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"Resources and economic growth: Is Africa (Ghana) different?"

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ABSTRACT

Natural resources have important implications for the conduct of economic policies and the role and design of institutions in resource-rich countries. A brief review of the experiences of a few resource-rich countries, including Botswana and Mauritius, highlights the successes of those that have done well as well as some of the fiscal, monetary and exchange rate policy issues that arose along the way. Special attention is given to Norway, the world's third largest oil exporter and the role of good governance, including democracy. Several useful lessons can be drawn from Norway's experience. First, human capital matters most, as does democracy, an important aspect of social capital. Secondly, some ways of managing natural resources seem more conducive than others to the build up of human and social capital. These are general lessons by nature and thus also apply to Ghana and the rest of Africa.

1. Introduction

There was a time when economic geographers studied raw materials and their distribution around the world and assigned a crucial role to natural resource wealth and raw materials, their ownership and trade routes. Ownership of those important resources tended to be equated with economic and political strength. The European powers' scramble for Africa from 1881 onwards—this was when France occupied Tunis with Germany's consent—was primarily a scramble for the great continent's resources. The slave trade from the mid-15th century on can be viewed from this perspective.

It did not take long, however, for it to become clear that natural resources do not always confer widely shared benefits on those who own them. Even after the end of colonial rule in

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Africa and elsewhere, many resource-abundant countries—Congo is a case in point—remained in dire straits. Some other countries– Nigeria, for example – which discovered their natural resources following independence also did not experience rapid economic growth for reasons that seem—at least in part—to be related to poor management of their natural resource wealth. Even so, some natural resource-rich countries have made impressive progress. Botswana, Chile and Mauritius will be singled out in what follows. On the other hand, several resource-poor countries succeeded in becoming rich, including Hong Kong, Japan and Singapore.

The new economic geography places relatively little emphasis on natural resources by recognizing several distinct sources of wealth, namely the accumulation of human and social capital. There are many different kinds of man-made capital and, accordingly, many different sources of economic growth which people and their governments can exploit. Social capital refers to the quality of formal and informal institutions, including governance, transparency and trust.

Worldwide, natural capital only constituted a small part (6 per cent) of total national wealth in 2005 (*The Wealth of Nations*, World Bank, 2010). If intangible capital—that is, human and social capital—is excluded from the calculation, natural capital constitutes 26 per cent of total tangible capital at the global level. Tangible capital comprises produced capital, urban land, natural capital and net foreign assets. For comparative purposes, sub-Saharan Africa's natural capital amounts to 28 per cent of the continent's total wealth and 70 per cent of its total tangible capital. In the Middle East, the figures are 34 per cent and 58 per cent, respectively.

Recent economic growth theory suggests that the interplay of several sources of economic growth and development is important for growth. For example, the conversion of natural capital into human and social capital to foster growth requires, or is at least facilitated by, good institutions and governance. In another example, investments in human and social capital tend to go hand in hand and reinforce one another. Here two types of classification can be helpful.

First, growth can be *extensive*, driven forward by the accumulation of capital, or it can be *intensive*, resulting from a more efficient use of existing capital and other resources. Among the numerous alternatives for promoting economic and social efficiency, one of the most effective ones is the accumulation of human capital through education, on-the-job training and health care. There are many other ways to increase efficiency and economic growth. For instance, free trade can empower individuals, firms and countries to break the confines of their production frontiers which under autarky would entail lower living standards. Moreover, it is now widely recognized that the quality of economic policies and societal institutions, including good governance, can help generate sustained growth, as can various other factors which are closely related to economic organization, institutions and policy (Acemoglu and Johnson, 2005).

A second classification distinguishes among several different types of capital that, like plants, grow at different rates:

a) Saving and investment to build up *real capital*—physical infrastructure, roads and bridges, factories, machinery, equipment, etc.

b) Education, training, health care and social security to build up *human capital*, i.e., a better and more productive work force.

c) Exports and imports of goods, services and capital to build up *foreign capital* to supplement domestic capital, among other things.

d) Democracy, freedom, equality and honesty—that is, absence of corruption—to build up *social capital* to strengthen the social fabric, the glue that helps hold the economic system together and keep it effectively running.

e) Economic stability with low inflation to build up *financial capital*—in other words, liquidity—that lubricates the wheels of the economic system and helps to keep it running smoothly, and

f) Manufacturing and service industries that promote diversification of the national economy away from excessive reliance on low-skill intensive primary production, including agriculture, based on *natural capital*.

Natural capital differs from the other types of capital presented here in that it may be a good idea—for reasons to be discussed below—to be on guard against excessive reliance on this particular type of capital. Here it is important to clearly distinguish between natural resource abundance and natural resource dependence. Abundance refers to the amount of natural capital a country has at its disposal: mineral deposits, oil fields, forests, farm land and the like. Dependence denotes the extent to which a given country depends on these natural resources for its livelihood. Some countries with abundant natural resources, for example, Canada and the United States, have outgrown these resources and are no longer particularly dependent on them. Other resource-abundant countries, for example, the members of the Organization of Petroleum Exporting Countries (OPEC), depend on their resources, some practically on all they have got. Still other countries, say, Chad and Mali, have few resources yet depend on them for the bulk of their export earnings because they have little else to offer for sale abroad. Others still have few resources but do not depend on the few they have in any significant way. The idea that diversification away from natural resources may be beneficial for long-term growth focuses on dependence rather than abundance even if this distinction may in some instances be difficult to make in practice. It is quite conceivable that excessive dependence on a few natural resources may hurt economic growth, even if an abundance of natural resources, if well managed, may have a positive impact on growth. By contrast, no country has ever suffered from excessive reliance on human capital built up through education.

The rest of the article is organized as follows. First, we consider the implications of natural resources for the conduct of economic policies and the role and design of institutions in resource-rich countries. Next, we briefly review the experiences of a number of resource-rich countries, highlighting the successes of those that have done well, with a special emphasis on Norway, the world's third largest oil exporter. Finally, we consider the lessons Ghana and other African countries may be able to draw from recent experiences.

