

The Political Economy of Extracting Resource Wealth:

Natural Resource Sector Organization and Ownership

Naazneen Barma

Competition over rents, no matter how those rents are derived, is a central fact of any political economic system. In resource-dependent developing countries, rents can be very large, making the extractive industries sector itself a key locus of political contestation. Once elites have access to a share of the resource rents, they can be expected to pursue their own objectives in deciding how to distribute those rents. Time horizons complicate the picture: governments are keen to maximize short-term rents in order to be able to distribute those rents in the near term, to secure political support, and sometimes to provide private goods to elites. Yet it is also in the government's interest to maximize long-term rents and, by investing in public infrastructure and service delivery, to enhance societal welfare and its own legitimacy. In addition to these political and temporal concerns, governments are calibrating the optimal mix between two often competing goals: (1) efficiency, hence maximal wealth creation, and (2) flexibility, or the ability to maintain discretion in how resource rents are created and distributed. With these basic trade-offs in time-frames and goals in mind, this note examines how different upstream arrangements regarding state ownership of natural resources and different contract or license allocation mechanisms can be more incentive-compatible and sustainable, and offers potential good-fit interventions to enhance collective welfare.

A Stylized Look at Rent-Capture Regimes

Governments richly endowed in natural resources must make decisions in two core “rent arenas” in translating oil, gas, and mining *rents* into economic and social development. Upstream decisions are made regarding organizing the extraction of the resources and taxing the wealth generated by resource rents. Downstream management, subsequently, concerns the state's allocation of those rents across consumption, investment, and financial savings. This note focuses on the first arena: *the upstream decisions in the value chain*.

How does a government generate and capture rents from the extractive industries? This core upstream challenge for resource-rich governments involves three key sets of policy choices that link the value chain dimensions of sector organization and revenue collection:

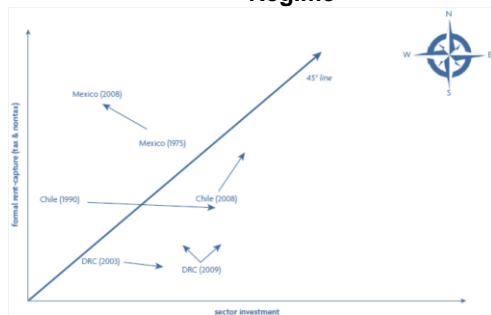
Model of ownership—How does a country structure the ownership of natural resources? Does a national oil or mineral company already exist? Does the state take an equity share in hydrocarbon or mineral production? What are the ownership rights of subnational governments and communities?

Contract models—What contracting model does a country select? How do governments use contractual arrangements to cope with price volatility?

Fiscal regime—What is the optimal combination of taxes and royalties that maximizes the natural resource rent stream a country can generate over time, while ensuring that administrative capacity exists to implement it? How can a fiscal regime mitigate a country’s vulnerability to price volatility?

A country’s rent-capture regime is the cumulative result of such choices, incorporating decisions regarding exploration, extraction, and taxation. Exploration and, especially, extraction involve significant investment outlays under highly risky and uncertain conditions. Negotiated agreements on contract terms and fiscal regimes between resource-endowed countries and investors are also subject to an obsolescing bargain, whereby the relative risks government and investors face shift over the life cycle of the project. Given that oil, gas, and mining projects have life spans from a few years to decades, a key challenge is to make credible bargains that optimally align the time horizons of investors and country counterparts.

Figure 1: Stylized Framework of Rent-Capture Regime



Source: Barma et al. 2012, p. 81, compilation from Chevallier and Kaiser 2010; Diaz-Cayeros 2009; Navia 2009.

Note: DRC = Democratic Republic of Congo.

At any given point, the country’s goal is to ensure a balance of sufficient investment in exploration and extraction (x-axis) to ensure future rent streams while maximizing formal rent taxation in the current period (y-axis).¹ In essence, to optimally secure rent streams from the natural resource sector, a country will want to move outward on the 45 degree line depicted in Figure 1, although, as in sailing, the movement may have to “tack” back and forth using the instruments of contracting and taxation policy and administration, in some cases deviating significantly from the 45 degree line. A country should balance its profile of

investment in both exploration and extraction to handle the time lag between the two phases. There will also be a time lag between securing investment for extraction and resource rents coming on stream. Trying to capture the rent stream too early—for example, through expropriation—will dampen future investment by making a country more likely to move northwest and then south in this framework.

