Country Note H

Natural Resources: When Blessings Become Curses

Since at least the time of Adam Smith and David Ricardo there has been a belief that natural resources are a blessing: that countries richly endowed with natural resources have an advantage over countries that are not. For centuries, people moved to where natural resources were abundant: to the Americas, to Australia, to oil-rich countries in the Middle East. Natural resource endowments have helped many countries, including Australia, Canada, Finland, and Norway, to grow and diversify, in part by providing a basis for developing associated technologies and capital goods industries (World Bank 2001b).

Since the end of World War II, however, and particularly since the 1960s, evidence has accumulated that natural resources are less often a blessing than a curse.[1] This finding is statistically robust, invariant to changes in specification, variable definitions, or inclusion of additional explanatory variables—including those commonly used in empirical growth studies, such as geography and climate. After controlling for all possible influences and interactions, the evidence is that countries rich in natural resources grow more slowly.

Not only economic growth is affected negatively (Gelb 1988). Controlling for country income level, countries that are rich in natural resources have more unequal income distribution and a larger share of their population in poverty; they exhibit greater corruption, have more authoritarian regimes, spend more on the military, and face a higher probability of an armed conflict (Palley 2003). The probability of a civil conflict is 0.5 percent in a country with limited natural resources, but 23 percent in a country where natural resources account for 26 percent of GDP (Collier and Hoeffler 1998, 2001). In far too many countries, including Iraq, Nigeria, Sierra Leone, Venezuela, former Zaire, Zambia, and many others, enormous oil or mineral wealth has not translated into economic and social well-being for the majority of the population.

The natural resources that depress countries' long-run growth are those whose rents are technically easy to appropriate: so-called point-source natural resources such as diamonds, gold, oil, and minerals. Other resources, such as land or human resources, have more diffuse rents and do not seem to have such an effect.

Two lines of explanation have emerged to explain the "natural resource curse." The first focuses on how natural resources affect the economy, and the second on how they affect institutions (Eifert, Gelb, and Tallroth 2003).

