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**THE POLITICAL ECONOMY OF PETROLEUM WEALTH  
IN LOW-INCOME COUNTRIES:  
SOME POLICY ALTERNATIVES**

**Michael L. Ross**

**Working Paper No. 708**

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## Abstract

Mineral wealth tends to make low-income countries less democratic and more likely to experience a civil war. Many countries also find it hard to use their natural resource revenues to make high-quality, growth-enhancing investments. I argue that these problems are caused, in part, by the unusual qualities of resource revenues – their great size, their non-tax source, their lack of stability, and their secrecy. While there is no universal formula for changing these four qualities, I present a menu of policies that could make natural resource revenues smaller, smoother and more transparent, and hence easier for governments to invest productively.

**JEL Classifications:** Q3, Q4

**Keywords:** Mineral wealth, Natural resource revenues, Economic growth

## ملخص

تميل الثروة المعدنية إلى جعل البلدان المنخفضة الدخل أقل ديمقراطية وأكثر احتمالا للتعرض لحرب أهلية. العديد من البلدان تجد أيضا صعوبة في استخدام عائدات مواردها الطبيعية لخلق استثمارات عالية الجودة والتي تساهم في تعزيز النمو. أزعج في هذه الورقة ان سبب هذه المشاكل، في جزء منه، هو الصفات الغير عادية لإيرادات الموارد : حجمها كبير، مصادرها غير الضريبية، افتقارها إلى الاستقرار، والسرية الخاصة بها. بينما لا توجد صيغة عالمية لتغيير هذه الصفات الأربعة، تقدم هذه الورقة قائمة من السياسات التي يمكن أن تجعل عائدات الموارد الطبيعية أصغر، وأكثر سلاسة وأكثر شفافية، وبالتالي أسهل للحكومات لاستثمارها بصورة منتجة.

## Introduction

The problems created by abundant mineral wealth – referred to commonly as ‘the resource curse’ – are mostly political, not economic. If wise and benevolent technocrats governed low-income countries, their resource wealth would be an unmitigated blessing. Yet many resource-rich low-income countries suffer – with greater frequency than similar countries without resource wealth – from three notable problems: their governments are highly undemocratic; they face unusually frequent civil wars; and their bureaucracies have trouble investing their mineral revenues productively.

I argue these problems can be traced to the revenues that resource wealth produces for governments – particularly their massive *scale*, their non-tax *source*, their lack of *stability*, and their unusual *secrecy*. While this paper focuses on revenues from oil and natural gas – which account for over 90 percent of the world’s minerals trade – most of its arguments can also be applied to non-fuel mineral wealth.<sup>1</sup>

The next section of this paper describes the growing importance of mineral exports in the low-income countries. Section three explains in greater detail some of the qualities that make oil revenues, in particular, unusual and politically problematic. The final section discusses a menu of policies that would help states mitigate these problems.

## The Rising Importance of Mineral Wealth

Mineral wealth plays a critical role in the economies of many developing countries. In 2009, minerals (including petroleum) made up 64 percent of total merchandise exports in Africa, 68 percent in the Middle East, 62.9 percent in the Commonwealth of Independent States, and 38.9 percent in South and Central America. The fraction of merchandise trade comprised of minerals has been relatively steady over the past 70 years [Figure 1].<sup>2</sup>

There is also good reason to believe that petroleum exports, in particular, will continue to be important in the coming decades. If today’s energy policies do not change, in the next 25 years global demand for oil and other liquid fuels will rise by an estimated 28 percent, and the demand for natural gas will rise by about 44 percent. The US is currently the world’s leading petroleum importer, but most of the new demand will come from developing countries, led by China and India.<sup>3</sup>

This rising demand will likely boost the role of low-income countries in the global energy trade. Historically, oil has been found in countries that are already well off. Since the birth of the petroleum age in the mid-19<sup>th</sup> century, middle and upper income countries have been about 70 percent more likely to produce oil than low-income countries – not because they are sitting on top of more petroleum, but because they have more money to invest in locating and extracting it. Today the rich democracies of North America and Europe have attracted about ten times more foreign direct investment in mining, per square kilometer, than the rest of the world [Figure 2].

There are signs that this is changing. Production in the OPEC countries has been more-or-less flat since the 1970s. Thanks to booming oil prices, companies are increasingly willing to invest in low-income countries they previously shunned. Since 2004, Belize, Brazil, Chad, East Timor, Mauritania and Mozambique have all become petroleum exporters. In the next few years, at least 15 new countries – all of them relatively poor, and most of them in Africa

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<sup>1</sup> In Ross [2012] provides a fuller version of the arguments sketched out below, and illustrates many of them statistically.

<sup>2</sup> World Trade Organization (2010).

<sup>3</sup> Energy Information Administration (2010).

– have a good chance of joining the list<sup>4</sup>; by 2015, as many as 20 countries in sub-Saharan Africa could be significant oil producers. In the next few decades, the vast majority of the world’s new hydrocarbon supplies will come from developing countries.<sup>5</sup>

This means that a flood of new revenues is just beginning to hit many of the world’s low-income countries. If there were no resource curse, this would be spectacularly good news – a historically unique opportunity to escape from poverty. Yet the low-income countries that most desperately need money are also the most likely to be struck by the resource curse. Unless these revenues are better managed, these windfalls could hurt, not help, people who live on the petroleum frontier.

### **What makes petroleum revenues different?**

Just as people are affected by the kinds of food they eat, governments are affected by the kinds of revenues they collect. Since most governments receive the same kinds of revenues year after year, it is easy to overlook their significance. Only when there is a sharp change in these revenues – such as when oil is discovered – does their underlying importance become clear.