The historical trajectories of upstream management in Chile, Democratic Republic of Congo (DRC), and Mexico illustrate this framework. Chile, over the past two decades, Chile has been successful in attracting more extractive industries investment (moving east), and to some extent increasing formal rent-capture (moving north). This has largely been a result of a bifurcated approach to upstream management. The state-owned operation CODELCO continues to generate most rents, but with low investment in exploration. Private investors, on the other hand, generated most of the expansion in investment and hence in extractive capacity over the period, but at low levels of rent taxation. This “discount” may have been necessary to attract investment, given the uncertain institutional environment during the Pinochet era. Now, however, given institutional development and the apparent strengthening of the rule of law, Chile enjoys a better reputation and can begin trading up to more rents in the future stream of contracts.

Paradoxes of Sector Organization in Resource-Dependent Settings

How a resource-dependent country’s government interacts with would-be resource investors, along with the mechanisms through which it exercises control over the natural resource sector, are crucial in determining the rents and sustainable development benefits that will accrue to its citizens. In a concrete sense, questions of sector organization set the tone for natural resource management. And, in turn, the quintessential paradoxes of natural resource dependence emerge upstream in the sectoral value chain. These problems are common in most public policies, which require—for successful implementation—decision makers with long time horizons, operating in institutionalized arenas for the effective enforcement of political and policy agreements. But these challenges are heightened by the singular features of the mineral sector that erode intertemporal cooperation and lessen political inclusiveness. Three key paradoxes related to sector organization to help frame the content of this note.

- The predictability of policy with regard to the natural resource sector is essential to salutary developmental outcomes, yet it is common for governments to seek to retain discretion in changing the rules of the game. All else being equal, lower predictability undermines confidence and increases the risk investors face, no matter what rules are set out, which in turn means that investors will demand more favorable terms to take on higher risk.
- Contract negotiations in the hydrocarbon and mineral sectors are characterized by asymmetric capacity and information between the parties, but the relative bargaining power between governments and investors shifts over the life cycle of the projects. As a result of these asymmetries, commitment problems are inherent in the upstream part of the value chain; over a project life cycle, government and investors take on different forms of risk and uncertainty at different stages. Institutional design is crucial to resolving this specific challenge of the obsolescing bargain.

Resource rents can potentially allow governments to expand the amount of public goods they provide without imposing additional taxes, there is tension in the private versus public calculus in decision making with regard to resource ownership, which is intensified because of the stakes involved. The tendency for upstream decisions to be made by a small elite often undermines the extent to which these decisions are welfare-enhancing for the country. Natural resource rents are used to underpin delicate political bargains; the more resource-dependent the country, the more likely even very technical decisions are to rise to the top of the power ladder and become highly politicized.

Issues in Sector Organization

Different forms of sector organization serve as mechanisms to resolve the competing priorities of governments and investors and enable them to manage the risks and uncertainties of extractive industries. This note focuses on four key dimensions of sector organization and their implications for sector governance: (1) the legal and regulatory framework, (2) models of ownership in the extractive industries (with an emphasis on national oil or mining companies), (3) the allocation of rights for exploration and production (oil and gas) or extraction (minerals) rights, and (4) the capacity of government

agencies tasked with regulating and monitoring the sector.

Legal and Regulatory Framework

Decisions on sector organization are made in the context of a country's constitution and the legal and regulatory framework in place for the industry in question. The stability of this framework should provide clear signals on the predictable outcomes policy decisions regarding natural resource management. At the same time, however, legal and contractual frameworks for extractive industries must provide enough flexibility to adapt to the price and production shocks that cyclically affect these sectors and are exogenous to low-income, resource-dependent countries.

While ownership of the sector is generally defined at the constitutional level, all other aspects of extractive activities are delineated by petroleum and mining laws or codes. Consequently, establishing an enforceable, transparent, and comprehensive oil, gas, and mining regulatory framework is one of the cornerstones of creating a stable policy environment. The sector legal framework defines the procedures and the actors that allocate licenses and rights and the agencies in charge of monitoring operation. These formal operational "rules of the game" for the sector create incentives to which policymakers, civil servants, and investors respond. Policy reversals or constant changes to laws and regulations undermine the consistency of the rules.

The evolution of the legal framework for the Mongolian minerals sector illustrates "how sensitive mineral sector investors are about tenure security and how easily and quickly positive developments can be reversed if the fundamental pillars in mining policy and granting principles are modified" (Ortega Girones, Pugachevsky, and Walser 2009, 63–64). Similarly, since the mid-2000s Bolivia and Ecuador have repeatedly introduced changes in their hydrocarbon laws, triggering contract renegotiations and the withdrawal of several investors. And inconsistencies in the legal frameworks governing the mineral sector in both Niger and Ghana have created costly disputes over asset ownership and regulatory problems throughout the extractive process.