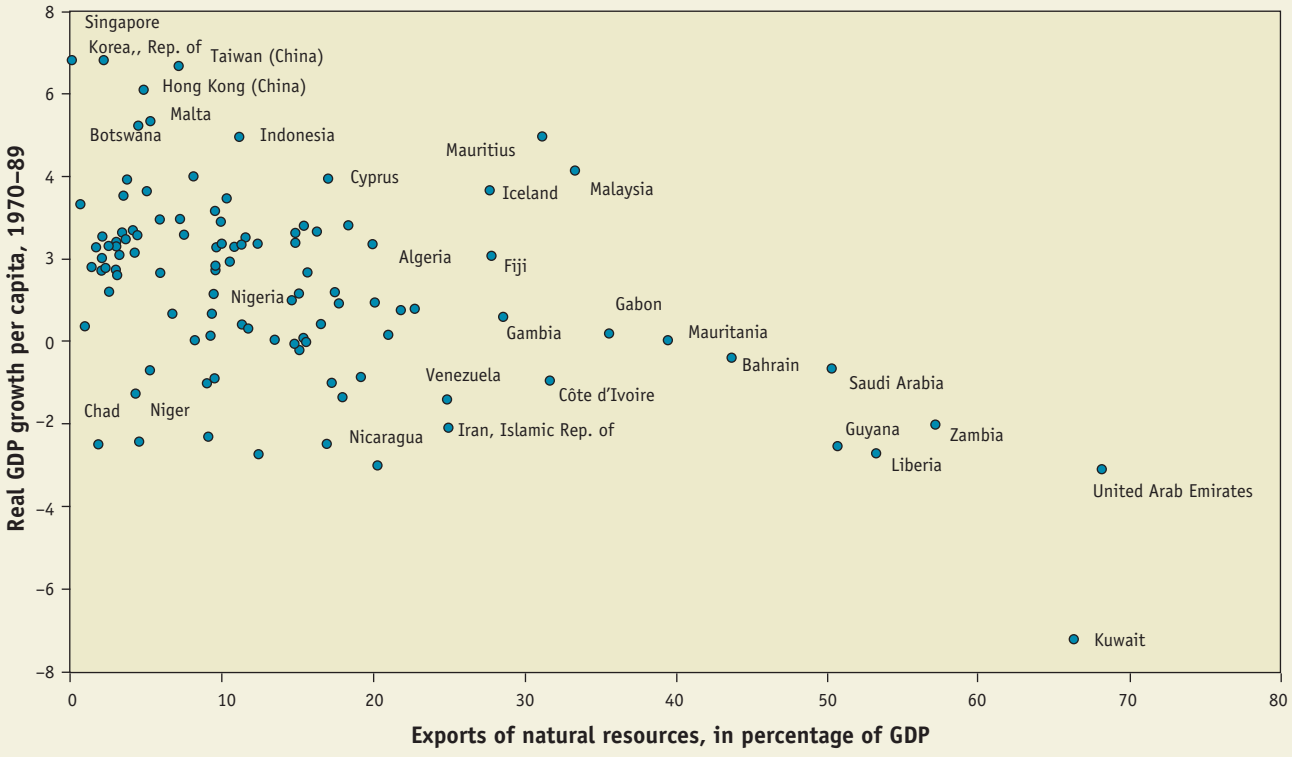
Economic Effects

The so-called Dutch disease is perhaps the most well-known effect of natural resource rents on the real economy. High exports of natural resources cause an appreciation of a country's real exchange rate, which moves its productive resources away from tradables such as manufactured goods. If manufacturing produces significant positive externalities that are crucial for long-term development, such as learning-by-doing, the country's economic growth rate will suffer (Sachs and Warner 1997).

Another well-known problem of resource-rich economies is volatility, with cycles of boom and bust. For example, the high resource prices of the 1970s led resource-rich countries to borrow heav-

FIGURE H.1

Natural Resources and Growth, 1970–89



Source: Sachs and Warner 1997.

ily, and the collapse of prices that ensued in the early 1980s left them with large debts and little capacity to service them (Manzano and Rigobon 2001). The countries affected ranged from Bolivia to República Bolivariana de Venezuela to Côte d'Ivoire and Nigeria; many resource-rich countries have not yet recovered.

Equally serious, unless a resource-rich economy has a large non-resource-based tradable sector to begin with, the uncertainty associated with cycles of boom and bust can reinforce a downward cycle. The smaller the nonresource tradable sector, the fewer opportunities workers have to find new jobs when resource prices decline; as a result, a price decline can cause the whole economy to contract. Interest rates will reflect the risks associated with this volatility: the greater the volatility, the higher is the interest rate, and, in turn, the smaller are investments in nonresource tradables. These two effects combine to cause the economy to specialize away from production of nonresource tradables. In turn, the less the economy produces nonresource tradables, "… the greater the volatility of relative prices, the higher the interest rate the sector faces, causing it to shrink even further, until it disappears" (Hausmann and Rigobon 2002).

Saving rates in oil-exporting countries are much higher than in other developing countries. But even so, these relationships mean that without corrective policies, volatility causes oil-exporting economies to specialize inefficiently in the production of nontradables, retarding their long-term growth. Thus, it has been argued that República Bolivariana de Venezuela's growth implosion in the early 1980s

was the result of the high real interest rates facing the nonresource tradable sector, and of uncompetitive and volatile exchange rates, which caused the country to specialize almost exclusively in resource extraction and nontradables (Hausmann and Rigobon 2002).

Institutional Effects

These economic explanations do not answer questions about the differences in performance across resource-rich countries, such as why diamonds have been a curse for Sierra Leone but a blessing for Botswana, or why oil has been a blessing for Indonesia. Neither can they explain why point-source natural resources affect growth differently from natural resources with more diffuse rents. Such differences in performance have given rise to a large literature offering political and institutional explanations of the resource curse.

Large and concentrated rents, easier to appropriate than the more diffuse rents associated with land or human resources, make societies less entrepreneurial by increasing the private returns to unproductive rent-seeking. Several studies focus on the "voracity effect," or common pool problems, that move an economy into a low-growth equilibrium because of political fights over resource rents (Lane and Tornell 1999; Mehlum, Moene, and Torvik 2003). In Nigeria, for example, governance institutions were weak and large oil resources were wasted. Large windfall oil profits corrupted Nigeria's institutions and changed its politics, which came to be shaped by the incessant fight over resource revenues. Public spending turned into outright patronage, crippling the civil service. Starting with the Biafra war in the late 1960s, successive military dictators plundered Nigeria's oil wealth, wasting resources on an enormous scale; the country's total factor productivity has declined by 1.2 percent a year over the last few decades (Sala-i-Martin and Subramanian 2003).

