analysts of Venezuelan democracy after 1958 emphasized the degree of class compromise that characterized the integrative system (e.g., Levine 1978; Collier and Collier 1991) and attributed the stability of democracy to this class “consensus” and “harmony.”

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16 In elections for a Constituent Assembly in 1946, Acción Democrática won 137 of 159 seats; the party's presidential candidate, Rómulo Gallegos, took nearly 75 percent of the vote in the elections of 1947; and in the new Congress, AD had 83 out of 110 deputies and 38 out of 46 Senators (Betancourt 1956: 224-233).
However, and strikingly given the emphasis of analysts on class harmony in Venezuela, the decline of oil rents in the 1980s and especially the 1990s engendered an atmosphere of class conflict and redistributive tension, well before the election of Hugo Chávez in 1998. In 1993, per capita social spending was 40 percent below its 1980 level (Roberts 2004: 59); spending on education and health care fell even further (García Larralde 2000). Between 1984 and 1995 the proportion of the population living below the poverty line increased from 36 to 66 percent, while the purchasing power of the minimum wage dropped by more than two-thirds between 1978 and 1994; all but the wealthiest 20 percent of Venezuelans lost relative income shares over the decades of the 1980's and 1990's (CEPAL 1999: 63). The fall in public spending contributed to a new politicization of class in Venezuela. The most well-known incident involved the so-called “Caracazo” protests that broke out in Caracas in February 1989, after bus drivers promised to pass on to consumers a planned reduction in fuel price subsidies announced by the newly-elected government of Carlos Andrés Pérez—the so-called “day the shantytowns came down from the hills” (Márquez 2004: 201). Yet there were many other popular protests, totaling more than 5,000 from 1989 to 1992 and concentrated in poorer areas of Caracas and other cities (Ellner 1995: 149). In addition, voting behavior became much more tightly linked to class, as the multiclass and integrative components of the party system in Venezuela were almost completely transformed. Alternative political movements such as Causa R and, later, Hugo Chávez's Movimiento Quinta República (MVR) sought to mobilize lower sectors to the near-exclusion of upper-income groups (Ellner 2004: 19-20; López Maya 2004: 77-78); while Chávez drew more middle-class support in 1998 than he did in elections in 2000 or in a recall referendum in 2004, surveys shortly before the election of 1998 found support for Chávez among 83 percent of lower-income groups but just 32 percent among the middle and upper classes (Roberts 2004: 66). The attempted coup of 1992 led by Chávez and other disaffected military officers in fact enjoyed wide support among the popular sectors.

Given low oil prices, and absent more redistribution of non-oil income, the meager distributive programs initiated by presidents such as Pérez and Caldera clearly could not fill the gap between popular demands "from below" and the supply of spending "from above." Plausibly in consequence, the preferences on economic policy of richer and poorer voters diverged significantly (Hellinger 2004: 35, Table 2.1). In a highly unequal country with a majority of poor voters, the preferences of the poor proved most influential at the ballot box. After his election in 1998, Chávez implemented his campaign promise to hold elections for a constituent assembly that would rewrite the constitution; yet in the early years of his presidency, redistributive policy was in fact quite cautious. Only when Chávez’s popularity ratings had fallen sharply by late 2001 did his administration begin to implement economic policies that seemed concretely to threaten the interests of the private sector elite: the passage of several decrees (enabling laws) at the end of 2001 set a ceiling on the size of agricultural estates and subjected proprietors who failed to use more than 80 percent of their land to an "inactivity" tax. This law promised to fall particularly heavily on the 3 percent of proprietors who owned 70 percent of agricultural land (Buxton 2004: 129). In addition, influenced by critics of the previous evolution of Venezuelan oil policy during the 1990's, Chávez also began to move to reassert the central government's control over the state-owned oil company
PDVSA. The threat of greater redistribution played an important role in shaping elite support for an attempted coup against Chávez, who was deposed on April 11, 2002 by a group of military conspirators linked to leaders of the largest business association, FEDECAMARAS (only to be brought back to power 48 hours later). Among its actions during its exceedingly brief window in power, the group of business elites who deposed Chávez appointed the head of FEDECAMARAS as interim president, named a new president of PDVSA, and suspended the Constitution of 1999 and dissolved the National Assembly. Thus, by 2002 Venezuelan democracy had been both transformed and destabilized, and the rise of class conflict in the wake of a decline in oil rents played an important role.

