The Curse of Natural Resources

By

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What it mainly tried to explain

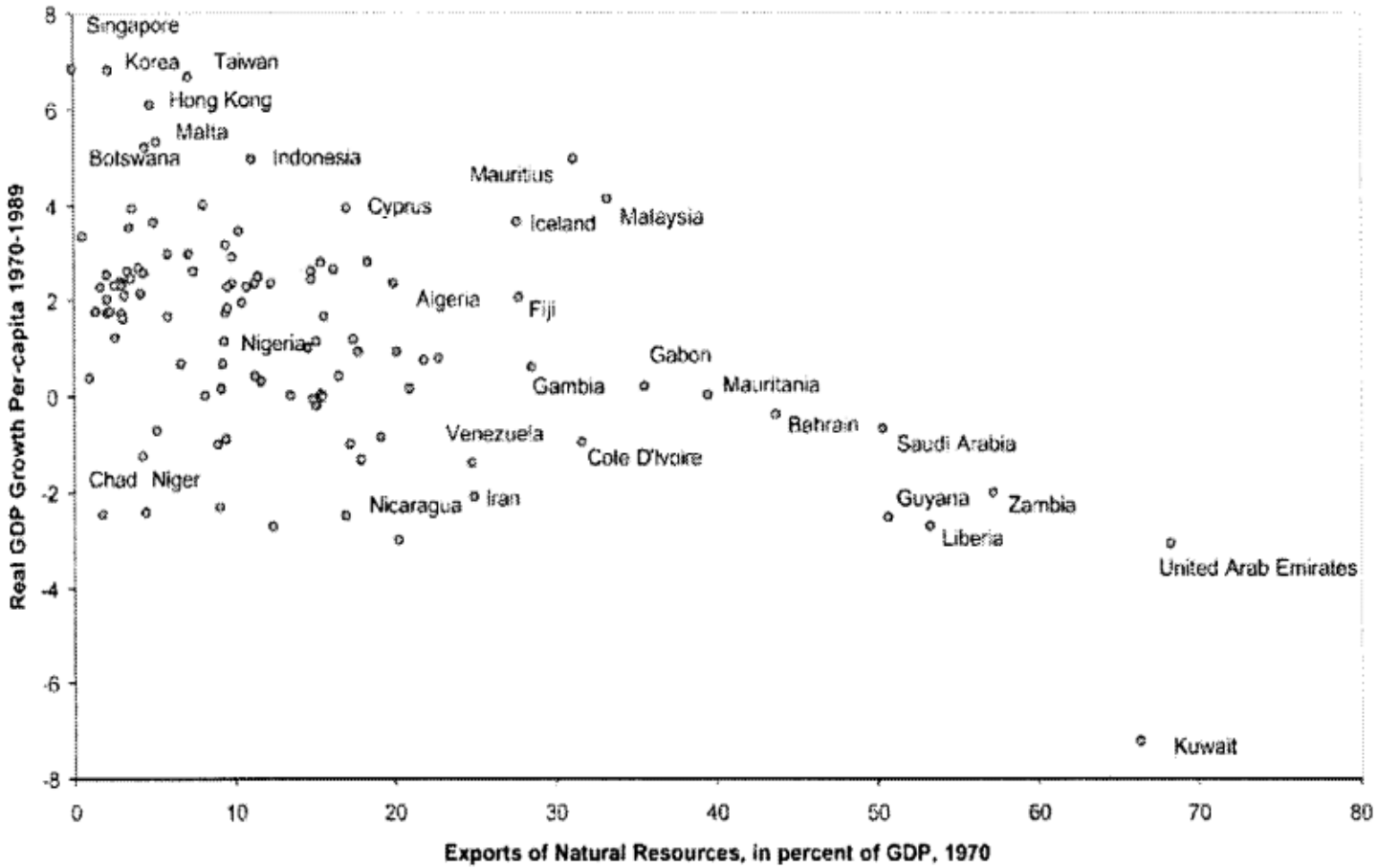
- Does the curse really exist?
- If so, why?