The revenues that governments collect from their petroleum sectors are different from other kinds of revenues in four important ways. The first is their *scale*, which can be massive: on average, the governments of oil-producing countries are almost fifty percent larger (as a fraction of their country’s economy) than the governments of non-oil countries.<sup>6</sup> In low-income countries the discovery of oil can set off an explosion in government finances: from 2001 to 2009, government expenditures rose by 600 percent in Azerbaijan and 800 percent in Equatorial Guinea.

Most governments worry about having too little revenue, not too much. But revenue booms can be surprisingly difficult for governments to invest productively. One reason is what might be called “bureaucratic overstretch,” which occurs when a government’s revenues expand more quickly than its capacity to efficiently manage them. The result can be a drop in the effectiveness of government investments – something that Gelb (1988) documented after the commodity booms of the 1970s.

The size of these revenues alone is not necessarily a problem: many peaceful, democratic European countries have bigger governments than many conflict-ridden, autocratic resource exporters. The *source* of these revenues also matters: mineral-funded governments are not financed by taxes on their citizens, but by the sale of state-owned assets – that is, their country’s subsoil wealth. This helps explain why so many oil-producing countries are undemocratic: when governments are funded through taxes, they become more constrained by their citizens; when funded by oil, they become less susceptible to public pressure.<sup>7</sup> It is also an important reason that mineral wealth can trigger civil wars, by creating a strong incentive for resource-rich regions of low-income countries to establish sovereign governments.<sup>8</sup> Table 1 lists 16 separatist conflicts that broke out in petroleum-rich territories between 1960 and 2006.

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<sup>4</sup> Countries that have the potential to become new oil or gas exporters in coming years include Ghana, Guinea, Guinea-Bissau, Guyana, Kenya, Liberia, Mali, Sao Tome and Principe, Senegal, Sierra Leone, Tanzania, Togo and Uganda. Indonesia and Tunisia – former exporters that had become importers – may also once again become petroleum exporters.

<sup>5</sup> Energy Information Administration (2010).

<sup>6</sup> Here and elsewhere, I define ‘oil-producing’ countries as those that generate at least \$100 per capita in income from oil and gas, using constant 2000 dollars. In 2009, there were 56 oil-producing countries that met this definition.

<sup>7</sup> On the anti-democratic effects of petroleum wealth, see Ross (2001); Jensen and Wantchekon (2004); Aslaksen (2010); Tsui (2010).

<sup>8</sup> On the effects of natural resource wealth on civil war, see Collier and Hoeffler (2004); Fearon and Laitin (2003); Lujala (2009); Ross (2004, 2006).

Other problems can be traced to the *stability* – or rather, the *instability* – of mineral revenues. The volatility of world commodity prices, and the rise and fall of a country's mineral reserves, can produce large fluctuations in the finances of resource-dependent countries. This financial instability saddles governments with revenue-smoothing tasks they have difficulty achieving, and helps explain why they often find it hard to productively invest their resource wealth. Revenue instability also aggravates regional conflicts, making it harder for governments and rebels to settle their differences.

Volatility can hurt economic growth by creating uncertainty about the future, which in turn discourages private sector investment. Volatility is more harmful for low-income states than high-income ones, partly because their financial markets are less sophisticated, and hence less able to help investors protect themselves against risks.<sup>9</sup> One recent study found that natural resource exports typically have a positive direct effect on growth, but a larger, indirect, negative effect due to the economic volatility they create.<sup>10</sup>

Volatility could also make it harder for governments to productively invest their resource revenues, by shortening the government's planning horizon, which would subvert major investment projects. Government officials who anticipate this problem may cope by avoiding long-term programs altogether, and spending their funds quickly before they disappear.

Finally, the *secrecy* of mining revenues compounds these problems. Governments often collude with international resource companies to conceal their transactions, and use their own state-owned companies to hide both revenues and expenditures. Secrecy is a key reason why resource revenues are so commonly lost to corruption; why resource-fueled autocrats can remain in power, by concealing evidence of their greed and incompetence; and why insurgents are often reluctant to lay down their arms, because they distrust offers by the government to share their country's mineral revenues more equitably.<sup>11</sup>

Mineral wealth has other troublesome qualities: the extraction process might create few direct benefits, but many social and environmental problems, for the surrounding communities; oil and gas facilities have large sunk costs, which makes them vulnerable to extortion; and when produced in large quantities, natural resource wealth can affect a country's exchange rates and reduce the size of the manufacturing and agricultural sectors, which in turn can shut off economic opportunities for women.

But the most important political fact about mineral wealth – and the reason it leads to so much trouble in so many developing countries – is that the revenues it bestows on governments are unusually large, do not come from taxes, fluctuate unpredictably, and can be easily hidden.

### **Policy Options**

Oil revenues can lead to rapid economic growth, but they can also cause profound political and economic problems. Fortunately, much can be done to change these properties – limiting the size of these revenues, making them more stable and transparent, and even altering their source.

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<sup>9</sup> Loayza et al. (2007).

<sup>10</sup> van der Ploeg and Poelhekke (2009).

<sup>11</sup> The problem of oil revenue secrecy – and the corruption it facilitates – is not limited to low-income countries. In the mid-1990s, a series of audits revealed that France's national oil company, Elf-Aquitaine, had been an important source of campaign finance for political parties, especially the Gaullist Rally for the Republic. Heilbrunn (2005, 277) explains, Prosecutors uncovered evidence that a few managers at Elf had embezzled approximately 400 million Euros that they used to finance campaigns, bribe foreign politicians, and enrich themselves. In 2003 trials began for thirty-seven people implicated in the scandal. The scandal embroiled several former ministers and the French constitutional council's president, as well as former German president Helmut Kohl, Gabonese president Omar Bongo, and Congolese president Denis Sassou-Nguesso.