2. Policy issues arising in natural resource-rich countries

This section addresses the three key areas in which the management of natural resources in resource-rich countries raises important issues: (i) fiscal policy, (ii) monetary, financial and exchange rate policy, with an emphasis in both cases on the important role of institutions and governance and (iii) the need for diversification away from excessive dependence on a few resources as well as from narrowly based power elites. Let us first turn to taxes.

2.1. Fiscal policy issues and institutions

It makes a difference in economic terms how public revenue is raised to finance society's collective needs and how efficiently the revenue is spent. The overall objective of tax policy should be the collection of enough revenue at the lowest possible cost and distortion. The worst possible option for collecting revenue is resorting to inflation tax, which is probably the least efficient and most harmful and distorting of all methods of taxation. Most other forms of taxation have side effects that discourage households and firms from doing the things they would like to do. Import tariffs impede foreign trade and consequently also economic efficiency and growth. Income taxes discourage work and market production. Sales taxes disproportionately fall on low income households which spend most of their income on necessities and are left with little to save. Natural resource-rich countries can to some extent avoid these problems because they possess a tax base that provides the opportunity to collect public revenue at a minimal cost to efficiency through distortions. This is because the resources will stay put—they are there—and cannot be moved. This argument is akin to the old story that land taxes are more efficient than taxes on movable factors of production. But there is a difference, a big difference. Natural resources belong to the people.

As a matter of near-universal principle, people's right to their natural resources is a human right proclaimed in key international law documents and enshrined in many national constitutions (Wenar, 2008). Thus, Article 1 of the International Covenant on Civil and Political Rights states that "All people may, for their own ends, freely dispose of their natural wealth and resources". The first article of the International Covenant on Economic, Social and Cultural Rights is identical. Except in the United States, where rights to oil resources were legally transferred to private companies, natural resources are as a rule common property resources. This means that by law, the resource rents accrue in large part to the government. Hence, no taxation is really needed except as a formality. In any case, the word 'tax' is inappropriate in this regard. Here, 'fee' is a more fitting word because fees are typically levied in exchange for providing specific services such as a permission to utilize a common property resource. Therefore, resource taxes should instead be referred to as 'fees' or 'resource depletion charges' (Gylfason and Weitzman, 2003). In any event, it is important to use the proceeds from resource fees to either finance socially productive expenditures or to reduce the use of other less efficient revenue sources to keep the overall tax burden manageable. Good fiscal governance requires careful attention to allocative and technical efficiency on both sides of the fiscal equation, public expenditures as well as revenue mobilization needed to finance those expenditures.

The legal aspect of natural resources as a human right has another important implication. The accrual of natural resource rents by the government presupposes representative democracy and, hence, with reference to international law, the legitimacy of the government's right to dispose of the resource rents on behalf of the people. This principle is, for instance, acknowledged in the Permanent Constitution of the State of Qatar, Article 1, which states: "Its political system is democratic." Further, Article 29 stipulates: "Natural wealth and its resources are the property of the State; and the State shall preserve and exploit the same in the best manner in accordance with the provisions of the law." In another example, Article 108 of the Iraqi Constitution of 2005 proclaims that "Oil and gas are the property of the Iraqi people in all the regions and provinces." Again, with reference to international law, such a proclamation presupposes political diversification through representative democracy.

Because their prices tend to be volatile, abundant natural resources tend to go hand in hand with fluctuations in export revenues. Such volatility calls for fiscal stabilization. This raises the classic question of rules versus discretion. Discretionary stabilization measures aimed at building up foreign exchange reserves and fiscal revenues when commodity prices are high and using up reserves and revenues when prices are low can be criticized on the grounds that they tend to kick in too late and thus become counterproductive, exacerbating the volatility of earnings. Fiscal rules, on the other hand, can be faulted for being too mechanical and insensitive to circumstances. This is a classic dilemma for which no one-size-fits-all solution exists.

Chile applies a fiscal rule by which the Government can run up a deficit that is higher than the target of zero, or 1 per cent surplus relative to GDP, insofar as the GDP falls short of potential or the price of copper is below its medium-term (10-year) equilibrium level (Frankel, 2010). The aim of this scheme is to shield producers—and the national economy—from price fluctuations. This subjects the scheme to similar reservations as price stabilization funds and, more generally, rules-based stabilization policies. The scheme has both pros and cons. One novel aspect of the Chilean scheme is that two panels of independent experts determine the output gap and the medium-term equilibrium price of copper to reduce the risk of short-sighted political interference. This approach is applicable across a broad range of natural resources.

2.2. Monetary policy issues, finance and exchange rates

Several monetary policy issues arise in connection with natural resource management. Perhaps the most important one relates to the Dutch disease, so named for triggering fears of deindustrialization in the Netherlands following the appreciation of the Dutch guilder after the discovery of natural gas deposits in the North Sea around 1960 (Figure 1). In fact, the Dutch recovered from the ailment fairly quickly and have seen their exports and imports rise rapidly relative to GDP. As it turned out, gas exports did not, in fact, crowd out other exports. In other words, the 'Dutch' part of the term proved to be a misnomer. How about the disease part? This remains a matter of controversy. Some observers view dislocations due to high currency values simply as a matter of one sector benefiting at the expense of others, without seeing any macroeconomic or social harm in it. Others view the Dutch disease as such, pointing to the potentially harmful consequences of the resultant reallocation of resources—from high-tech, high-skill intensive services to low-tech, low-skill intensive primary production, for example—for economic growth and diversification. Clearly, an overvalued currency hurts exports and import-competing industries. This is one of the most robust empirical relationships in international economics.

Until recently, Norway's total exports were long stagnant in relation to GDP following the oil discoveries around 1970. That is, oil exports crowded out non-oil exports one to one relative to GDP. Norway does not have high-tech companies that compare with Sweden's LM Ericsson, Finland's Nokia, or Denmark's Bang and Olufsen. Yet another sign of Norway's tendency, albeit a weak one, towards the Dutch disease is perhaps its unwillingness—almost unique in Europe—to join the European Union. This reluctance is based in part on the popular belief that Norway's oil wealth has reduced the country's need for the benefits European Union membership offers. Even so, Norway has proved successful in keeping inflation low to prevent the overvaluation of its currency. Sustained price stability requires good monetary governance through independent yet accountable central banks. Likewise, healthy financial sector development also requires efficient monetary governance, including credibility and transparency. A lack of transparency seems to have played a role in the financial crisis that began in the United States in 2007.