Does the curse really exist?

- Empirical support for the curse of natural resources is quite strong.
  - First, causal observation suggests that there is virtually no overlap in the set of countries that have large natural resource endowments–and the set of countries that have high level of GDP.
  - Second, causal observation also confirms that extremly resource-abundant countries such as the Oil States in the Gulf, or Nigeria, or Mexico and Venezuela, have not experienced sustained rapid economic growth.
  - In addition, empirical growth studies tend to confirm this causal evidence. The finding in repeated regressions using growth data from the post-war period is that high resource intensity tends to correlate with slow growth.

Does the curse really exist?

- A growth evidence.



Does the curse really exist?

- There is a significantly negative relationship between economic growth and resource abundance.
- The exceptions to this general tendency were Malaysia, Mauritius and Iceland.

Arguements against this statement

- It is possible that the negative association is a by-product of a subtle bias.
- Suppose also that countries were randomly endowed with natural resources in a way that was correlated with their geography. If we let time pass in such a world, eventually the countries with favorable geographic conditions would have high income, since they would have been growing for a while.

Arguements against this statement

- Because of their high income, they would appear to have low shares of natural resources in the economy–not because they inherently poor in natural resources, but because the rest of the economy would have been growing.
- On the other hand, the poor-geography countires would still appear to be high-natural resource economies, since the rest of the economy would not have been growing.
- Now suppose we were to measure growth and natural resource as a share of GDP after this process had been unfolding for a while. We should tend to find a negative association between growth and natural resources as a share of the economy.

Two ways to test for this possibility

- If it is hard to observe the omitted variables affecting growth, one solution is simply to control for previous growth rates in the regressions.
- If instead it is not hard to observe the omitted geography variables, the second solution is simply to control for them in the regression.

Two ways to test for this possibility

- Sachs and Warner(1997) looked at the first of these tests and found no evidence that controlling for the previous decade's growth rate altered the negative natural resource effect.

Table 1
Regression of economic growth on natural resource abundance, 1970–1990, controlling for growth in the 1960s[a]

Log GDP 1970	− 1.8
	(8.87)
Natural resource abundance	− 9.9
	(6.50)
OPEN	1.3
	(3.2)
Log investment	0.8
	(2.4)
Rule of law	0.4
	(3.8)
Terms of trade change	0.1
	(2.1)
Growth 1960–1969	0.02
	(0.2)
R^2	76%
N	69

[a] *Source*: Sachs and Warner (1997).

Two ways to test for this possibility

- Table 2 shows additional evidence on the second of the tests: controlling for geography variables directly.

Table 2
Growth regressions with the natural resource variable and the geography and climate variables.
Dependent variable: growth per-capita 1970–1989

	(1)	(2)	(3)	(4)	(5)[a]
Log GDP per pop '70	− 0.31	− 0.20	− 0.37	− 0.69	− 0.86
	(1.00)[b]	(0.67)	(1.19)	(2.12)[c]	(2.51)[c]
GDP70 × OPEN 1[d]	− 1.52	− 1.68	− 1.82	− 1.13	− 1.11
	(3.34)[e]	(3.72)[e]	(4.08)[e]	(2.58)[c]	(2.33)[c]
Share of years open (OPEN)	16.21	17.63	18.77	12.75	12.45
	(4.19)[c]	(4.64)[c]	(4.98)[e]	(3.44)[e]	(3.11)[e]
Natural resource abundance	− 0.05	− 0.05	− 0.04	− 0.04	− 0.03
(N.R. exports/GDP in 1970)	(4.91)[e]	(4.29)[e]	(3.44)[e]	(3.72)[e]	(2.57)[c]
% Land w/in 100 km coast	0.63				0.60
	(1.27)				(1.20)
Km to closest major port		0.00			0.00
		(0.28)			(0.14)
% Land in geographical tropics			− 0.87		− 0.64
			(1.77)		(1.23)
Falciparam malaria index, 1966				− 1.41	− 1.22
				(2.86)[e]	(2.16)[c]
Constant	3.40	2.79	4.52	7.17	8.48
	(1.42)	(1.17)	(1.79)	(2.66)[e]	(3.06)[e]
Observations	97	97	97	94	93
R^2	0.57	0.57	0.58	0.58	0.59

