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## The 'Resource Curse': Theory and Evidence (ARI)

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**Theme:** Mineral and fuel abundance does not determine either the political or economic trajectory of less developed countries.

**Summary:** This paper undertakes a critical survey of the 'resource curse' –the idea that mineral and fuel abundance generates poor economic performance in less developed countries–. It examines the proposition that mineral and fuel abundance generates growth-restricting forms of state intervention and extraordinarily large degrees of rent-seeking and corruption, which are generally argued to be negative in terms of the economic growth outcomes they generate. The analysis surveys the Dutch Disease, rentier state, and rent-seeking versions of the resource curse and finds they have significant shortcomings in terms of both theory and evidence. It also discusses particular growth strategies that have been effective in producing long-run economic growth in mineral- and fuel-abundant developing countries.

### **Analysis:**

#### *Introduction*

One of the more influential ideas in recent development discourse and policy is the so-called 'resource curse'. The big idea behind the 'resource curse' is that mineral and fuel abundance in less developed countries (LDCs) tends to generate negative developmental outcomes, including poor economic performance, growth collapses, high levels of corruption, ineffective governance and greater political violence. Natural resources, for most poor countries, are deemed to be more of a 'curse' than a 'blessing'.

In terms of intellectual history, this negative view of mineral and fuel abundance goes against much of the earlier thinking on the subject. Many analysts suggested a historically positive association of natural resource abundance and industrial growth in many now advanced countries. For instance, the 'staple thesis' demonstrated that growth in backward areas commonly began through the initial stimuli that primary product exports brought in terms of attracting capital and labour and inducing a more diversified production structure (Innis 1930; Watkins 1963). Also, natural resource rents, to the extent they are appropriated by state governments, can relax common resource constraints to growth –namely the savings, foreign exchange and fiscal constraints (Gelb & Associates, 1988, p. 17-18)–.<sup>1</sup>

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<sup>1</sup> Findlay & Lundahl (1999) find a generally growth-enhancing role of natural resource-rich countries in the period 1870-1914.

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This paper provides a critical survey of the theory and evidence with respect to some of the main versions of the 'resource curse'. It focuses on the extent to which mineral abundance affects economic performance.<sup>2</sup> It suggests some of the reasons why much of the evidence is inconclusive.<sup>3</sup> It also provides some policy implications that emerge from the discussion.

#### *Variants of the Resource Curse Argument*

(1) The Dutch Disease Model: the economic concept of Dutch Disease refers to the potential negative effects natural-resource windfalls and accompanying appreciations of exchange rates can have for the rest of the economy. One of the potential dangers of oil booms, for example, is that exchange-rate appreciation renders the non-oil-tradeable sectors such as manufacturing less competitive and thus can generate de-industrialisation.

The logic of the simple Dutch Disease theories can be described as follows. In an economy in full employment equilibrium, a permanent increase in the inflow of external funds results in a change in relative prices in favour of non-traded goods (services and construction) and against non-oil traded goods (manufacturing and agriculture), leading to the crowding out of non-oil tradeables by non-tradeables. That is, an appreciation of the exchange rate leads to a decline in the competitiveness, and hence production and employment, of the traded-goods sector.

The mechanism through which this change takes place follows directly from the model's assumptions of full employment equilibrium and static technology. With these assumptions, the external funds (from an oil boom) can be translated into real domestic expenditure only if the flow of imports increases. However, since non-traded goods cannot be imported easily (or only at prohibitive costs), a relative contraction of the traded-goods sector is inevitable, otherwise the resources needed to enhance the growth of the non-traded sector would not be available. Thus, the model predicts that de-industrialisation is the inevitable structural change that occurs as a result of oil booms.<sup>4</sup> A second mechanism through which manufacturing can become less competitive in this model is through the increase in manufacturing wage rates that result from increases in aggregate demand for labour that the oil booms can generate. In the short-run, when productivity levels are fixed, unit labour costs in manufacturing rise, which can, in the absence of compensating policies, lead to a loss in manufacturing competitiveness.

The association of 'de-industrialisation' as a 'disease' stems from the unique growth-enhancing characteristics the manufacturing sector can potentially embody (Kaldor, 1967). The potential dynamism that manufacturing can generate, however, opens up an important role for policy in affecting the growth outcomes of oil booms. In the simple Dutch Disease model, technology is assumed to be given (ie, it is a 'blueprint'), which means that additional foreign exchange is not of particular relevance from the point of view of economic growth. However, when a late-developing country faces a technological gap, additional export revenues, if channelled by an appropriate industrial policy, can play an

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<sup>2</sup> The issue of whether mineral abundance generates greater political violence has been treated elsewhere (see Ross, 2004; Di John, 2007).