The volatility of commodity prices does not only pose a challenge for fiscal policy, but also for monetary policy by causing volatility in exchange rates, export earnings, output and employment. Experience shows that volatility can be detrimental to investment and growth (Aghion and Banerjee, 2005). Exchange rate volatility is no exception. This is one reason why natural resource-rich countries are prone to sluggish investment and slow growth. With this in mind as well as the resounding success of the euro since its launch in 1999, more and more countries in Africa and around the world are discussing plans to pool their currencies to foster economic stability and growth. This is the surest, albeit not risk-free way to use monetary policy to avoid overvaluation and excessive currency volatility. To paraphrase Winston Churchill's comment about democracy: the best way to preserve the integrity of the national currency is to abolish it—or, more precisely, share it with others.

The build-up of natural resource funds raises a number of issues. Stabilization funds are intended to insulate the economy from volatility in commodity prices. Countries have a choice to consider the fund either as part of the government's fiscal chest available for current use or as a reserve for future subject to strict rules about its planned use. After a few years of experimenting, Norway decided to place itself firmly at one end of the spectrum, having in recent years invested virtually all of its oil revenues in foreign securities and setting them aside in a pension fund for future use. Low and middle-income countries, however, have more pressing current needs and may therefore find the Norwegian approach impractical. Even so, they could benefit from trying to depoliticize the use of natural resource revenues by vesting them to an independent authority set up along the lines of independent yet accountable central banks, judiciaries and supervisory authorities. Understandably, easy revenues from natural resources are especially tempting for politicians in urgent need of public support. Therefore, prudence calls for firewalls to be erected between sovereign wealth funds and the heat of the day-to-day political process. This is a question of checks and balances, of finding ways to reduce the risk that natural resource revenues are misspent or even squandered for short-term political gain.

The underlying issue here is the risk of rent seeking, especially in conjunction with ill-defined property rights, imperfect or missing markets and lax legal structures. The problem with rent seeking, apart from the injustices it tends to produce, is that it also tends to divert productive efforts and resources away from more socially fruitful economic activity. Without adequate checks and balances, even full-fledged democracies can fall into this trap. Less democratic countries appear to be even more prone to this risk. This is why important international initiatives have recently been taken to encourage increased transparency in the use of natural resource revenues. The Extractive Industries Transparency Initiative (EITI) aims to establish a global standard for transparency in oil, gas and mining. The Natural Resource Charter (NRC) lays out "a set of principles for governments and societies on how to best manage the opportunities created by natural resources for development." The Revenue Watch Institute (RWI) promotes responsible management of oil, gas and mineral resources for the public good. Put bluntly, open access to other people's money tends to breed carelessness as well as a false sense of security that may nurture the attitude that anything goes, resulting in the neglect of many of the factors that actually foster growth, including education and institutions. This is the sense in which, if it is not well managed, natural capital may tend to crowd out other types of capital.

The question of other people's money raises yet another legal issue. Sovereign wealth fund managers are not necessarily free to manage the funds entirely as they see fit if their guidelines and rules do not fully comply with international or local laws. Because the legal issues raised by Wenar (2008) are new to most economists and policymakers, it is not clear that these guidelines and rules were designed to be waterproof. To illustrate the point, Wenar tells the story of Equatorial Guinea where the oil export boom after 1990 has produced immense but highly concentrated private wealth amid public squalor, even though the oil wealth belongs to the people according to Article 1 of the International Covenant on Civil and Political Rights, which Equatorial Guinea has signed.

2.3. Double diversification

Economic diversification encourages growth by diverting economic activity from excessive reliance on primary production in agriculture or on a few natural resource-based industries, thus facilitating the transfer of labour from low-paying jobs in low-skill-intensive farming or mining to more lucrative jobs in more high-skill-intensive occupations. Political diversification encourages growth in a similar way by redistributing political power from narrowly based ruling elites to the people, thereby often replacing an extended monopoly of sometimes ill-gotten power with democracy and pluralism. The essence of the argument is the same in both cases: diversity pays.

Modern mixed economies need a broad base of manufacturing, trade and services to be able to offer people a steadily improving standard of living. Therefore, they need to find ways of diversifying their economic activity away from once dominant agriculture which tends to perpetuate poverty and similarly away from too much dependence on a few natural resources which tend to stifle or delay the development of modern manufacturing and services. To function effectively, national economies also need broad political participation and a broad base of power to be able to offer citizens an efficient and fair way of exercising their political will and civil rights through free assembly, free elections and the like. Without political democracy, bad governments tend to last too long and do too much damage. The need for diversification is especially urgent in resource-rich countries because they often face a double jeopardy—that is, natural resource wealth that is concentrated in the hands of relatively small groups who seek to preserve their own privileges by standing in the way of both economic and political diversification which, after all, would diffuse their power and wealth. Rent seekers typically resist reforms—economic diversification as well as democracy—that would redistribute the rents to their rightful owners (Auty, 2001; Ross, 2001).

While diversification is a widely shared goal, it is not necessarily obvious how it can be achieved. But some guidelines can be offered. First, avoiding currency overvaluation is important because an overvalued currency punishes both the export industries specializing in manufacturing and services and the import-competing industries. It takes considerable discipline to resist the temptation to allow the currency to appreciate above its appropriate level, because of the politically popular benefits that accrue from cheap foreign exchange for both households and firms that depend on imported inputs. This is yet another reason why independent but accountable central banks, immune by law from political pressures, are so important. Monetary policy is now widely considered as being too important to be left in the hands of impatient politicians, which is why central banks in many countries have been granted greater independence from political authority to pursue the monetary policy objectives they see fit—almost invariably, low inflation—determined by the government.