Customary or indigenous rights to subsoil assets also have an affect over time on formal institutional frameworks.ⁱⁱ This issue is necessarily setting-specific; however, many countries must deal with the

claims of indigenous peoples to “own” mineral or hydrocarbon resources and their consequent demands to take part in project development and mineral extraction negotiations. A parallel issue is the ownership claims by subnational governments and groups. Local communities, whether indigenous or subnational, have increasingly exerted claims to resources and the derivative benefits streams, often at loggerheads with central government authorities and sometimes having a major effect on macro-political discourse and outcomes in resource-rich countries.

Models of Ownership

National oil companies (NOCs) became prevalent in developing countries with petroleum resources in the 1970s, as governments sought to increase their control over the petroleum sector and its rents via direct participation through ownership. NOCs are common to almost all major oil-producing developing countries. Of the 13 cases in the study sample for *Rents to Riches*, 10 have national oil or mining companies. The extent to which they observe principles of good corporate governance or achieve important outcomes in the sector, such as reinvestment, varies a great deal—as illustrated in Table 1.

The World Bank’s Oil, Gas, and Mining Group recently completed a comparative study of about three dozen national oil companies across the world (Tordo, Tracy, and Arfaa 2011), which emphasizes that, unlike private oil companies, NOCs are driven by a number of considerations beyond shareholder return. These motives include rent-capture for the state (including through better domestic exploration and extraction), as well as the achievement of various national developmental priorities, local content enhancement, and capacity-building. If an NOC exists, it often plays a major role in managing both the petroleum sector itself and subsequent development outcomes, that is they are commonly expected to operate both “upstream” in exploration and production and “downstream” in petroleum refining and marketing. More than 100 NOCs worldwide are estimated to control around 80 percent of known world oil reserves and account for about three-quarters of global production. Given their prevalence and the volume of public revenues they sometimes deal with, their governance has important consequences for the government’s ability to manage the petroleum sector for sustainable development purposes.ⁱⁱⁱ

When a country chooses to structure its natural resources sectors using a national company, it can implement certain principles of governance to enhance sector management. The “Norwegian model” of petroleum sector governance can be considered in the institutional design of an NOC.^{iv} Norway has explicitly administered its petroleum sector using three distinct agencies—a national oil company, Statoil, that engages in commercial oil and gas operations; a government ministry that sets policy; and a regulatory body that provides oversight and technical expertise. Benefits from the separation of functions include more focus on commercial competitiveness by the NOC combined with better performance through independent regulation; reduction of potential conflicts of interest and prevention of state capture (and the tendency of NOCs to become a “state within a state”); and the fostering of innovation and checks and balances against poor decisions. For example, Algeria, Brazil, Colombia, Nigeria, and Peru (among others) have attempted to empower an autonomous agency within government with responsibilities for policy and regulation (Stanford University 2010).

The benefits of the separation of functions notwithstanding, it may be that in developing resource-rich countries—particularly those with low levels of human capacity and technical knowledge of the petroleum industry—consolidating the commercial, policy, and regulatory functions in one body may yield better outcomes (e.g., Sonangol in Angola, Petronas in Malaysia, PEMEX in Mexico, and PDVSA in Venezuela). Sonangol—with commercial operator, sector manager, and regulator all rolled into one—has famously facilitated the building of a very productive petroleum sector (Hansen and Soares de Oliveira 2009; Thurber, Hults, and Heller 2010). In part, this has been explained by Angola’s historical lack of political competition and consistent investment in capacity. In the face of civil war, members of the ruling Angolan elite formed a tightly knit and homogeneous leadership, able to assert a unitary vision for the country’s development that was in turn implemented by close allies at Sonangol.

Table 1: National Oil and Mining Company Characteristics in the Study Sample

Country	Oil/mineral revenues as % of total public revenues ^a	NOC/NMC ^b	Government take	Corporate governance	Reinvestment	Commercialization	Quasi-fiscal activities
Angola	83.6	Sonangol	84.5	Medium	High	High	Yes
Bolivia	26	YPFB	—	Low	Low	Low	Yes
Congo, Dem. Rep.	2.4	Gécamines	—	Low	Low	Low	Yes
Chile	22.73	CODELCO	36.6	Medium	Medium	Medium	No
Ecuador	49	Petroecuador	52	Low	Low	Low	Yes
Ghana	13	GNPC	54.4	Low	Low	Low	Yes
Mexico	35.59	PEMEX	31	Medium	Low	Medium	No
Niger	42	SOPAMIN	—	Low	Low	Low	Yes
Nigeria	83.69	NNPC	85	Low	Low	Low	Yes
Trinidad and Tobago	57.77	Petrotrin, NGC	68.2	High	High	High	No

Source: Barma et al. 2012, p. 95, compilation from IMF Article IV Consultations; Tordo, Johnston, and Johnston 2009; Otto and Andrews 2006; case studies.