[a]Joint significance test for Geography Variables in regression (5): $F(4,85) = 3.04$ P-value $= 0.022$.
[b]Absolute value of t-statistics in parentheses.
[c]Significant at 5% level.
[d]GDP70 × OPEN is an interaction variable where GDP70 is the log of GDP per-capita in 1970 and OPEN is the shorter name for "share of years open" from Sachs and Warner (1995).
[e]Significant at 1% level.

Two ways to test for this possibility

- There is no clear evidence from the regressions in Table 1 and Table 2 that there was an omitted variable in our previous growth regressions that can account for the curse of natural resources.
- Controlling for previous growth rates does not eliminate the natural resource variable from the regression. And direct controls for geography and climate variables do not eliminate the natural resource variable.
- Hence, the curse of natural resource is true.

What explains the curse?

- Most current explanations for the curse have a crowding-out logic: natural resources crowd-out activity x; activity x drives growth.
- Sachs and Warner first tested the explanation that natural resources crowded-out traded manufacturing activities, traded manufacturing activities drives growth.
- The mechanism is that positive wealth shocks from the natural resource sector creates excess demand for non-traded products and drives up the non-traded prices. This in turn squeezes profits in traded manufacturing activities that use non-traded products as inputs yet sell their products on international markets at relatively fixed international prices. The decline in manufaturing slows down the growth.

What explains the curse?

- Therefore, one explanation of the resource curse is that resource abundance tended to render the export sectors uncompetitive and that as a consequence resource-abundant countries never successfully pursued export-led growth.