The same argument applies to the stabilization function of fiscal policy as well as to those aspects of fiscal policy associated with the disposal of natural resource rents and to the related factors mentioned above. This argument does not, of course, apply to fiscal policy across the board, because government expenditure and revenue decisions are inherently political in their nature and cannot and *should* not in a democracy, be separated from the political process. Other institutions, such as supervisory authorities that monitor banks and financial markets and, where such bodies exist, monitor the management of natural resource rents also need protection through statutory independence from political authorities. Good governance requires institutional design that ensures effective checks and balances. Transparency is thus a prerequisite for good governance. Transparency must go hand in hand with accountability as well as with confidentiality, where appropriate, including protection for whistleblowers. In this regard, the Extractive Industries Transparency Initiative, the Revenue Watch Institute and the Natural Resource Charter have a potentially helpful contribution to make, just like Transparency International. Such international efforts deserve to be supplemented by civil society in individual countries, especially in those that are prone to the problems that often accompany an abundance of natural resources.

Third, more and better education at all levels of schooling is conducive to diversification because a good education opens the door for workers to get well-paying jobs in services and manufacturing. Education and diversification go hand in hand. In sub-Saharan Africa the share of services in GDP increased from 46 per cent in 1965 to 54 per cent in 2008, while in North Africa and the Middle East, the services share dropped from 48 per cent to 46 per cent. By comparison, high-income countries saw the share of services in GDP rise from 55 per cent in 1970 to 73 per cent in 2007 (*World Development Indicators*, World Bank, 2010).

How much government involvement is necessary for diversification? The government plays a key role in education at all levels. Increased school enrolment at the secondary level as well as at higher levels of education would help, aside from being desirable in its own right. In order for graduates to be able to find jobs, the government must see to it that the exchange rate of the currency is compatible with profitable manufacturing and services exports. Otherwise, young people will not be motivated to get a higher education (Pritchett, 2006). Furthermore, the government needs to foster a business-friendly environment that makes it easy to establish new firms. The World Bank's annual Ease of Doing Business ranks the ease with which a business can be set up, including construction permits, employment of workers, registering property, loan approval, protection of investors, paying taxes, trade across borders, enforcement of contracts and shutting down a business. In the current ranking (2010), Singapore ranks first out of 183 countries, followed by New Zealand, Hong Kong SAR and China. The top three frontrunners are followed by the United States and the United Kingdom in fourth and fifth place, respectively. The top oil producers on the list include Norway in tenth and Saudi Arabia in 13th place.

3. Norway and other success stories

3.1. Norway's oil

It was only with the advent of educated labour that Norwegians began to harness their natural resources on a significant scale. Human capital accumulation represented the primary force behind Norway's economic transformation. Natural capital was secondary. The World Bank attributes 62 per cent of Norway's national wealth to intangible capital, including human capital, 21 per cent to produced capital and urban land and only 13 per cent to natural capital; the remaining 4 per cent share is net foreign assets (*The Wealth of Nations*, World Bank, 2010). Today, earnings from oil represent a quarter of Norway's GDP and investment, a third of its budget revenues and half of its export earnings. Norway's Petroleum Fund, established in 1990 and now named Government Pension Fund to reflect its intended use, will before long amount to USD 100,000 per person, or almost two times Norway's purchasing power parity adjusted per capita GDP. It is invested entirely in foreign securities.

Norway's fiscal policy and its management of its oil wealth have played an important role in stabilizing the local economy. Before, a variable but declining share of each year's net oil tax revenue was transferred to the government budget, essentially to cover the non-oil budget deficit. However, as the relative importance of the petroleum sector declines, the share of petroleum revenues used to cover budget deficits will naturally tend to rise. Even so, the domestic economy has been largely shielded from the influx of oil revenues, thereby avoiding overheating and keeping the value of the Norwegian krone from rising. This deliberate strategy has averted or at least limited the potential damage to non-oil exports and import-competing industries, which a more marked appreciation of the krone in real terms would have caused. Low inflation in Norway reflects the Government's disciplined fiscal and monetary policy and, in particular, its resistance to the temptation to channel the country's oil wealth for current use on a large scale in the face of loud calls to use a larger share of the oil revenues to address domestic social needs rather than to continue building up the Government Pension Fund.

Norway's sensible approach to oil wealth management deserves the attention it has received in other resource-rich countries around the world. Several key features characterize Norway's approach:

a) From the outset, even before the first drop of oil was extracted, the oil and gas reserves under Norwegian jurisdiction were defined by law as common property resources, thereby clearly establishing the legal rights of the Norwegian people to the resource rents.

b) On this legal basis, the Government has absorbed about 80 per cent of the resource rent over the years, having learnt the hard way in the 1970s to use a relatively small share of the total to meet current fiscal needs, and instead setting most of its oil revenue aside in the state Petroleum Fund, now the Government Pension Fund.

c) Further to the preventive legislation passed at the outset, the Government laid down economic as well as ethical principles ('commandments') to guide the use and exploitation of the oil and gas for the benefit of current and future generations of Norwegians.

d) The traditional main political parties have had a shared understanding from the beginning about the need to protect the national economy from an excessive influx of oil revenue to avoid overheating and waste, a view that is not, however, shared by the Progress Party (est. 1973), and

e) The Central Bank (Norges Bank), which with the adoption of inflation targeting in 2001, embarked on a course towards increased independence from the Government, manages the Fund on behalf of the Ministry of Finance, maintains a distance between politicians and the Fund which has grown to around USD 450 billion (USD 94,000 per person in Norway in 2009).

By Norwegian law, and in keeping with the International Covenant on Civil and Political Rights, the oil wealth belongs to the state. The petroleum industry extracts oil and gas on public land, albeit offshore. In principle, all the rent from oil and gas should accrue to the Norwegian people through their elected Government. The state's entitlement to these resources constitutes the legal basis for government regulation of the petroleum sector as well as for its taxation. Exploration and production licenses are awarded to domestic and foreign oil companies alike for a small fee. The Norwegian Government expropriates the oil and gas rent through taxes and fees, as well as through direct involvement in the development of the resources rather than through sales or auctioning of exploration and production rights.