Note: a. This can be a misleading statistic to gauge a country’s resource-dependence, because it relies on the government’s ability to collect revenues from the sector. DRC, for example, is far more resource-rich and resource-dependent than the 2.4 percent figure suggests; the low number is a direct result of high rent leakage and the government’s excessively weak capacity to assess and collect mineral revenues. b. NOC = national oil company; NMC = national mining company.

Allocation of Exploration and Production/Extraction Rights

Countries allocate exploration and production (petroleum) or extraction (minerals) rights for the extractive industries in a variety of different ways.^v In allocating these rights, governments are calibrating the optimal mix between maximizing efficiency, and hence wealth creation, and flexibility, or the ability to retain discretion in how resource rents are created and distributed. Most countries choose a system that operates somewhere in between two possible extremes: (1) direct negotiation between the state and interested producers through solicited or unsolicited channels, sometimes called “open door” systems; or (2) criteria-based licensing—via open bidding rounds in petroleum or the first-come, first-served principle in mining—where the criteria for award can vary but are made public.^{vi} The former maximizes government discretion and flexibility, while the latter—depending on the design and clarity of parameters—is considered to enhance transparency and efficiency. An auction model for criteria-based licensing has a number of influential proponents. The logic is that auctions force firms, through competition, to reveal the true value of the natural resource for which they are bidding; the increased transparency that results, in turn, can prevent the corruption that often

accompanies noncompetitive allocation of contracts (Collier 2009, 2010).

The countries studied for this project exhibited significant variation across the following contracting and licensing dimensions: the level of transparency in procedures for awarding exploration licenses and production contracts; the level of competition in the allocation of permits; and the procedures used to prequalify bidders or applicants. A lack of transparency in procedures for allocating contracts—including secrecy and revolving door policies—constitutes a major problem for the development of the sector and has consequences for all other links of the value chain and hence the ability of a government to transform resource rents into developmental riches. In DRC, and Lao People’s Democratic Republic (PDR), exploration and extraction rights are commonly allocated without bidding or any competitive procedure, on a first-come, first-served basis. In many countries, award rules give advantages to some companies over others or, worse still, give preferred companies access to confidential information. In Nigeria, for example, companies are sometimes given the “right of first refusal” for oil blocks, which allows them to bid higher than the winning bid.

In some cases, contracts are awarded as the result of bilateral negotiations among heads of state, or as a

result of the direct intervention of other political elites on a bilateral basis. These projects, unsurprisingly, receive special treatment, and feasibility and environmental evaluations are fast-tracked or ignored. In other cases, the reimbursement of investments is guaranteed by the awarding government. In exchange, countries usually receive bilateral aid and/or infrastructure to complement the projects—these have become known as “bundled” resource-for-infrastructure deals and, at least in Africa, Chinese government-backed investors are common partners. One potential upside of such deals between sovereign, or sovereign-backed, entities is that they may help to resolve credibility issues and improve the enforcement of intertemporal cooperation. From a full value chain perspective, the increasing instances of such bundled or Chinese deals, particularly on the African continent, represent an “institutional technology” for resolving the broader inability of governments—in the face of the challenges around intertemporal cooperation and political inclusion—to transform resource rents into infrastructure.^{vii}

Technical Capacity of Sector Agencies

In countries with weak governance and institutional quality, sector ministries and agencies seldom have the capacity to regulate and monitor exploration and production adequately. Political interference throughout the natural resource management value chain is pervasive in resource-rich developing countries. Often, the government agencies in charge of handling the contracting and licensing process are staffed by political appointees, and negotiations for contracts are conducted as much through informal channels as via the designated processes. Even in countries where an independent regulatory agency is clearly demarcated on paper, its functions are often hampered by political interference. Institutional redundancy, or overlapping institutional mandates, and weak coordination across various state officials are common in resource-dependent developing countries and constitute a major obstacle to the effective management and regulation of the natural resource sectors. Sector ministries and agencies often lack independent and adequate budgets, worsening the impact of political involvement. They tend to face severe problems in attracting, training, and retaining specialized personnel. In addition, they are often not provided with sufficient resources to visit exploration or extraction sites and conduct monitoring.