<sup>3</sup> Sachs & Warner (1995) find, in the period 1971-89, that mineral exporters, on average, grew more slowly than the average growth of non-mineral exporters. However, Lederman & Maloney (2007), using the Sachs & Warner data, find that there is not robust evidence to suggest that resource abundance negatively affects growth.

<sup>4</sup> Dutch Disease models are summarised in Neary & van Wijnbergen (1986).

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important part since the additional foreign exchange can accelerate the process of importing advanced technology and the machines that embody them. Additionally, if the industrial strategy promotes 'learning', additional revenues can theoretically accelerate the growth process. For instance, during the boom, the government could promote industry by channelling resources to toward that sector through protection, subsidies, financial incentives and investments in infrastructure. This can serve to modernise the manufacturing capital stock which in turn can improve productivity.

As a result, structural change against non-oil tradeables, such as manufacturing, is not inevitable; rather, the outcomes resource booms depend on state policy responses. Neary & van Wijnbergen note: 'In so far as one general conclusion can be drawn [from our collection of empirical studies] it is that a country's economic performance following a resource boom depends to a considerable extent on the policies followed by its government... [E]ven small economies have considerable influence over their own economic performance'.<sup>5</sup> Evidence from Venezuela, for instance, suggests that policy responses (such as industrial policy and exchange-rate management) determine how oil booms affect the growth prospects of the economy.<sup>6</sup> What the Dutch Disease literature does not address is why growth-enhancing policies are chosen in some contexts and not others and, more importantly, why some leaders do not correct ineffective policies.

(2) Models of the Rentier State: rentier-state models move beyond economic models of the resource curse, such as Dutch Disease models, by attempting to endogenise policy-making and institutional formation. In particular, they attempt to explain why state decision-makers in natural resource-rich economies create and maintain growth-restricting policies.<sup>7</sup> These models are part of a growing trend of reviving the 'staples thesis' –the notion that natural factors endowments or technology shape the relations of production, or institutional evolution of a society–.<sup>8</sup>

In the rentier-state model, oil and mineral abundance is assumed to generate growth-restricting state intervention and extraordinarily large degrees of rent-seeking, where these rent-seeking contests are assumed to be uniformly negative in terms of the developmental outcomes they generate. There are several important propositions that are developed within this framework. First, the existence of a higher level of mineral rents increases rent-seeking and corruption relative to economies with lower mineral abundance. Secondly, increases in rent-seeking and corruption generate lower growth. This is in part due to the fact that with corrupt transactions, the need to keep bribes secret reduces the security of property rights, which lowers investment in long-gestating projects. Third, oil rents provide a sufficient fiscal base of the state and thus reduce the necessity of the state to tax citizens. This in turn reduces political bargaining between state and interest groups, which makes governance more arbitrary, paternalistic and even predatory. Fourth, the absence of incentives to tax internally weakens the administrative reach of the state, which results in lower levels of state authority, capacity and legitimacy to intervene in the economy.

Supporters of the rentier-state model suggest that reducing a state's 'unearned income' from mineral rents will enhance the prospects of peace. Policy recommendations include advocating greater transparency in the payments made by multinationals in extractive

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<sup>5</sup> Neary & van Wijnbergen (1986, p. 10-11).

<sup>6</sup> Di John (2009, p. 35-76).

<sup>7</sup> For example, see Mahdavy (1970), Karl (1997) and Auty (2007).

<sup>8</sup> For example, see Engerman & Sokoloff (1997).

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industries to host governments in poor countries (Center for Global Development, 2004, p. 56-7), or avoiding extractive industries altogether and concentrating efforts in order to diversify mineral-dominant economies towards agriculture and manufacturing (Ross, 2001).

Modern theories of rent-seeking and corruption form a substantial part of the intellectual foundation of the rentier-state model. The basic idea behind these models is that there are substantial costs to the workings of an economy when the allocation of resources is channelled primarily through state leaders, who have discretionary authority, rather than through bargains between private economic agents.<sup>9</sup> In oil economies, because most revenues originate in the central government, the level of state discretion in allocating resources and regulating the economy tend to be higher than in most non-oil economies. In the rentier-state model, the predominant view is that oil economies are subject to a higher level of rent-seeking and corruption in comparison with non-mineral abundant economies.

#### *Critiques of Rent-seeking Theory*

The extent to which mineral economies generate both higher rent-seeking costs and less developmental rent-seeking outcomes is ultimately an empirical issue. There are several pieces of evidence to suggest that large inflows of resources (whether through oil or aid) lead to a worsening in economic performance. Let us consider these issues in more detail.