For all of these reasons, Norway has been able to avoid rent seeking and related problems which have afflicted other oil exporting countries—Algeria, Iran, Libya, Mexico, Nigeria, Russia, Saudi Arabia, Sudan, Venezuela and others. Figure 2 illustrates how Norway and Saudi Arabia's paths diverged after the mid-1980s when the two countries had a similar per capita GDP. Economic indicators do not, however, do full justice to the impressive progress made by Algeria and Saudi Arabia where, since 1960, life expectancy has increased by no less than 25 years and 27 years, respectively, compared with only 7 years in Norway. All things considered, what sets Norway apart is that it was a well-functioning, full-fledged democracy long before the oil was discovered. The composite democracy index presented in the figure ranges from -10 to 10 (this is the polity 2 index of the Polity IV database, see Marshall and Jaggers, 2001). Democratic governments are less likely than dictators to try to seize resources to consolidate their political power (Mehlum, Moene and Torvik, 2006; Collier and Hoeffler, 2009). In several other countries, point resources such as oil and minerals have proved particularly "lootable", though not in Botswana to which we now turn.

3.2. Botswana, Chile and Mauritius

At the time of independence in 1966, Botswana had 12 kilometres of paved roads, 22 college graduates and 100 secondary school graduates (Acemoglu, Johnson and Robinson, 2003). Diamonds were discovered the following year, in 1967, and now provide tax revenue equivalent to a third of GDP. Botswana has managed its diamond mining quite well and used the rents to support rapid growth, making Botswana the most prosperous country in mainland Africa, having surpassed South Africa a few years ago in terms of purchasing power parity adjusted per capita gross national income (GNI). In Botswana, gross secondary school enrolment rose from 19 per cent for each cohort in 1980 to 80 per cent in 2006 compared with an increase from 50 per cent to 89 per cent in Mauritius over the same period. Between 1980 and 2007, Botswana increased its public expenditure on education from 6 per cent of GDP to 8 per cent compared with 4 per cent in Mauritius.

Unlike Sierra Leone's alluvial diamonds which are easy to mine by shovel and pan and easy to loot, Botswana's kimberlite diamonds lie deep in the ground and can only be mined using large hydraulic shovels and other sophisticated equipment and are therefore not very lootable (Olsson, 2006; Boschini, Petterson and Roine, 2007). This distinction has probably helped Botswana thrive while Sierra Leone failed, as has, most likely, South African involvement—that of De Beers, in particular—in the Botswanian diamond industry. True, with a Gini coefficient of 60 according to the UNDP, Botswana has one of the world's least equal distributions of income and a correspondingly high poverty rate. Even so, Botswana has, by and large, enjoyed remarkable economic success accompanied by political stability and a steady advance of democracy (Figure 3). With low inflation, albeit slightly higher at 10 per cent per year on average between 1966 and 2008 than in sub-Saharan Africa as a whole good policies have without doubt contributed to this outcome. So have good institutions. The corruption perceptions index of Transparency International for 2009 ranks Botswana higher than all other African countries, placing it 37th in a group of 180 countries. The Ibrahim Index of African governance 2010 ranks Botswana in third place out of 53, just behind Mauritius and the Seychelles. The World Bank's Ease of Doing Business index for 2010 has Botswana in 45th place out of 183 countries, behind Mauritius (17) and South Africa (34) and ahead of all other African countries as well as, for example, Chile (49) and Peru (56). Tragically, due to the HIV/Aids epidemic, Botswana's remarkable economic achievements have been accompanied by only a modest increase in life expectancy by four years since 1960 compared with a longer life expectancy by 14 years in Sierra Leone and six years in the Democratic Republic of Congo (Figure 3).

Unlike Botswana, Mauritius has made a deliberate and successful effort to reduce its reliance on its main export commodity, sugar. This was achieved through good policies and effective institutions, emphasizing foreign trade through diplomacy and other means as well as education. The share of manufactures in merchandise exports increased from 2 per cent in 1970 to 57 per cent in 2008. Even so, sugarcane remains the dominant crop, generating 25 per cent of export earnings. Since the mid-1970s, total exports have hovered around 50 per cent to 60 per cent of GDP like in Botswana. These are high ratios by African and international standards, even for small countries with populations below two million. During 1977–2008, inflation remained, on average, below 9 per cent annually. During the same period, investment in Mauritius amounted to 26 per cent of GDP against 32 per cent in Botswana. Life expectancy at birth in Mauritius has increased by 13 years since 1960 as it has in Fiji, another sugar exporter, while Costa Ricans have added 17 years to their average life expectancy (Figure 4).

Hence, like Botswana, Mauritius has done many things right. Beyond the usual determinants of growth that Mauritius got right, including education, exports and investment, Frankel (2010) suggests that the cosmopolitan nature and origin of Mauritius' population has contributed to the island's successful, harmonious and democratic development by creating a balance between ethnic groups like in Singapore, Hong Kong SAR, China and Dubai. Frankel points out that the three African countries with the highest governance rankings (Mauritius, Seychelles and Cape Verde) are all small islands that had no indigenous population, suggesting that it is an advantage when everyone comes from elsewhere, as is the case in the United States—except, of course, for native Americans.

Figure 5 shows the development of real GDP per capita and democracy in Chile, Peru and Zambia. Zambia failed to achieve growth despite its substantial copper deposits, but has all the same made commendable, albeit somewhat uneven, progress on the democracy front. The rapid growth of Chile and Peru has gone hand in hand with an increase in life expectancy by

22 and 26 years, respectively, while life expectancy at birth in Zambia has remained stagnant at 45 years since 1960. Since its return to democracy in 1988, Chile has made rapid progress and become a fully fledged democracy and member of the OECD, tripling its real per capita GDP since the 1980s. Chile has opened up to trade: exports of goods and services increased from 13 per cent of GDP in 1960 to 45 per cent in 2008. By contrast, Zambia, also a major copper exporter, saw its exports plunge from 60 per cent of GDP at the time of independence in 1964 to 37 per cent in 2008. Even so, manufactures accounted for only 12 per cent of Chile's total merchandise exports in 2008 compared to 16 per cent in Peru, to name another major copper exporter and 7 per cent in Zambia. In Chile, 84 per cent attend secondary school compared with 98 per cent in Peru and 52 per cent in Zambia. Inflation is a thing of the past in Chile while Zambia has mostly grappled with double digit inflation or worse since independence. Chile therefore also fits into the general picture: exports, education, investment and price stability are good for growth, especially when encouraged by good governance and democracy.