These problems of political interference and weak technical capacity are compounded by a lack of effective oversight from either the legislature or civil society organizations. Even in countries, such as DRC, where there has been successful dissemination of information about the corrupt practices of government officials and mining sector investors, civil society groups continue to face obstacles in having meaningful input into or oversight of contract negotiations. Together, all of these features result in the inability of sector agencies to resist political and external pressures, increase transaction costs for operators, and multiply the opportunities for both administrative corruption and state capture. In short, each of these problems represents leakages of resource rents into inefficiencies or private pockets, away from the possibility of being channeled into developmental riches.

Political Economy Settings and Dynamics

In making decisions around sector organization—such as the structure and content of the legal and regulatory framework, models of ownership, and how licenses are allocated and sector agencies organized and staffed—political elites are responding to an underlying set of political economy dynamics that condition their incentives in distinctive patterns. In keeping with the *Rents to Riches* analytical framework, we present upstream political economy dynamics along the axes of intertemporal cooperation and political inclusiveness (Table 2). This illuminates how the paradoxes characterized at the outset of the chapter—around policy predictability, intertemporal commitment problems (or time inconsistency), and the private versus public calculus—manifest themselves in different resource-dependent settings.

Political economy settings of patrimonial rule are characterized by few restraints on the exercise of power and weak enforcement of intertemporal commitments. Predictability of policy will be extremely low in these countries, with investors experiencing high risk to contractual stability—and consequently demanding better contractual terms to operate in such environments. Because of truncated time horizons and low political inclusiveness, elites face the incentives to enrich themselves as much as possible in the short term. These are, in short, settings of extremely low institutionalization, where risk premiums for operating extractive industries will be very high and reforms to the governance of the extractive industries will be extremely challenging.

Table 2: Political Economy Contexts and Upstream Dynamics

Political inclusiveness	Credibility of intertemporal commitment	
	Less credible/weaker enforcement	More credible/stronger enforcement
Less inclusive/less collectively oriented	<p>Patrimonial rule: Individualized political authority; crony hierarchy; few restraints on power</p> <ul style="list-style-type: none"> • Extremely low predictability; high risk to contractual stability • Extreme time inconsistency—obsolescing bargain acute • High private rent-seeking, more arbitrary 	<p>Hegemonic government: Institutionalized one-party regime; either predatory or benevolent</p> <ul style="list-style-type: none"> • Moderate predictability; lower risk to contractual stability • More time consistency—obsolescing bargain managed • High private rent-seeking, more institutionalized
More inclusive/more collectively oriented	<p>Clientelist pluralism: Political competition based on extensive use of clientelism/patronage</p> <ul style="list-style-type: none"> • Low predictability; some risk to contractual stability • High time inconsistency—obsolescing bargain acute • Less private rent-seeking (some political side payments) 	<p>Programmatic pluralism: Electoral competition based on programs; horizontal and vertical accountability</p> <ul style="list-style-type: none"> • Higher predictability; little risk to contractual stability • More time consistency—obsolescing bargain managed • Little private rent-seeking; emphasis on rent-sharing

Source: Barma et al. 2012, p. 100.

When political elites face incentives that shorten their time horizons, they are less likely to put in place transparent upstream processes and regulatory architecture, as evidenced in the Democratic Republic of Congo and Niger, for example. Political incumbents with shorter time horizons (e.g., those worried about being replaced at the polls) may display strong preferences for signing bonuses and other upfront payments, in lieu of agreements that would increase government take in the future. In other words, decision makers with shorter time horizons highly discount future payments and prefer rewards in the current time period.

In settings of both patrimonial rule and clientelist pluralism (that is, the left side of the table), commitment problems are intense and time inconsistency is acute. The credibility of government’s commitment in turn affects the quality of any deals that can be struck from the government’s perspective. If a commitment is more credible, investors see that the bargains reached have longer time horizons and thus can offer the government better terms. On the other hand, if the government’s commitment has poor credibility, the result will be a lower level equilibrium with relatively less attractive terms. Moreover, this is a dynamic process that shifts over time; with actions in the current time period affecting expectations and outcomes in the next time period and later. A vicious cycle often develops in settings where intertemporal bargains are only weakly enforced, as a government (particularly a new government) may seek to unravel what it views as the

unfair terms of a previous agreement, leading to the further undermining of commitments over time.

The obsolescing bargain problem is worst in settings of patrimonial rule and can be almost as acute in countries characterized by clientelist pluralism. In the latter, commitment problems in general can be intensified by the pressures of nascent political competition, particularly emergent narratives of sovereignty over natural resource wealth.