Since 2003, a new oil-led boom has had a somewhat ambiguous relationship to economic and political conflict in Venezuela. It is clear that oil has financed a remarkable expansion in public spending, which has grown at an average annual rate of nearly seven percent since 1998; in particular, social spending on health, education, and subsidized basic foods, some of financed directly by PDVSA through the so-called social Missions, has risen dramatically (see Dunning 2008 for details). As in earlier booms, however, this growth of public spending has in fact come at remarkably little redistributive cost to Venezuelan elites—a fact that is perhaps all the more remarkable in light of rhetorical attacks on the “squalid oligarchy” by President Chávez. This is not to imply that Chavismo has been uncostly for elites; it is instead to assert that the dramatic rise in public and social spending has come at less redistributive cost to Venezuelan private elites than would very plausibly be the case in the counterfactual case of low oil prices. For instance, the current land reform is arguably less extensive than either the agrarian reform that was initiated during the trienio government of 1945-1948 or that which in fact followed redemocratization in 1958—and almost certainly is not more extensive than these other agrarian reforms. In the main, taxes (both direct income and estate taxes as well as value-added taxes) have been lowered rather than raised. To be sure, the state has encroached upon private business, with important if quite targeted expropriations; yet the pace of these has in fact quickened as oil prices have fallen in the past year. Thus relationship between oil and redistribution appears consistent in many ways with previous eras in Venezuela. As one commentator from the Venezuelan opposition put it during the oil boom, “socialism in a petro-state can temporarily dispense with blood and fire” (Romero 2005).

Of course, this is not to say that the rise of oil rents has had democratizing consequences; the evidence here appears much more mixed. Political conflict has remained sharp in Venezuela, even though evidence from public opinion surveys suggests that elite resistance to Chávez, and particularly elite disapproval of economic policies, moderated during the period from 2004 to 2006; in going to the polls to contest the presidency in 2006, the more “moderate” wing of the opposition to Chávez even adopted significant elements of the Chavista rent-based public spending program as its own. On the other hand, despite the substantial degree of electoral contestation in Venezuela since 1998 (including 18 elections, including four votes ratifying the president’s rule, a vote rejecting a package of constitutional reforms, and a vote supporting a more limited constitutional amendment), it seems clear that the rise in oil prices led to a substantial incumbent
advantage in electoral contestation, as suggested theoretically by Wantchekon (2002). The influence of oil on the nature of Schumpetarian democracy thus seems more mixed during the most recent period. For further discussion of the subtle trajectory of recent politics in Venezuela, see Dunning (2008).

Outside Venezuela, redistributive conflict in several other Latin American cases, and its relationship to the presence or absence of oil and gas rents, presents some similar contrasts; space does not allow detailed discussion of these cases, however. Dunning (2008) provides further detail.

III. Conclusion: Further Considerations and Policy Implications

The so-called “resource curse” has commanded substantial attention from researchers and policy-makers. However, it is useful to recognize that in many settings, resources do not lead to authoritarianism or other detrimental political outcomes. In Latin America, oil and similar resources do not appear to have harmed democracy—and may, on average, have helped it.

It is useful to draw attention to two further considerations in closing. The first relates to the question of conditional effects, which is crucial to situating the Latin American cases in broader context; the second relates to the role of the state’s capture of rent, which may have implications for debating the merits of various policies in natural resource sectors.

*Conditional resource curse or no resource curse?*

Not all authors accept the reality of even a conditional resource curse. For example, in an important paper, Haber and Menaldo (2009) use country fixed-effects and long historical time series to isolate within-country relationships between resources and the political regime; these authors suggest that there no negative relationship between natural resources and democracy, on average.

The findings of this recent work probably contrasts with previous research for several reasons. First, the most recent research tends to build longer historical time series on natural resources than did previous research, which was focused on the period dominated by the oil boom of the 1970s and the oil decline in the 1980s. Second, and relatedly, recent work focuses on isolating the within-country (over-time) relationship between natural resource revenues and economic growth or democracy—for example, by the inclusion of country fixed effects in a regression framework—rather than relying on cross-sectional variation across countries. This is important, particularly if country-specific factors might be associated both with resource abundance—or, more to the point, resource dependence—as well as democracy. Finally, recent work tends to employ measures of resource abundance per se, rather than economic dependence on natural resource wealth; measures such as mineral rents per capita, unlike measures such as the ratio of resources to GDP or total exports, tend not to exhibit as strongly negative an association with democracy, even in the cross-section (Ross 2009). According to at least
this recent research, then, the relationship between resources and the level of democracy may not be strongly negative, on average, if it is negative at all.