3. Conclusion

The list of countries that have failed to use their abundant natural resources to foster rapid economic and social progress is long. Before we conclude, let us consider Nigeria.

Nigeria's per capita GDP grew more than twice as fast in the country's first decade following independence, from 1960 to 1970, as it did subsequently despite the massive export revenue boom of the 1970s and beyond (Figure 6). Per capita growth in Nigeria has averaged 1.1 per cent annually since 1960. Life expectancy has increased by ten years since independence compared with 25 years in Algeria, for example. This is not much to show for considering all of Nigeria's oil proceeds. Gross mismanagement of the oil rent appears to be at the root of Nigeria's problems, and Nigeria is not alone.

To stimulate growth in Nigeria, it has been suggested to transfer oil revenues from public hands to the private sector (Sala-i-Martin and Subramanian, 2003). But the private sector is not infallible either as events in global financial markets since 2007, including Nigeria, have demonstrated once again. Consider this analogy: if judges prove to be corrupt, the solution is not to privatize the judicial system. Rather, the solution should be to replace the corrupt judges and reform the system by legal or constitutional means aimed at securing the integrity of the courts. If the privatization route is taken, however, it matters to whom in the private sector the oil rent is transferred. If the rent is divided evenly among the adult population as in Alaska, the allocation can be deemed fair, albeit not necessarily efficient. If, on the other hand, the resource rent is allocated to select interested parties as is the case in Iceland, where common property fishing quotas have been handed to boat owners free of charge for 25 years, the allocation fails both the fairness as well as the efficiency test.

In this spirit, rather than dwelling on failure, this article has highlighted some key features of some of the most successful natural resource-rich countries, especially Norway, in addition in brief to Botswana, Chile and Mauritius. Empowered by vigorous trade, a strong emphasis on education, effective policies and good governance, these countries have been able to harness their resource rents for the benefit of their people, the rightful owners of the resources by local law as well as by the International Covenant on Civil and Political Rights. Privatization has not been part of the solution. The United States remains the only country that transferred its oil wealth to private companies long ago and quite legitimately within its democratic system of government. By contrast, the Norwegian Government in its role as guardian of the people has kept a tight grip on the country's oil wealth while at the same time setting up a governance structure intended to safeguard the Oil Fund—now the Government Pension Fund—from political interference. Clearly, African countries with pressing economic and

social needs cannot be expected to show the same patience as the Norwegians. Africa is in a hurry.
Even so, it is within African countries' grasp to build governance structures designed to separate management of their resource wealth from short-term political pressures. Any country with an independent judiciary or independent central bank, or both for that matter, knows by experience how to set up institutions for the purpose of immunizing those public policy spheres deemed too important to be left in the hands of myopic and impatient politicians from the vicissitudes of the political process. Yet even if this task can be satisfactorily accomplished, it remains necessary and desirable to tailor fiscal, monetary and exchange rate policies and institutions in resource-rich countries to their special circumstances, not least to increase the efficiency of revenue collection to the furthest possible extent and to uproot the scourge of overvaluation.

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Figure 1. How oil discovery crowds out non-oil exports