In contrast, on the right side of the table, there is a much lower degree of time inconsistency in countries with hegemonic government or programmatic pluralism. Investors in Lao PDR, for example, where the government is perceived as relatively nontransparent, have been able to make relatively longer term deals with the state, on the basis of their confidence in the regime’s stability and developmental orientation. In Angola, the national oil company, Sonangol, and the government itself have proven by their track record their ability to make and enforce credible deals with investors, which illustrates the virtuous circle of government credibility that can develop. In such hegemonic governments, however, the benefits of secure contracts and greater investment in the extractive industries are frequently captured by a relatively small elite, often, anecdotally, through conflicts of interest in the contracting system or backroom deals and kickbacks on contracts.

Table 1. “Good-Fit” Upstream Interventions for Resource-Dependent Countries

Political inclusiveness	Credibility of intertemporal commitment	
	Less credible/weaker enforcement	More credible/stronger enforcement
Less inclusive/less collectively oriented	<p>Patrimonial rule: Individualized political authority; crony hierarchy; few restraints on power</p> <ul style="list-style-type: none"> • Simple, non-discretionary legal and regulatory framework • Checks and balances in decision-making about license allocation; minimize discretion • Empower non-executive stakeholders (legislature, civil society) with oversight powers • Ease information asymmetries through geological surveys, model production-sharing contracts, etc. 	<p>Hegemonic government: Institutionalized one-party regime; either predatory or benevolent</p> <ul style="list-style-type: none"> • Sector agency capacity-building (enclaving capacity in key agencies) • Automation of objective steps in license allocation, minimizing discretion • Empower non-executive stakeholders (legislature, civil society) with oversight powers • Emphasize checks on executive power to reign in rent-seeking
More inclusive/more collectively oriented	<p>Clientelist pluralism: Political competition based on extensive use of clientelism/patronage</p> <ul style="list-style-type: none"> • Simple, non-discretionary legal and regulatory framework • Sector agency capacity-building (building incentives and coalitions for administrative reform and investments in capacity) • Checks and balances in decision-making about license allocation • Mitigate risks associated with obsolescing bargain through intertemporal flexibility on contract terms • Ease information asymmetries through contract disclosure 	<p>Programmatic pluralism: Electoral competition based on programs; horizontal and vertical accountability</p> <ul style="list-style-type: none"> • Automation of objective steps in license allocation • Separation of functions across organs of government, relying on horizontal checks and balances • Full contract disclosure to enable monitoring by non-executive organs of government and civil society

Source: Barma et al. 2012, p. 105.

In contrast, in programmatic democracies, investors can rely more on the firm checks and balances offered by vertical and horizontal systems of accountability—including checks on executive power by the legislature, bureaucracy, and executive, and the population’s oversight of government through elections and civil society—to enforce intertemporal commitments that are, in addition, relatively more welfare-enhancing for society at large. These institutionalized mechanisms of enforcement of both time consistency and political inclusiveness with public goods provision also mean that the predictability of policy, hence contractual stability, is much higher in programmatic democracies.

Implications, Options, and Interventions

This analysis provided the means to develop an initial set of good-fit interventions that focus on the three paradoxes of predictability, time consistency, and private versus public calculus, showing how they play out differently in the four settings in the political economy topology. Table 3 provides a snapshot of possible good-fit interventions for each environment.

Achieving consistency and predictability of political and policy decisions with regard to natural resources may be more sustainable and welfare-enhancing in the long run than emphasizing the most welfare-enhancing solution at any given moment. In this respect, a clear, simple, and nondiscretionary legal and regulatory framework is a crucial factor for attracting foreign investment^{viii}—and this is particularly the case in patrimonial rule and clientelist pluralism. In these settings, weak enforcement is a major constraint; hence, the simpler the legal and regulatory framework and, especially, the more clear-cut its assignment of responsibility and accountability to specific sectoral agencies, the more outcomes can be improved.

To relieve some of the pressures of short time horizons—and the instability they engender over time—it may be possible to build some degree of intertemporal flexibility into the terms of deals or contracts. In other words, contracts could contain clauses that permit governments and investors to agree to change the terms of the deal for example, based on, shocks in commodity prices. In a related vein, international parties have attempted to actually intervene to mitigate political risk in some countries, but the results have been mixed. In its Chad—

Cameroon pipeline project, the World Bank attempted to tie the Chadian government to earmark a specific portion of revenues to poverty reduction as part of a package to help the landlocked country develop its oil industry, but, in a sharp example of the obsolescing bargain, the government reneged on the deal once the oil started flowing.