To reform their revenues, different countries need different kinds of policies: measures that are effective in some settings will be useless in others. Rather than suggest a “one-size-fits-all” solution, this section instead offers a menu of ways for countries to change the size, stability, secrecy, and even the source of their oil revenues.<sup>12</sup>

### **Reducing the size of revenues**

Large oil revenues help autocrats stay in power, encourage rebellions, and tend to be squandered by overstretched bureaucracies. The first question for reformers should be whether to decrease the size of these revenues. There are at least four ways to do this. The first two are more appropriate for low-income countries with weak bureaucracies; the latter two are more likely to work in middle and upper income countries with more sophisticated bureaucracies.

For low-income countries, the first option is to leave the oil in the ground. Countries can also extract their petroleum more slowly, so that revenues do not grow more quickly than the government’s capacity to spend them effectively – or more quickly than civil society’s ability to monitor the activities of their rapidly growing government.

Since mineral wealth is a non-renewable asset, extracting it produces a one-time cash windfall, and if wisely invested it can raise the living standards of future generations, but if squandered it is lost forever. Leaving oil in the ground is like saving it in a bank; it will even earn “interest,” since its value will rise over time as the rest of the world’s petroleum supplies are depleted.

Deferring the revenues produced by oil extraction admittedly carries a high opportunity cost, especially in low-income countries, where people urgently need food, health services, and education. Paul Collier points out that in the world’s poorest countries – which are home to the world’s “bottom billion” citizens – the extraction of natural resources can provide a unique opportunity for rapid economic growth; the failure of these states to harness their natural assets is “the single most important missed opportunity in economic development.”<sup>13</sup>

This highlights the irony of oil wealth: the greater a country’s need for additional income – because it is poor and has a weak economy – the more likely its oil wealth will be misused or squandered. For low-income countries, the risks created by oil extraction are great, but so are the costs of leaving it in the ground. Limiting the pace of extraction will help limit the danger of an oil curse, but it is a decision that cannot be taken lightly.

The second approach is to use “barter contracts”: instead of selling their oil for cash, low-income countries can trade it directly for the public goods they would ultimately like to acquire. This may sound unorthodox, but several countries – including Angola, Nigeria, Zambia and Zimbabwe – have already sold petroleum and other mineral rights to Chinese-owned consortia using barter-type deals; instead of receiving royalties and taxes, these governments received promises of future infrastructure and services.

It has long been common practice for petroleum companies to support their operations in host countries by building ancillary facilities like housing for workers, roads, railways, and even ports. Barter contracts go further, stipulating that companies will pay host governments with *unrelated* projects and services instead of cash. In 2006, Nigeria signed contracts giving Chinese companies exploration licenses to four offshore blocs in exchange for \$4 billion in investment, including promises to build a new hydropower plant, rehabilitate a decrepit

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<sup>12</sup> Beyond minimizing the negative political consequences of natural resources, countries should also try to maximize their positive economic consequences. Several recent books address this issue, and can be read alongside the discussion below to provide a more complete roadmap of the challenges and opportunities that confront the oil states. See Collier (2010), Humphreys, Sachs, and Stiglitz (2007).

<sup>13</sup> Collier (2010), 37.



railroad, and develop programs to combat malaria and avian flu. Angola has traded oil contracts for new roads, railroads, bridges, schools, hospitals, and a fiber-optic network.<sup>14</sup> Although Chinese companies working in Africa have pioneered barter contracts, companies from India, Malaysia, and South Korea have made similar deals.<sup>15</sup>

Economists are rightly skeptical about contracts like these that entail a process called ‘bundling,’ in which one transaction (the purchase of exploration or extraction rights) is tied to a second transaction (the construction of roads and bridges). Sometimes companies use bundling to gain an advantage over competitors: in 1998, for example, the US Department of Justice sued Microsoft for forcing purchasers of its Windows operating system to simultaneously purchase some of its less-desirable programs, which were bundled into the same software.

But bundling can sometimes be beneficial if the costs of carrying out the transactions separately are prohibitive. Barter contracts might help low-capacity governments bypass the process of collecting the revenues (when much is lost to corruption), shuffling it among government agencies (where more can be lost), and re-allocating the revenues to government projects (where even more is lost to corruption, patronage, and inefficiencies). They may also relieve governments of the need to smooth out revenue fluctuations, since revenue-smoothing becomes the responsibility of the company; they can help draw foreign infrastructure companies into low-income countries, which the companies might otherwise shun out of fear they would not get paid; and they can help governments make hard-to-reverse commitments to long-term projects that might not otherwise be completed.

Barter contracts are new phenomena in the petroleum world and so far their record is unimpressive. According to one report on Nigeria’s experience, it is clear that 2-3 years down the line, there is still nothing on the ground to show for the generous treatment given to the Asian National Oil Companies (in exchange for barter contracts). At the very least, all projects are on hold. There is a strong possibility that the deals in their entirety will be cancelled...the Yar’Adua government has concluded that the whole arrangement was compromised from the start by the absence of transparency and due process compounded by corruption.<sup>16</sup>

Still, it might be possible to find better ways to organize barter contracts: for example, they can be awarded through competitive bidding, in which companies must offer comparable projects so that the best offer is easier to identify; and compliance with the contracts could be more carefully monitored by reliable third-party agents, with strict anti-corruption measures, full transparency, and close attention to the quality of the projects. Barter contracts are still experiments and we do not know how well they can work.