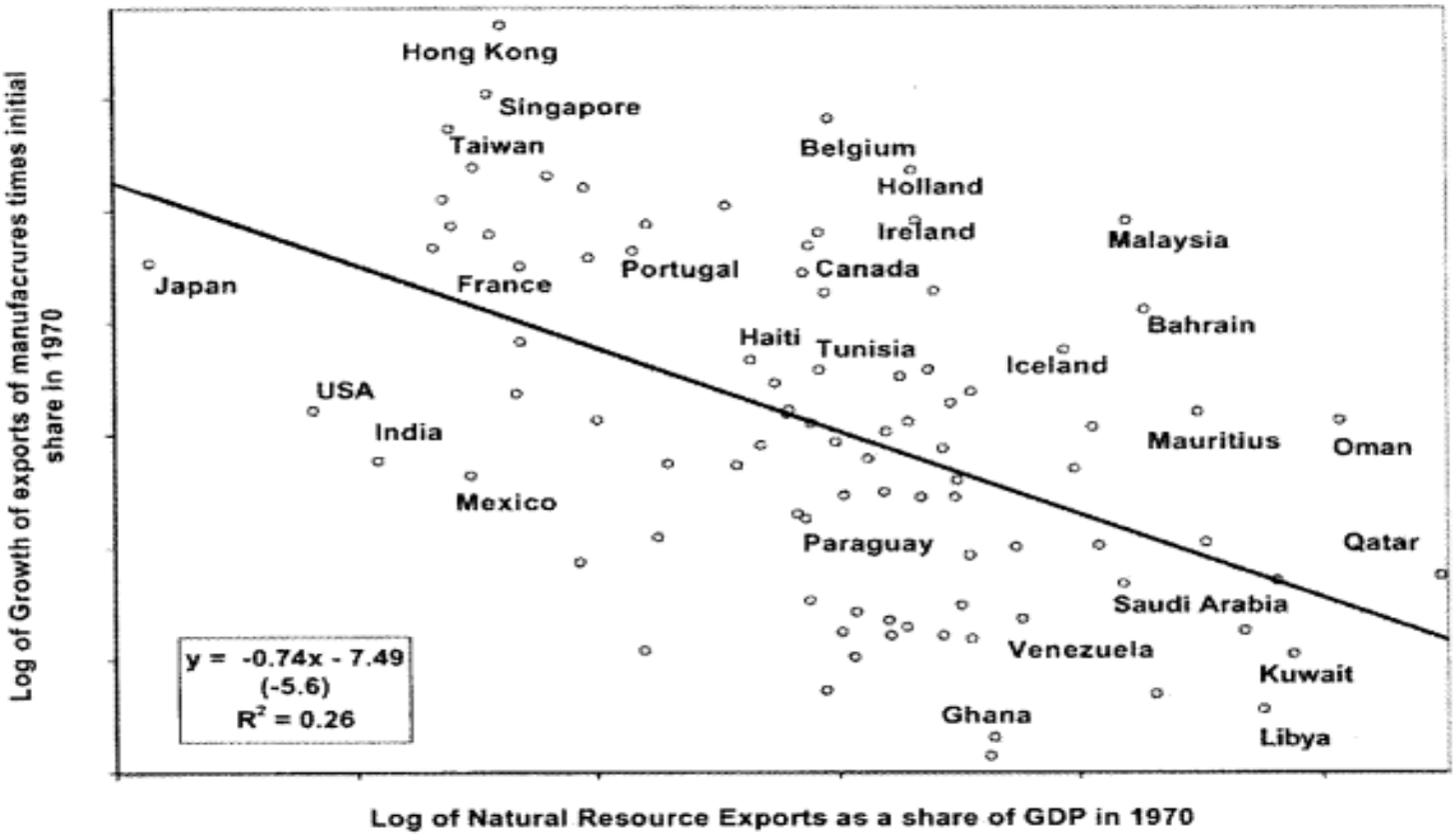


Fig. 2. Natural resource intensive economies have had *smaller* contributions from exports of manufactures to overall GDP growth.

What explains the curse?

- There is another explanation that the crowded-out activity is education, and furthermore, this logic could be extened to other variables relevant to growth.
- Natural resource abundance could crowd-out entrepreneurial activity or innovation, if wages in the natural resource sector raise high enough to encourage potential innovators and entrepreneurs to work in the resource sector. In the same vein, since natural resource rents are concentrated and easily appropriable, government officials in such countries are tempted into rent-seeking and corruption rather than pro-growth activities. Hence, these countries would experience lower entrepreneurial activities, lower innovation, poorer governments and lower growth.

What explains the curse?

- The conclusion is that, except for the direct contribution of natural resource sector itself, which, for instance, explains much of the rapid growth of Botswana, natural resource abundant countries systematically failed to achieve strong growth.

My own thinking about the curse of natural resource

- As Sachs and Warner mentioned in the paper that we have different theories of the natural resource curse is because of we lack a universally accepted theory of economic growth in general.
- In my opinion, the only thing which drives economic growth, especially in long run, is people's will of working hard. Under this proposition, the reason of resource curse must be that the abundance of natural resources caused something which harm people's will to work hard.

My own thinking about the curse of natural resource

- The logic here is that the abundance of natural resource makes the rulers could easily exploit much wealth from the economy by extractive economic institutions without people to work hard or innovations or entrepreneurial activities; the extractive economic institutions as a base lead to extractive politic institutions and then they form a vicious feedback; these extractive institutions then destroy people's will to work hard and lead to bad economic performances.
- We can easily imagine once that happens, the rulers will find that what they can mainly exploit is the natural resource sector; the economy will be more focused on the natural resource sector and institutions will be more extractive. Then, it damages people's will to work hard more. As a consequence, an even worse economic performance comes. Then, this vicious cycle continues.

Q&A

Thank you