Development partners can play a role as third-party brokers to help ease the information asymmetries in contract negotiation in the extractive industries. Such efforts can enhance time consistency, improve predictability, and reduce the risks that investors face—thereby assisting client countries in securing better resource extraction deals for themselves. Several dimensions of contract negotiations and license allocations are amenable to greater transparency and more information sharing. For example, donors might support geological surveys as an entry point, helping to make more geological information about potential mineral reserves available to all parties (as is done in the World Bank-DfID *Promines* project in DRC). Often, investors have more private information about petroleum and mineral reserves, so governments can benefit a great deal from more information before entering contract negotiations’ for example, Brazil’s investment in greater information on hydrocarbon reserves enabled the country to secure better extraction deals. Easing information asymmetries is important in all types of political economy settings, but could be of particular application in those of patrimonial rule and clientelist pluralism as a mechanism to enhance predictability and reduce time inconsistency, as well as to help diminish the impunity with which political and economic elites are able to pocket natural resource rents.

Development partners can also push governments to disclose the terms of extractive contracts. This is an issue in which international nongovernmental organizations such as Oxfam International, Revenue Watch, and the Extractive Industries Transparency Initiative play an important role. Contract disclosure achieves a number of interrelated goals. First, it enables all government agencies to know and play their respective roles in monitoring and inspection in the natural resource sectors. Second, contract disclosure is a necessary first step in enabling civil society and non-executive organs of government to exercise oversight in the extractive industries as well. Third, it helps to reduce information asymmetries between governments and investors, helping to bolster credibility and predictability over time—and, usually, to improve the deals that governments can make. One mechanism to achieve contract disclosure

is to use model production-sharing contracts such that the bulk of terms are essentially standardized, as Timor-Leste did with encouragement from its development partners.

Sector capacity-building is a more conventional intervention in improving outcomes in upstream natural resource management, one that might achieve better outcomes if more targeted to context rather than instituted as a supply-driven form of technical assistance. In situations of clientelist pluralism, for instance, capacity-building initiatives that emphasize coalition-building and coherence across the public sector could improve predictability in the extractive industries and might possibly mitigate some of the risks associated with time inconsistency, while actually creating an incentive for actors to use this capacity. In contrast, in a hegemonic government, more targeted or enclaved forms of capacity-building, emphasizing development of technical skills, could help to reduce the incidence of rent-seeking through contractual decisions. In weakly institutionalized environments—those of patrimonial rule, as well as some hegemonic governments and some settings of clientelist pluralism—capacity-building should emphasize the most concrete reforms possible. For example, development partners could assist domestic reformers in carving out small niches within an organization’s portfolio of activities in which in which these reformers and their allies could begin to develop greater autonomy. Even in these weak governance environments, development partners may find they have some leverage and support for such targeted capacity-building by emphasizing the salutary effects it would have on the government’s technical reputation and the potential consequent uptick in investment in the natural resource sector.

Further extending this logic, countries with very weak human and institutional capacity might not benefit from establishing a separation of sector functions as in the Norwegian model.^{ix} In designing a good-fit organizational structure for a national oil company, for example, consolidating domestic petroleum sector capacity, as was done with Angola’s Sonangol, may be more fruitful, may help avoid capture of regulatory and policy functions, and may even be a step on the path to achieving a meaningful separation of functions at a later date. Regardless of consolidation, an emphasis must be placed on capacity-building in the domestic extractive industries sector. Unincorporated joint ventures between NOCs and international oil companies (or, more rarely, with the domestic private sector) are common. With the private investor as the operator,

the NOC benefits in terms of technical, commercial, and managerial skills.

In countries where political inclusiveness is low (that is, settings of patrimonial rule or hegemonic government), two types of intervention could help to reduce rent-seeking and the accrual of natural resource rents to private pockets rather than public coffers. Development partners could advocate minimizing discretion in the award of contracts and licenses through as much automation of the objective steps in the contract or license granting process as possible, for example, simply recording whether the necessary supporting fees and materials are received with a minerals license application. In the petroleum sector, the analog would be using criteria-based rather than open door systems for allocating exploration and production rights. In both cases, government priorities can be emphasized by using explicit bidding or qualification parameters, while unnecessary discretion is removed. Adoption, public disclosure, and implementation of detailed regulations that encompass all phases of granting petroleum and mineral rights would support the minimization of discretion. To be sure, these are reform measures often politically difficult to adopt, since entrenched interests will fight to keep the status quo. The challenge, and at least part of the solution, lies in understanding the stakeholder landscape well enough to identify workable coalitions for such reform steps.

Furthermore, separating decision-making authority over the allocation of resource rights would limit rent-seeking and improve transparency and information-sharing. For example, interventions could emphasize clear lines of institutional accountability in licensing decisions in the minerals sector and build in separate checks and balances. This could be accomplished by having an interministerial committee vet allocation decisions and possibly emphasize oversight in settings where an entirely independent license allocation agency is unrealistic. Empowering non-executive stakeholders, such as a legislature or civil society groups, would provide even more extensive checks and balances and further bolster oversight. In the most difficult reform cases of weak political institutionalization and few limits on the power of elite-centered patronage networks, empowering other stakeholders in society through an emphasis on transparency—for example, audit of the NOC, clear bidding parameters for rights allocation—is an essential building block to greater accountability and better governance.