The third strategy is to distribute the oil revenues directly to citizens. Both the US state of Alaska and the Canadian province of Alberta use direct distribution. Of these two programs, the older one – the Alaska Permanent Fund – has been in place since 1977 and is widely considered a success. The fund receives about one-fifth of the state’s oil revenues, along with other discretionary transfers from the state budget, and annually distributes a share of the accrued interest to all Alaskan citizens. In 2009, the dividend was worth about \$1,300. It has grown so popular that politicians “virtually fall over one another to demonstrate to the public their efforts to defend the program.”<sup>17</sup>

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<sup>14</sup> Vines, Weimer, and Campos (2009).

<sup>15</sup> Chan-Fishel and Lawson (2007).

<sup>16</sup> Wong (2009), 5.

<sup>17</sup> Goldsmith (2001), 5.

Some scholars argue that direct distribution funds could help developing countries avoid at least some facets of the oil curse: a fund would keep at least part of the government's petroleum revenues away from politicians, who might otherwise steal them or use them for political advantage; it could help hedge against price volatility, if citizens can do a better job than governments of planning ahead; and it might give citizens a powerful incentive to monitor their government's use of resource revenues, creating pressures against corruption and in favor of wise stewardship. True, it would initially reduce the funding available for potentially worthy government programs; but governments could always tax back a portion of the distributed funds, which in turn might induce citizens to demand more government accountability.<sup>18</sup>

Direct distribution might work in Alaska, but would it work in countries with lower incomes and more easily corrupted state institutions? Governments in low-income countries may lack the capacity to identify, and transfer cash to, eligible citizens in a fraud-resistant manner. If the country's financial system is not well developed, citizens could have trouble saving their dividends for future use. It is unclear how a fund would affect regional grievances, since those who live closer to the oil's source might demand a larger dividend; yet giving larger sums to people in one region could also lead to excessive migration among dividend-seekers.<sup>19</sup>

We should also be skeptical about policies that hinge on the creation of specialized funds, including direct distribution funds: often their appeal depends on the belief that they will do a better job than the rest of the government in shielding resource revenues from misuse. But why should a direct distribution fund be managed better and be less corrupt than the rest of the government? What if the fund is just as ineffective or fraudulent as the government that creates it? As Chapter 6 points out, specialized resource funds work better in theory than in practice.

The fourth way to shrink a government's oil revenues is to directly transfer a portion of the money to regional or local governments. Most of the oil-rich countries in the Middle East are unitary states and have fully centralized revenue systems.<sup>20</sup> Outside the Middle East, however, a growing number of oil and mineral exporters are dividing resource revenues between central and subnational governments, regardless of whether they are unitary states (Colombia, Ecuador, Kazakhstan) or federal states (Mexico, Nigeria, Russia, Venezuela, and Indonesia).<sup>21</sup>

Subnational governments should be entitled to funds that compensate them for the social, environmental, and infrastructure costs they bear when hosting oil and gas projects.<sup>22</sup> Revenue decentralization, however, goes beyond mitigating *costs*: it entails sharing the financial *benefits* of resource extraction with subnational governments.

There are two broad ways to do this: countries can allow subnational governments to levy taxes directly on the petroleum industry; or they can distribute a fraction of the central government's revenues to subnational governments according to some formula, either before or after smoothing out year-to-year revenue fluctuations.

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<sup>18</sup> See Birdsall and Subramanian (2004), Sala-i-Martin and Subramanian (2003), Moss and Young (2009). For skeptical views, see Hjort (2006) and Morrison (2007).

<sup>19</sup> Migration is not a problem in Alaska, partly because the annual dividends are relatively small – they constitute about six percent of the average household's total income – and partly because potential immigrants are deterred by Alaska's harsh winters and geographical remoteness. Direct distribution might not work so well in California.

<sup>20</sup> The United Arab Emirates is a notable exception.

<sup>21</sup> Ahmad and Mottu (2003).

<sup>22</sup> Local and indigenous peoples who live in the extractive region deserve special attention; their concerns should be addressed before any new project begins.

Revenue decentralization can be an effective way to reduce the size of the national government's discretionary windfall, and even may reduce the danger that people in the extractive region will seek independence. Yet there is no *a priori* reason to expect local governments to make better use of these funds than central governments; local governments can be just as corrupt, opaque, and incompetent as their national counterparts. They often have less capable bureaucracies, are less able to manage revenue volatility, and have worse fiscal discipline.<sup>23</sup> Oil revenues can have the same anti-democratic effects in local governments that it has in national ones: fiscal decentralization has been linked to reduced accountability in both Argentina and Brazil, and to less economic reform and less investment in Russia.<sup>24</sup>

The decentralization of oil revenues is likely to work better in countries with subnational governments that are relatively democratic, transparent, and effective at managing their budgets. The success or failure of decentralization will also depend on how it is done: policymakers can devise revenue systems that tamp down fluctuations in the volatility of subnational revenues; insist that local governments use any oil revenues to complement, not substitute for, their existing tax base; make sure that new revenues are paired with expenditure responsibilities linked to the provision of public goods; and stipulate that all shared revenue must be fully transparent and regularly audited.<sup>25</sup>

### **Changing the source of revenues**

If key elements of the oil curse can be traced back to the nationalizations of the 1960s and 1970s, perhaps they could be reversed by privatization. Privatization would change the source of the government's oil revenues, replacing non-tax revenues from national oil companies with tax revenues from private sector – and usually international – oil companies. Would this make a difference?