First, the rentier-state theory cannot explain the long-run variation and change in growth of mineral abundant economies (eg, Botswana, Malaysia, Venezuela and Nigeria). Secondly, the variation and change in economic growth in non-mineral rich economies is not well explained (eg, India, China, Tanzania and Malawi) either. Third, recent growth accelerations in aid-dependent economies is not well explained (eg, Mozambique, Uganda, Tanzania and Ghana). The fact that aid-dependent economies may be pursuing more liberal economic policies demonstrates that policy matters more than levels of rents in the economy, although there is considerable debate as to whether liberal economic policies are best for less-developed countries.

In terms of the relationship between corruption and growth, there is also little support for the rent-seeking variant of the 'resource curse'. Table 1 suggests that mineral-abundance economies do not appear to be more corrupt than non-mineral abundant economies. Moreover, the evidence in the Table suggests that corruption rates are indeterminate with respect to long-run growth.

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<sup>9</sup> For a critical survey of rent-seeking theory, see Khan & Jomo (2000).

**Table 1. Growth and Corruption in Mineral-Abundant and Non-Mineral Abundant Developing Countries, 1965-2000**

<b>1965-1990</b>	<b>1. Mineral-Abundant Developing Countries (2)</b>	<b>2. Non-Mineral-Abundant Developing Countries (2)</b>
	(13 observations)	(19 observations)
<b>Median GDP Growth Rate 1965-90</b> (Range)	<b>4.3</b> (2.5 - 12.4)	<b>5.6</b> (1.5 - 9.5)
<b>Median Corruption Index 1980-85 (1)</b> (Range)	<b>3.9</b> (0.2 - 6.5)	<b>3.6</b> (0.7 - 8.8)
<b>1990-2000</b>	<b>1. Mineral-Abundant Developing Countries</b>	<b>2. Non-Mineral-Abundant Developing Countries</b>
	(13 observations)	(19 observations)
<b>Median GDP Growth Rate 1990-2000</b> (Range)	<b>4.0</b> (1.6 - 7.0)	<b>3.7</b> (-0.6 - 10.3)
<b>Median Corruption Index 1996</b> (Range)	<b>3.3</b> (0.7 - 6.8)	<b>3.2</b> (1.0 - 5.0)

(1) A corruption index of 10 indicates minimum corruption, an index of 0 indicates maximum corruption.

(2) Mineral-abundant is defined as those economies where mineral/fuel exports in total exports in 1980 is equal or greater to 35%; non-mineral abundant is defined as those economies where mineral/fuel exports in total exports is less than 35% in 1980.

Sources: World Bank, *World Development Indicators*; Subjective Corruption indices from Transparency International.

In the period 1965-90 the median annual average growth of the non-mineral abundant developing economies (5.4%) did outpace the mineral-abundant economies (4.3%). However, in the same period, the median corruption rate of the non-mineral dominant economies was slightly higher than the mineral-dominant economies. In the period 1990-2000 the mineral-dominant economies grew slightly faster and were slightly less corrupt than the non-mineral dominant economies. None of this evidence provides much support for the rentier-state and rent-seeking models.

### *Critiques of Rentier-State Theory*

There are several assumptions of the rentier-state argument as developed by Terry Karl that drive the results. First, rulers are assumed to 'own' the natural resources. That is, they are assigned the 'property rights' over resources. How rulers appropriate and maintain power is not analysed. By assigning 'rights' to leaders, the whole problematic of how to manage 'common pool resources' is neglected, when the real problem of common pool resources is, in fact, analysing the processes through which rights are assigned, enforced, maintained and changed (Ostrom, 1990). In other words, it is assumed that there are no collective actors within the society that can impose some domestic conditionality on how those who occupy the state exercise their power.

Secondly, leaders are assumed to have predatory as opposed to developmental aims. The neglect of the political processes through which a leader appropriates power limits our understanding of the motivations of state leaders. The state is not a thing, such as 'a predator' or 'rent-seeking maximiser', but a set of social relations. Why a particular coalition in power will not use oil revenues to diversify production is not addressed.