Conclusion

This note has laid out some of the core policy and capacity decisions governments must make in extracting natural resources, particularly as they strike deals with private investors in order to do so. Articulation of the legal and regulatory framework must take into account that the principles of simplicity, clarity, and predictability are at a premium across all contexts. When it comes to questions of how ownership is structured and the process of contract and license allocation, on the other hand, there is no “best practice” model that all countries should follow. Finally, sector capacity-building is an important objective and conventional mechanism of intervention everywhere, but, what was illustrated here is how it could be targeted more carefully to the specific environment.

The quintessential political economy challenges of natural resource management—predictability and stability of policy, enforcement of intertemporal commitments, and the private versus public calculus in deal-making—are apparent at the upstream part of the value chain. By the same token, many of the basic principles of intervention apply in sector organization: minimizing discretion to remove rent-seeking opportunities, easing information asymmetries and enhancing transparency, targeting capacity-building, and activating enforcement through checks and balances.

Finally, it is important to emphasize that the value chain framework is not strictly sequential—in other words, downstream decisions made on public investment management in any given time period will inevitably have an impact on upstream decisions on extraction in the next time period. For example, if a government decides that it needs to secure greater public support by providing cash transfers to the population or by expanding the public investment program to invest heavily in infrastructure, then pressures will build upstream to unlock greater rents by securing better deals on extraction; such a dynamic appears to be building in Timor-Leste with more rent-seeking in contract negotiations. The impact of downstream issues on upstream management notwithstanding, upstream policy decisions and practices do set the tone for the potential of natural resources to aid in development. For natural resource rents to be transformed into developmental riches, they must first be secured through incentive-compatible policy on sector organization.

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About the Author

Naazneen Barma is Assistant Professor at the Naval Postgraduate School.

Notes

This note is the second in a series of four notes on the natural resource paradox based on Naazneen H. Barma, Kai Kaiser, Tuan Minh Le, and Lorena Viñuela, *Rents to Riches? The Political Economy of Natural Resource-Led Development* (Washington DC: World Bank, 2012). This note summarizes key messages from chapter 3 of the volume, which provides additional country-specific examples to support the analysis. The author thanks Craig Andrews, Kai Kaiser, Tuan Le, Michael Stanley, Silvana Tordo, Lorena Viñuela (co-author of the chapter), and other project peer reviewers for their input on the book chapter on which this note is based.

ⁱ For now, we assume that this is a formal rent-stream, accruing to the treasury, rather than a private rent stream to particular members of the elite coalition—although we see instances in which revenues are kept off-budget for the purpose of side payments that hold in place specific political economy bargains or are drawn for illicit purposes (that is, outright corruption). Chile, for example, provides for a formal share of revenues from copper to the military. In many settings, such arrangements are less formal. This private rent stream has the effect of tilting any given trajectory counterclockwise, such that any given level of investment yields a lower level of formal rent-capture, the difference being siphoned off informally.

ⁱⁱ The authors thank Craig Andrews for his emphasis on these issues and articulating many of the insights in this note. Ross (2001) discusses the geographic distribution of resources.

ⁱⁱⁱ National mining companies are less common in both developed and developing countries. Mineral extraction is technically more complex than petroleum production and, with a variety of products and operations depending on the particular site, requires more specific expertise. National mining companies, when they do exist, tend essentially to be vehicles for taking on state equity share, rather than involved in operations in any meaningful way. NOCs, by contrast, are often heavily involved in production.

^{iv} For example, the *Natural Resource Charter* states that "National resource companies should be competitive and commercial operations. They should avoid conducting regulatory functions or other activities" (p. 12).

^v As mentioned above, we focus mostly on extraction rather than exploration.

^{vi} See Tordo, Johnston, and Johnston (2009) on technical issues regarding the allocation of exploration and production rights in the petroleum sector and Ortega Girones et al. (2009) on technical issues regarding mineral rights cadastres. This chapter expands on and adapts these frameworks in order to incorporate broader political economy concerns.

^{vii} The fourth note in this series deals with broader issues around investing resource rents.

^{viii} A number of policy papers produced by the Oil, Gas, and Mining Division of the World Bank outline the criteria for a such a legal and regulatory framework; see, for example, Mayorga Alba (2009).

^{ix} The Norwegian separation of functions model is usually discussed in relation to national oil companies and the petroleum sector, but the logic applies to the extractive industries more broadly.