Although many other kinds of state-owned enterprises were privatized in the 1980s and 1990s, full privatization has been relatively uncommon in the petroleum world: only the governments of the UK (1985), Romania (1992), Poland (1999), and Argentina (1999) have fully divested themselves of any ownership in what were previously national oil companies – and Argentina later re-nationalized some of its petroleum assets. Privatization advocates point to a mountain of evidence that state-owned enterprises are economically inefficient.<sup>26</sup> Skeptics suggest national oil companies are different than other kinds of state-owned enterprises in ways that can make privatization difficult. They also argue that the size and financial sophistication of international oil companies makes them exceptionally tough for governments – especially in low-income countries – to tax and regulate.<sup>27</sup>

When it comes to regulating large oil companies, even the US government has a dismal record: in 2010 it dismantled its Minerals Management Service, after a series of sex and drug scandals, and the catastrophic blowout of BP's Deepwater Horizon drilling rig in the Gulf of Mexico, revealed how poorly it was enforcing basic safety and environmental regulations. Privatization might only replace large, secretive, and unaccountable governments with large, secretive, and unaccountable private companies.

Privatization might have modestly pro-democratic effects, but it is important to first clarify what it would *not* achieve. It would not bring back the pre-1970 era of smaller and steadier

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<sup>23</sup> See Ahmad and Mottu (2003), and Brosio (2003).

<sup>24</sup> On Argentina, see Gervasoni (2010); on Brazil, see Brollo, Nannicini, Perotti and Tabellini (2010); and on Russia, see Desai, Freinkman, and Goldberg (2005).

<sup>25</sup> For more specific recommendations, see Brosio (2003); Ahmad and Mottu (2003); Ross (2007).

<sup>26</sup> For example, Dewenter and Malatesta (2001), and Eller, Hartley and Medlock (2010).

<sup>27</sup> Stiglitz (2007).

oil revenues. Oil revenues were relatively small before the 1970s because world prices were low by historic standards, as the discovery of new reserves outpaced the world's still-modest demands; and because international oil companies were able to keep a large fraction of the profits for themselves. Both conditions have changed, and privatization would not reverse them. If privatization led to a more efficient and hence profitable industry, it could even increase a government's petroleum revenues.

Nor would privatization make oil prices more stable. Oil prices were unusually steady from the end of World War II to the early 1970s, thanks to both the price-setting oligopoly of the Seven Sisters, and the Bretton Woods system of fixed exchange rates. Both fell apart in the 1960s and early 1970s and privatization would not revive them.

Finally, privatization might not even cause oil-rich countries to adopt democracy-enhancing forms of taxation. In many low-income oil producers, privatization would only produce a modest shift towards taxes: most of these countries have national oil companies that work closely with international oil companies through joint ventures or production-sharing contracts, and already collect much of their oil revenue from these companies in taxes, royalties, and other kinds of fees.

Some middle-income countries, like Libya, Mexico, and Saudi Arabia, have national oil companies that manage their own facilities and rely far less on international companies; for them, privatization would lead to a much larger shift towards tax-based revenues. Yet remember that in Chapter 3, taxes are only a democratizing force when they increase public recognition of the government's revenues. Privatization in the oil sector might simply replace non-tax revenues with levies on a handful of large, often multinational, corporations – and hence provide citizens with little direct information about the size of the government's revenues.

Still, in some cases full or partial privatization could boost democracy by making it harder for governments to hide their oil revenues. Many governments use their national oil companies to conceal their use (and misuse) of petroleum money. Full or partial privatization can help curtail this *if* the resulting companies are more transparent – for example, if they are publicly listed on stock exchanges that force them to disclose their balance sheets. Even if the government remains the majority shareholder in partially privatized oil companies – like in Brazil, Colombia, Malaysia and Norway – public listings can be a step towards greater revenue transparency.

Some governments will find other ways to hide their oil revenues, but this hardly nullifies the benefits of public listings.

### **Making revenues less volatile**

The instability of petroleum revenues hurts private sector investment, the government's fiscal policies, and ultimately economic growth in the oil states. Many governments try to fix these problems by setting up stabilization funds, but these funds have a dismal track record: governments so frequently violate their own rules about moving money in and out of these funds that their benefits seem to be negligible. Are there better ways for governments to stabilize their oil revenues?

Some of the policies already mentioned would affect revenue stability. Extracting oil at a slower pace would limit a government's reliance on oil revenues, which in turn would reduce the impact of fluctuating oil prices on the government's overall budget. Barter contracts, if properly designed, could shift the risk of price fluctuations from governments to companies, which are typically better at managing volatility. Direct distribution could also help by making households responsible for some of the income smoothing. The consequences of

decentralization and privatization are less clear; much would depend on how they were structured.

Any stabilization plan needs three elements: a way to reduce government spending when prices are high; a way to increase spending when prices are low; and a mechanism to link the two, so that the money removed from the budget during booms is matched by the money added to the budget during busts.

Stabilization funds combine all three elements in a way that is economically intelligent but politically inept. Their initial funding depends on politically altruistic – even suicidal – behavior by politicians who must cut spending during booms, when the economy is strong and citizens believe they should not make sacrifices. Even if it receives money during a boom, the fund will only survive if every subsequent ruler exercises the same selfless restraint, leaving the surplus in place until it is needed during a bust. The fund might be managed by a nominally independent government agency that by law adheres to strict guidelines about deposits and withdrawals; but highly motivated politicians typically find ways to siphon off the surplus, either by changing the rules, replacing the people who oversee the fund, or simply borrowing money against the savings.<sup>28</sup> Even farsighted rulers can rarely bind their successors to a course of fiscal restraint.