What are we to make of the contrast between a finding of a negative cross-sectional relationship between oil and democracy—on average—and the finding that there appears to be little within-country relationship? Typically, analysts focus on within-country relationships because they believe cross-sectional comparisons are misleading—due to confounding. If time-invariant country-specific factors are associated with oil wealth, then focusing on within-country variation (as in Haber and Menaldo 2009) is indeed a very valuable strategy. At the same time, it is not necessarily clear what omitted confounders would lead to misleading inferences in the cross-section—or why such variables are time-invariant within countries. Future research should thus seek to clarify why there is an apparent contrast between the cross-sectional and within-country findings.

Even if we believe the claim that there is little relationship, on average, between natural resource wealth and democracy, there remain at least two possibilities. One is that natural resource booms typically neither help nor hinder democracy. The other possibility is closer to the theories in Dunning (2008) or Morrison (2009): in some contexts natural resource booms foster economic or political blessings, while in other contexts resources engender a political and economic curse. In other words, while there may be little relationship on average, there may be significant heterogeneity in the causal effects of natural resource endowments in different institutional settings.

Distinguishing these possibilities is an important agenda for future research. For purposes of this background paper, an important point is that a finding of no authoritarian resource curse, on average, does not make the possibility of Latin American exceptionalism less important to understand. Indeed, whatever the average effects, if the effects of natural resources are more positive (less negative) in Latin America than in other regions—as the evidence in Ross (2009) suggests—then continuing to develop theoretical frameworks that can accommodate this diversity is important.

*State Ownership and Taxation of Natural Resources*

Another important if second-order observations may be worth making when considering the relationship between natural resources and democracy in Latin America. As noted above, exploitation of mineral wealth tends to involve capital-intensive enclave economies, in which only a small labor force is employed; when resource revenues are

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17 It should also be borne in mind that in general, inferring the causal effects of natural resources is subject to a host of well-known difficulties. Resource booms are not randomly assigned, even if the resource sector is sometimes subject to price shocks over which individual producers may have little control; finding and exploiting oil is the result of effort, so in this sense countries “self-select” into resource abundance (see Wright and Czelusta 2007). Moreover, even if comparisons of resource-abundant and resource-poor countries allow a causal interpretation of differences, inferring the causal effects of resource dependence is a different matter: dependence stems from many factors, and these factors (some of which are typically unmeasured in empirical work) may be correlated with economic growth or democracy.
distributed to the broader population, it is usually because the state captures rent, either through imposing taxes and royalties on the private sector or by creating parastatals that directly exploit the resource. State ownership and the capture of resource rents have a bad name in policy circles, since the presence of rents may conceivably corrode state institutions or foster corruption (see Karl 1997).

Yet the distribution of rent is also the channel through which the democratic consequences of oil may take effect. The role of the state may thus be important to acknowledge in this regard. For example, in those Latin American cases where resources were controlled by a small private elite (for example, Bolivia before the 1952 Revolution; see Dunning 2008), the democratic effects of mineral wealth have seemed especially weak. And where oil-rich states significantly lose their ability to extract rents, as arguably was the case in Venezuela in the 1990s, the consequences for democracy may also be dire (Dunning, forthcoming).

In other words, while state ownership and exploitation of natural resources is often demonized as inefficient or as a source of political clientelism, there may be tradeoffs involved when the state’s ability to extract natural resource rents is limited. Indeed, if the framework discussed above is correct, the state’s capture of rent is the source of the democratic effect of natural resource wealth in Latin America.

In conclusion, oil and similar natural resources may have negative effects on democracy, though the relationship between these variables has been recently debated. But in Latin America, natural resources do not appear to have hindered democracy. This does not mean that they have not shaped institutional development in other deleterious ways, or perhaps helped to foster corruption. Yet the apparently positive effects of natural resources on the political regime should also be considered, as the role of commodities in the region is debated.
References


Dunning, Thad. Forthcoming. “Endogenous Oil Rents.” *Comparative Political Studies*.


Table 1: Average Value of Oil Rents and Total Resource Rents Per Capita, 1960-2001 (Year 2000 US $)

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<tr>
<td>Trinidad &amp; Tobago</td>
<td>1446.84</td>
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Oil rents per capita are the production value of oil and gas, net of pre-tax production costs and a “normal” return to capital, divided by population; see Hamilton and Clemens (1999) and Dunning (2008) for discussion. The table shows average real values from 1960-2001.
Figure 1: Coups Against Democracy
(taken from Dunning 2008)
Figure 6

Oil and Democracy in Mexico (1960-2001)

Scatterplot and Linear Fit

- Polity score
- Oil rents per capita (one-year lag, year 2000 US$)

- polity2
- Fitted values
Figure 7: Venezuela
(taken from Dunning 2008)

Source: Author’s calculations based on Ministry of Energy and Mines, Petróleo y otros datos estadísticos, various years, and Baptista (2005)