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Third, by choosing oil booms as the point in which state formation takes place in late-developing oil economies, Karl's model is subject to selection bias. By definition, most countries that do not have a diversified agricultural and manufacturing base become mineral dependent. In historical terms, almost all countries began as mineral-dominant economies. For instance, the US, Canada, Norway, Sweden, the Netherlands, Australia and Malaysia were, in earlier stages of development, more mineral-dominant, less-diversified economies. Not only that, natural resources generally played a growth-enhancing role in stimulating capital accumulation and growth throughout the now advanced countries in the period 1870-1914 (Findlay & Lundhal, 1999).<sup>10</sup>

Finally, rentier-state theorists do not examine the possibility that mineral abundance can be central to the development of manufacturing industry in particular. For instance, Wright & Czelusta (2007) examine how and why technological development and collective learning positively affected the *development of natural resources* in the US economy. They demonstrate how large-scale investments in exploration, transportation, geological knowledge and the technologies of mineral extraction, refining and utilisation in natural resources contributed to long-run economic growth and industrialisation in the US. Other authors explore how the development of natural resources led to increasingly high-tech industrial production in Sweden and Finland during the 19<sup>th</sup> and 20<sup>th</sup> centuries.<sup>11</sup> The key policy question to ask is why natural-resource revenues are used in ways that sustain economic growth and diversification in some countries and not in others. Lack of economic diversification and poor economic growth are why economies are mineral dependent. If that is the case, then it makes sense to ask why, for example, political conflicts or past economic policies prevented growth in some mineral dependent economies and not in others.

#### *Addressing the Challenges of Growth in Mineral-Abundant Countries: The Role of Dual-Track Development Strategies*

Since the role of the government is generally more pronounced in oil and mineral-rich less developed countries, there is likely to be significant amounts of pressure for patronage among contending groups and classes. Much of the rent-seeking indeed leads to the creation of ineffective public spending and subsidisation. However, the distribution of rents and privileges, especially to elites, is often central to the maintenance of political stability (North *et al.*, 2007). In such cases, a trade-off between economic growth and political stability can emerge since those with access to state resources may be politically powerful but not necessarily effective, risk-taking and dynamic producers.

In this context, the introduction of a dual-track growth strategy may be promising. The basic idea of this strategy is to promote an emerging dynamic sector run (Track 1) where competition and risk-taking are promoted while maintaining the bulk of the protected and/or distorted sectors, often in protected agriculture and industrial sectors with aim of reducing social tensions and maintaining political stability (Track 2). Examples of Track 1 strategies are export-processing zones and industrial parks. Such a dual-track strategy postpones confrontation with established rent-seekers while the dynamic sector drives competitive diversification of the economy and also builds a pro-reform political constituency. The main challenge of this strategy is to insulate/ring-fence the Track 1 sector from political and clientelist predation and capture. In general, this strategy can be seen as a transitional path to more growth-enhancing institutional reforms.

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<sup>10</sup> The problem of selection bias renders many of the econometric studies, suggesting a positive correlation between resource abundance and poor economic growth, spurious (Brunnschweiler, 2008).

<sup>11</sup> Blomström & Kokko (2007).

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There are a range of countries that have attempted dual-track-strategies. These include Malaysia, Indonesia, China and Mauritius.<sup>12</sup> What is noteworthy in all these cases is the existence of strong national political parties and organisations underpinning executive authority. Strong, disciplined national parties not only enable the state to centralise patronage and make credible bargains and side-payments to contending groups, they also provide a focal point around which collective action and lobbying can occur in a relatively predictable manner. They also are central to providing the institutional mechanisms for distributing patronage to regional elites and to important political constituencies in ways that either prevent challenges to authority and/or maintain cohesion of the ruling coalition. Moreover, because national parties need to build cross-ethnic and cross-regional alliances, which reduces the possibilities that significant politically-destabilising horizontal inequalities will develop. Thus, one important threshold for this strategy to work in mineral-abundant economies would appear be the existence and/or construction of viable national political parties.

**Conclusion:** The proposition that oil abundance induces extraordinary corruption, rent-seeking and centralised interventionism and that these processes are necessarily productivity- and growth-restricting is not supported by comparative or historical evidence. Similar levels of state centralisation and corruption coincided with cycles of growth and stagnation in mineral and fuel-dependent economies. Explaining governance and state capacity in such economies needs to be consistent with this basic evidence. The extent to which mineral and fuel abundance generate developmental outcomes depends largely on the nature of the state and politics as well as the structure of ownership in the export sector, all of which are neglected in much of the research-curse literature. Much more research is needed to examine why some economies are able to effectively use mineral and fuel rents in productive ways. A further exploration of which threshold effects are decisive in affecting the development path of resource-rich developing countries may provide some useful policy insights.

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<sup>12</sup> On Mauritius, see Findlay & Wellisz (1993). On Malaysia, see Bruton (1992). On China, see Qian (2003). On Indonesia, see Flatters & Jenkins (1986).

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