Under some conditions, stabilization funds are more likely to work: when the government is run by a wise, politically-insulated autocrat – or alternatively, by a democratically-elected leader whose policies are subject to more checks and balances; when corruption is low; when the public is well-informed, and has confidence in the government's policies; and in democracies, when voters are relatively unaffected by campaign spending. None of these conditions are easy to achieve.<sup>29</sup>

Alternatively, we can try to design stabilization mechanisms that are more compatible with the myopic incentives that typically drive politicians. Political leaders benefit when they can increase spending and are hurt when they must decrease it. Stabilization funds fail because the politically painful part of stabilization (diminished spending) is both voluntary and a necessary precondition for the politically beneficial part (increased spending). A better design would place the beneficial part first and make the painful part mandatory, or at least, more costly to avoid. Since increased spending would precede increased savings, the two pieces could not be connected by a stabilization fund – since funds can run surpluses but not deficits – but by a loan.

Here is one way it might work: when oil prices were low, oil-producing governments could borrow money from foreign banks, governments, or international financial institutions, to stabilize their budgets and stimulate their economies. In the past, oil states have used loans procyclically – borrowing when prices were high instead of low – which makes their economies more volatile, not less. To encourage countercyclical borrowing, the World Bank or other international financial institutions could have a special credit facility for resource-dependent countries, which would only make loans when prices fell below some benchmark.

The key feature of these loans would be the way they were repaid, which would depend on the current price of oil. Governments would set aside the proceeds from a fixed number of barrels of oil each month to repay their creditor until the value of the loan was fully paid off. The value of the loan would not fluctuate, only the rate at which it was paid back: if prices stayed low, the loan would be repaid slowly and cost the government relatively little in revenue foregone; if prices rose, so would the value of the repayment barrels sold each

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<sup>28</sup> Eifert et al. (2003).

<sup>29</sup> William Ascher's remarkable *Bringing in the Future* (2009) offers an inventory of more detailed strategies to foster long-range policymaking in politically challenging environments.

month, and hence, the rate at which the loan was repaid. An oil-denominated loan, offered by a special facility only when prices were low, could both increase spending when revenues were scarce and reduce it when revenues were abundant.

Unlike a stabilization fund, which can be robbed at any time by the government that established it, foreign loans are owned by foreign banks and governments, which make defaulting on them costly. In fact, Angola has been using oil-denominated loans for decades with little fanfare.<sup>30</sup> Although it pays a modest premium for these loans – since the lender is assuming the cost of managing oil price volatility – it has found both commercial banks and foreign governments willing to make them.<sup>31</sup>

In a country ruled by benevolent accountants, the problem of stabilization would be easy to solve. In the real world, stabilization plans are commonly rendered ineffective by the self-interested behavior of political leaders. Better institutional design could help make stabilization policies more sustainable politically, and ultimately more effective.

### **Lifting the secrecy of revenues**

Most of the oil world is hidden from public view. In many countries, little is known about the contracts that oil companies sign; the signing bonuses, taxes, royalties, fees, and other payments they make to governments; the operations of national oil companies; the flow of oil revenues within governments; and how these revenues are ultimately spent. This secrecy helps autocrats stay in power, impedes the resolution of oil-based civil wars, and makes it harder to stop corruption. Transparency alone cannot fix all of these problems, but it should help.

Recent studies suggest that when governments are more transparent, they are also likely to have less corruption, higher levels of human development, stronger fiscal discipline, and many other desirable qualities.<sup>32</sup> It is hard to know if transparency is causing these outcomes, but most observers believe that on balance, transparency promotes better governance.<sup>33</sup>

Even if the benefits of transparency are hard to measure, it has one great advantage. Most of the other policies discussed above – from barter contracts through the use of oil-denominated loans – have the potential to do well, but also carry some risk of backfiring. Transparency is cheap to implement and unlikely to do harm.

Transparency begins with the disclosure of information, but does not end there: the information released by governments must be complete and accurate, which means it should be subjected to independent audits that themselves are made public; it must be made widely available at little or no cost; and it should be presented in a format that ordinary people can understand.

A free press and well-informed civil society groups are essential to turn publicly disclosed information into a meaningful tool for better resource governance. Even these groups may have trouble evaluating government documents and policies: industry insiders but not the wider public know many technical dimensions of resource management. This makes public education an essential component of transparency.

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<sup>30</sup> Vines et al. (2009).

<sup>31</sup> Governments can use other devices to hedge against volatility: in 2008, the Mexican government paid \$1.5 billion to insure itself against falling oil prices; when prices fell in 2009, the treasury earned a \$5 billion windfall. Still, buying insurance against falling prices also entails new expenditures during a boom, which can be politically difficult. Also see Frankel's (2010) discussion of debt obligations linked to commodity prices.

<sup>32</sup> Bellver and Kaufmann (2005); Hameed (2005).

<sup>33</sup> Fung, Graham, and Weil (2007). For a skeptical view – which sensibly argues that transparency needs to be complemented by other measures – see Kolstad and Wiig (2009).