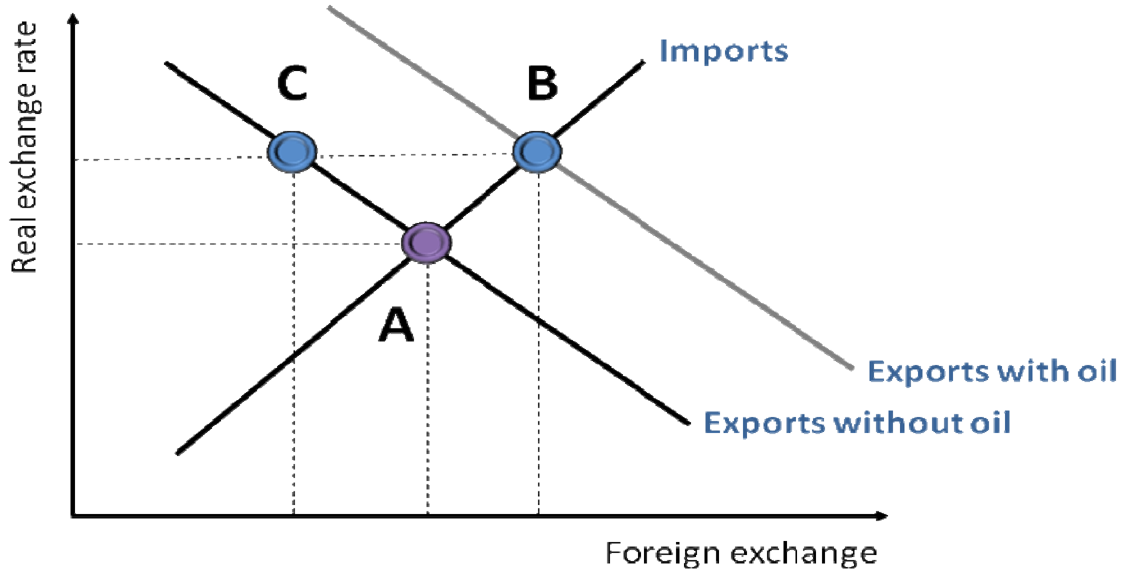

Figure 2.Algeria, Norway and Saudi Arabia

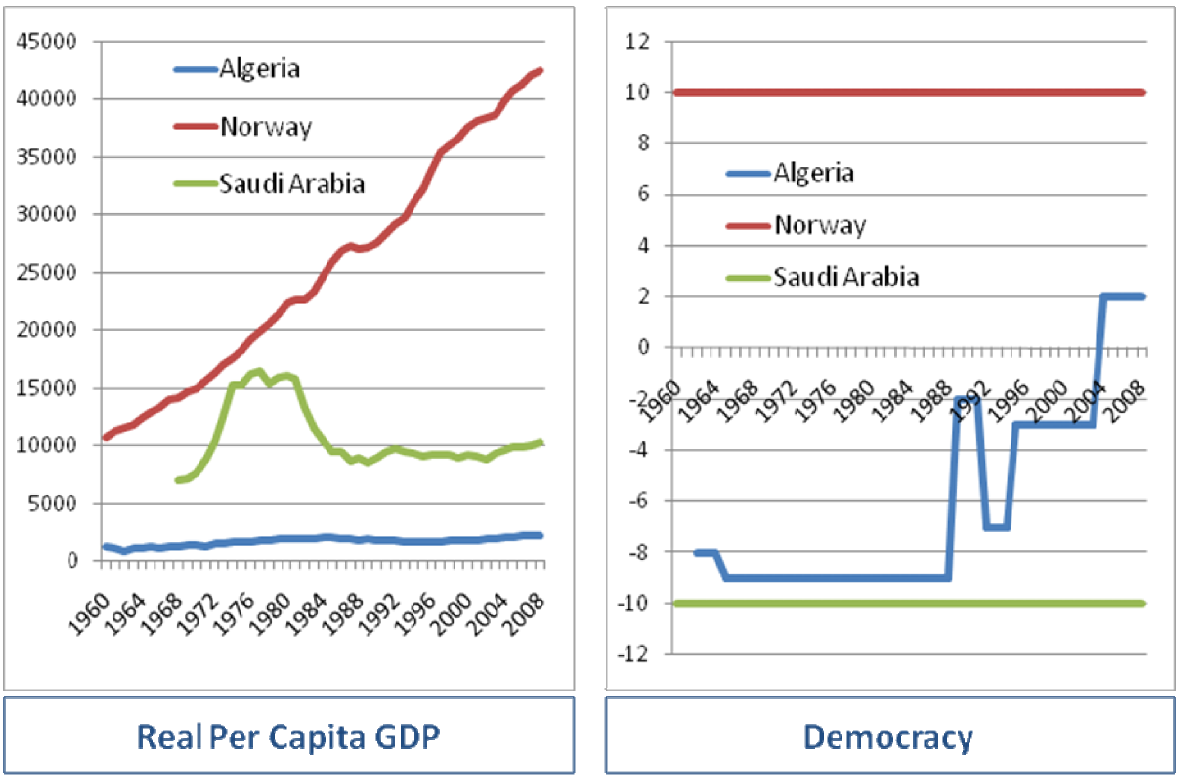

Figure 3. Botswana, Congo and Sierra Leone

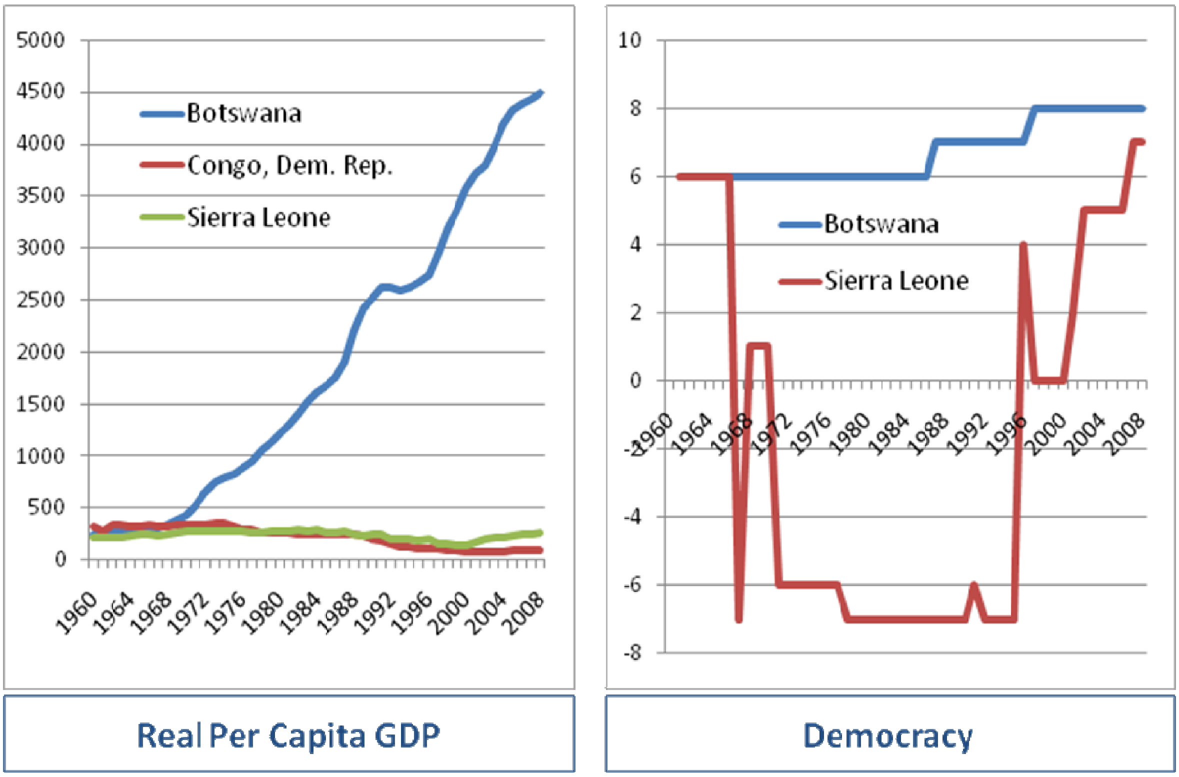