Numerous econometric studies confirm that countries rich in natural resources have weaker institutions, measured in terms of checks and balances on the executive, rule of law, and corruption (Sala-i-Martin and Subramanian 2003; Isham et al. 2003; Sala-i-Martin, Doppelhoffer, and Miller 2003; Robinson, Torvik, and Verdier 2002; Mehlum, Moene, and Torvik 2003). These studies also show that, controlling for institutions, natural resources have no effect on long-term growth. That is, institutions are not just the principal but the *only* channel through which resources influence the course of the economy.

While natural resources were a curse for Nigeria, the discovery of diamonds became a blessing for development in Botswana, as did oil in Indonesia.

Botswana has effectively maintained law and order, limited state predation, and enforced hard budget constraints on its parastatal organizations (Acemoglu, Johnson, and Robinson 2003). The government has invested heavily in the expansion of infrastructure and efficient delivery of education and health services. While AIDS has reversed some of the health gains, and led to a sharp decline in life expectancy, Botswana's other social indicators are among the better in Africa and in the developing world. The bureaucracy is largely meritocratic, relatively noncorrupt, and efficient. Fiscal revenues from resource rents have been used to smooth revenue over commodity price cycles, rather than financing consumption booms; indeed, Botswana was one of the first countries to establish a stabilization fund, which it managed well. One of the reasons behind Botswana's success is believed to be its benign neglect by colonial powers: Botswana was on the periphery of the British empire, not known to have valuable resources, and hence of little interest. Thus, unlike in most other African countries, colonialism had a negligible effect on traditional social and political institutions. Botswana's pastoral traditions traditionally encouraged broad-based participation and constraints on political leaders; rural interests, chiefs, and cattle owners retained their political power throughout the colonial period. They have been the source of checks on the executive, and explain why diamond rents have been exceptionally well managed.

Indonesia did not have democratic and participatory institutions, at least until very recently. But

although corruption and governance problems were widespread, Soeharto's regime focused on economic and social development. On the one hand, it provided checks on state and individual predation and, on the other, it provided predictability and consistency in policy making (Temple 2003). Internal accountability mechanisms enabled the bureaucracy to deliver a wide array of social and infrastructure services, and antipoverty programs. Growth in Indonesia was not only rapid but quite widely shared, through programs such as the Instruction of the President (INPRES), a rural development program that was started at the time of the first rise in oil prices in 1973 and subsequently expanded. INPRES included village support grants, rural infrastructure, and a massive expansion of schooling (World Bank 1993). One reason for Indonesia's success was that the Soeharto regime shielded technocrats from political pressures: the group of high-level technocrats responsible for policy making (the "Berkeley mafia") was empowered to make economic policy decisions with long-term growth and development objectives in mind. Thus, the response to a fall in oil prices in the early 1980s was a textbook adjustment that triggered comprehensive microeconomic reforms—from competition policy to exchange rate adjustments and trade liberalization (see also Country Note B, "Lessons from Countries That Have Sustained Their Growth").

Economic and political explanations are difficult to disentangle. In the course of development, economic institutions are shaped by economic incentives and opportunities, and political dynamics respond to underlying economic forces (Engermann and Sokoloff 2002). Political and other institutions may be the main explanatory forces, but economic forces also play a role in explaining why the institutions are the way they are.

Conclusion

Simply copying or adopting policies that have been effective elsewhere rarely succeeds. Many resource-rich developing countries have experimented with oil funds or stabilization programs—with disappointing results. Successful management of a natural resource curse calls for a combination of policies and institutions. On the economic policy front, counter-cyclical stabilization policies have a critical role to play, as do policies that maintain the competitiveness of the real exchange rate for the nonresource tradable sector, and financial policies that encourage investments in that sector. On the institutional front, institutions such as transparency, and checks and balances on the use of rents, that increase the costs of nonproductive activities can help countries to move away from rent-seeking equilibria to more dynamic, diversified, and growing economies. East Timor's oil stabilization fund illustrates this approach. While it is too early to determine how the fund will work in practice, the intent of the fund is to rely on institutional improvements that ensure resource rents are effectively used for long-term development. It emphasizes transparency and public awareness of the issues that concern the good use of oil revenues, thus developing constituencies in support of prudent policies.

Note

1. Sachs and Warner (1995b, 1997, 2001); Lane and Tornell (1999); Auty and Mikesell (1998); Gylfason (2001); Leite and Weidmann (1999); Dalmazzo and de Blasio (2001). While there are many ways to define natural resource abundance—for example as the share of natural resources in the gross domestic product (GDP) or exports (as in figure H.1), with further breakdown for fuel, ores, and metals; or oil-producing versus other developing countries—they all suggest that countries rich in resources grow more slowly.