In 2009, an international group of policy experts launched a “Natural Resources Charter,” which offers guidelines for citizens and governments that want to maximize the beneficial use of their country’s natural resources. It is not a binding document, but a standard to which all countries – rich and poor – can aspire. The Charter includes twelve core Precepts that offer guidelines on a wide range of issues – including whether or not to extract resources, how to negotiate contracts, how to mitigate social and environmental costs, and how revenues should be used. By distilling and publicizing the best available knowledge, the Charter is designed to both inform policymakers and help citizens determine their governments are abiding by internationally-recognized principles – and if not, what should be changed.<sup>34</sup>

There has been a lot of progress on oil sector transparency since 2000, thanks to the remarkable work of non-governmental organizations in scores of resource-rich countries. The key groups include Global Witness, a London-based NGO that since the 1990s has called attention to the role of natural resources in conflict and corruption around the world; a global network of NGOs that sponsors a campaign called Publish What You Pay, which encourages companies in the extractive sector to reveal what they pay to governments, and governments to disclose what they receive from these companies; and the Revenue Watch Institute, a non-profit policy, research, and grant making institute begun in 2002 that promotes the use of oil, gas, and mineral resources for the public good. In 2002, British Prime Minister Tony Blair launched the Extractive Industries Transparency Initiative (EITI) to encourage resource-rich countries to make their revenues fully transparent. In 2007 it became an independent, Oslo-based multi-stakeholder organization; by 2010, it had 30 member countries.<sup>35</sup>

Despite these initiatives, much of the petroleum world is still shrouded in secrecy. Of the 30 countries that were members of EITI in 2010, only three (Azerbaijan, Timor-Leste, and Liberia) were certified as ‘fully compliant’ with the organization’s transparency standards. Six others –including Angola, Bolivia, Chad, Equatorial Guinea, Sao Tome, and Trinidad – had dropped out of the organization or were suspended for non-compliance. A 2010 Revenue Watch study of 41 oil, gas, and mineral producing countries – some EITI members, some not – found that three-quarters of them provided only “partial” or “scant” information about their resource revenues.<sup>36</sup>

Transparency in government spending can also help. Most resource-related transparency initiatives focus on how revenues are collected, not how they are spent. Unfortunately, some countries, like Azerbaijan, have become models of revenue transparency while keeping their expenditures opaque. A 2010 study found that 74 of 94 governments surveyed had national budgets that failed to meet basic standards of transparency and accountability. Oil and gas producing countries were among the most opaque: Algeria, Cameroon, Chad, Equatorial Guinea, Iraq and Saudi Arabia published virtually no information about their budgets.<sup>37</sup>

Expenditure transparency may be even more important than revenue transparency: the more citizens know about how their money is allocated, the less likely the funds will be lost to corruption. Thankfully, a growing number of NGOs in the developing world have taken up the cause of budget and spending transparency. According to the International Budget Partnership,

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<sup>34</sup> For more on the Charter, see [www.naturalresourcecharter.org](http://www.naturalresourcecharter.org).

<sup>35</sup> For more on these groups, see [www.globalwitness.org](http://www.globalwitness.org), [www.publishwhatyoupay.org](http://www.publishwhatyoupay.org), [www.revenuwatch.org](http://www.revenuwatch.org), and [www.eiti.org](http://www.eiti.org).

<sup>36</sup> Revenue Watch Institute (2010).

<sup>37</sup> International Budget Partnership (2010). See their report at [www.internationalbudget.org](http://www.internationalbudget.org).

In India, Mazdoor Kisan Shakarti Sangathan, an organization of small farmers and workers, pieced together budget information to uncover corruption, such as falsified payrolls and payments for work never done;

At the urging of the Uganda Debt Network, which monitors local spending, Ugandan officials identified substandard work in school construction and evidence of corruption by local officials;

In the Philippines, an NGO called Government Watch has used budget information to monitor the delivery of school textbooks, the construction of new schools and other infrastructure, and of the distribution of disaster relief funds. Working with other groups, their efforts have dramatically reduced the cost and improved the quality of textbooks, and cut the number of “no-show” contractors who failed to deliver contracted books.<sup>38</sup>

Despite much progress, the transparency movement has a lot of work ahead. Transparency cannot magically solve the problems of resource-rich countries, but it is probably the safest and simplest way to bring about improvements.

### **Conclusion**

Many low-income countries are highly dependent on mineral revenues and will probably remain so for many years. To improve their politics and their economies, they must find better ways to manage these resources, and the revenues they generate.

Geology is not destiny: mineral wealth can have perverse effects because the revenues it generates for governments are abnormally large, do not come from taxing citizens, fluctuate unpredictably, and are easy to conceal from public scrutiny. Most of these qualities can be changed – which would enable citizens in resource-rich countries to enjoy the full benefits of their countries’ natural wealth.

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<sup>38</sup> International Budget Partnership (2010). Also see Reinikka and Svensson (2004).