Figure 4. Costa Rica, Fiji and Mauritius

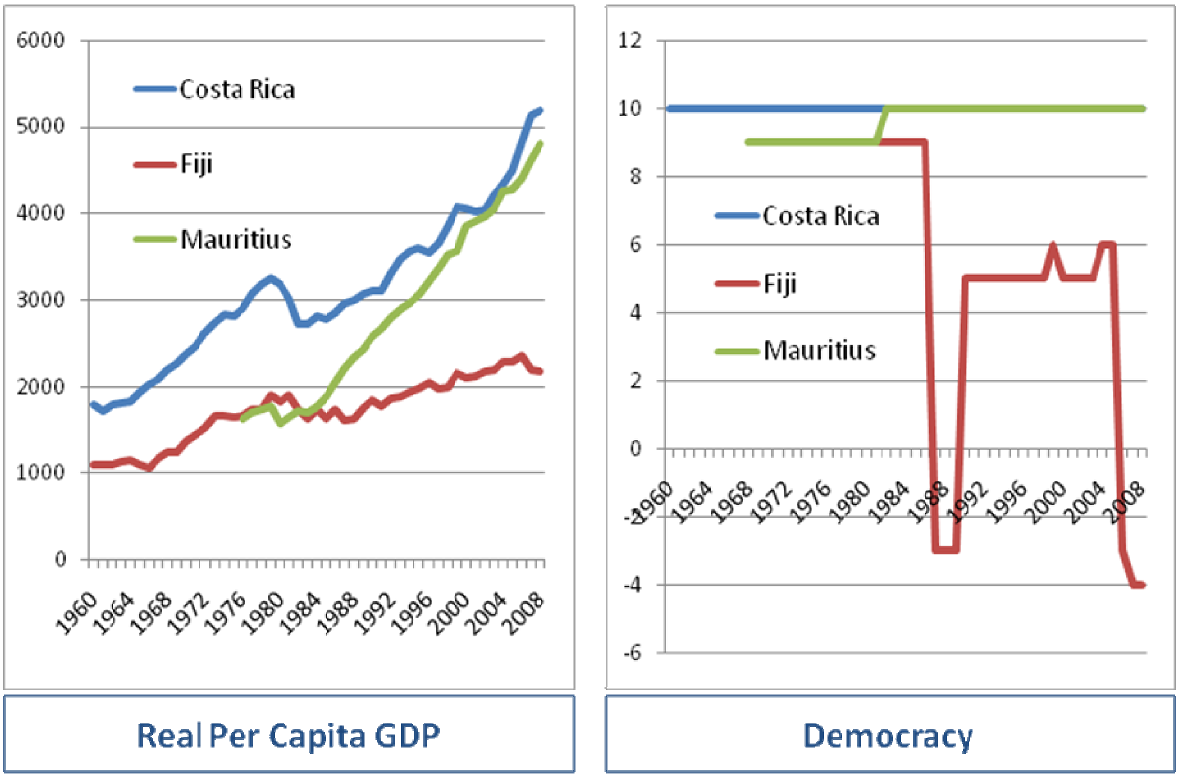

Figure 5. Chile, Peru and Zambia

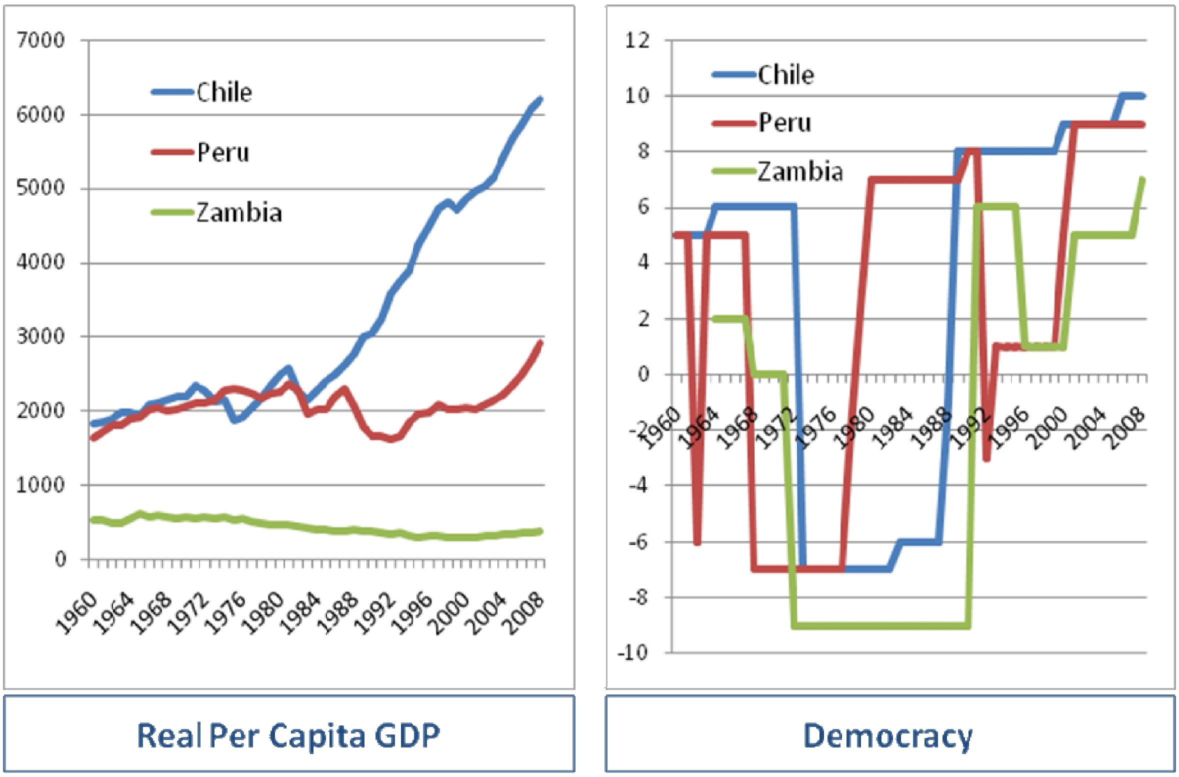

Figure 6. Ghana and Nigeria