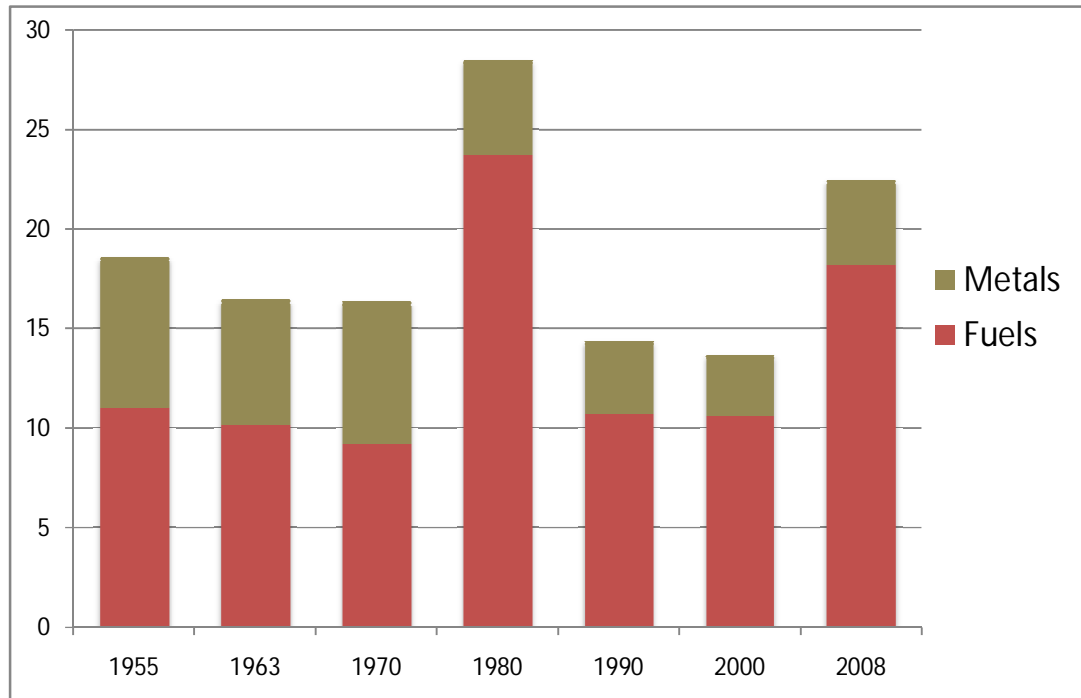
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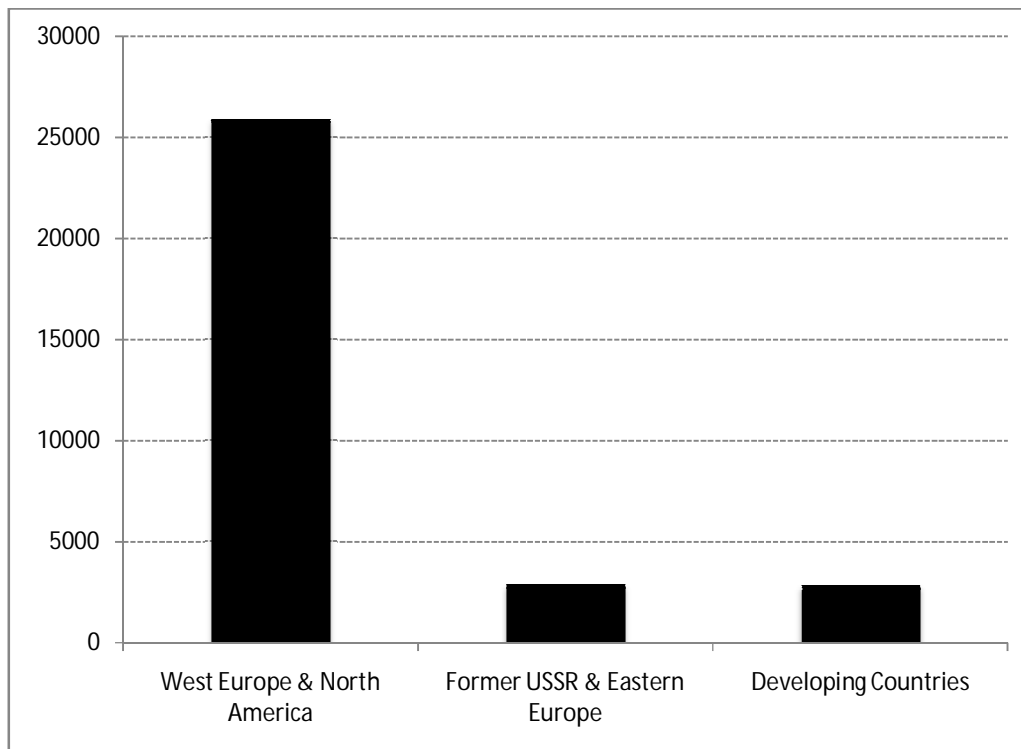
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**Figure 1: Fuels and metals as a share of total merchandise trade, 1955-2008**



Source: World Trade Organization, 2010

**Figure 2: Foreign Direct Investment in Extractive Industries, 2007**



Notes: These figures show the stock of foreign direct investment in “petroleum, mining, and quarrying” in 2007, expressed in dollars per square kilometer of territory.

Source: Calculated from data in UNCTAD [2009].

**Table 1: Separatist Conflicts in Oil-Producing Regions**

Country	Conflict Years	Country Income	Region
Angola	1975-2007	\$1073	Cabinda
Bangladesh	1974-92	\$243	Chittagong Hill Tracts
China	1991-	\$422	Xinjiang
India	1990-	\$317	Assam
Indonesia	1975-2005	\$303	Aceh
Iran	1966-	\$1053	Kurdistan
Iran	1979-80	\$1747	Arabistan
Iraq	1961-	\$2961	Kurdistan
Nigeria	1967-1970	\$267	Biafra
Nigeria	2004-	\$438	Niger Delta
Pakistan	1971	\$275	Bangladesh
Pakistan	1974-77	\$280	Baluchistan
Russia	1999-2001	\$1613	Chechnya
Sudan	1983-2005	\$293	South
Turkey	1984-	\$2091	Kurdistan
Yemen	1994	\$443	South

These are the separatist conflicts that broke out between 1960 and 2010, in which armed groups in oil-producing region fought for independence. *Country Income* is for the year the conflict began, or the closest year for which data are available. Figures are in constant 2000 dollars per capita.

Source: conflict data are drawn from Gleditsch et al. (2002); income data are from World Development Indicators.