



The evolution of the natural resource curse thesis: A critical literature survey



Ramez Abubakr Badeeb^a, Hooi Hooi Lean^{a,*}, Jeremy Clark^b

^a Economics Program, School of Social Sciences, Universiti Sains Malaysia, 11800 USM Penang, Malaysia

^b Department of Economics and Finance, University of Canterbury, New Zealand

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ABSTRACT

This paper surveys the natural resource curse. We review the mechanisms through which resource wealth might slow economic growth, and the empirical studies that test for an effect overall, or on factors associated with growth. We include more recent studies suggesting the resource curse reflects only empirical misspecification. After reflecting on this conflicting evidence, and the findings of other recent surveys, we argue the evidence that resource dependence negatively affects growth remains convincing, particularly working through factors closely associated with growth in developing countries. Recent contrarian studies demonstrate that future research should better address endogeneity of dependence measures, and expand the years of study and range of empirical methodologies used.

1. Introduction

There has been a deep belief since Adam Smith and David Ricardo that countries blessed with natural resources such as oil and gas can base their development on these resources, and use them as a key path for sustained economic growth. At the same time, the role that energy plays in development today arguably differs from the role it played in the late 19th and early 20th century in the United States, Australia and Canada. In recent decades, economists have observed that resource-rich nations, especially in Africa, Latin America and the Middle East tend to grow at a slower rate than countries with fewer natural resources. These countries are said to suffer from what Auty (1993) coined a “resource curse”. This curse refers to an inverse association between natural resource dependence and economic growth. A more specific “oil curse” has been attributed to countries whose economies are heavily reliant on oil production.

A sizable literature has thus emerged since the 1980's challenging the conventional view that natural resources are a blessing for developing countries. This literature has increased significantly over time. Economists and other social scientists have identified different causal channels by which a resource curse might operate, and different outcome variables related to economic growth that it might affect.

A number of important survey studies have attempted to summarize and evaluate the resource curse literature as it has developed,

including by Frankel (2010), Van der Ploeg (2011), and more politically focused surveys by Ross (2006) and Deacon (2011). More recent surveys include those by Gilberthorpe and Papyrakis (2015), Venables (2016) and Van der Ploeg and Poelhekke (2016). We will “survey the surveys” later in the paper once key concepts are introduced.

Our paper extends these previous surveys by including more recent studies not found elsewhere, and focusing on the evolution of economists' thinking about the resource curse, including recent critiques of its very existence. Overall, we argue that the lack of consensus in the literature, obvious counter examples, and recent methodological critiques caution against viewing the resource curse as inevitable. Nonetheless, the sheer weight of disparate studies finding poor growth records of most countries with high resource dependence leads us to argue that the resource curse has not been invalidated. Rather, future studies are required that more carefully address issues of endogeneity in measures of resource dependence in production and export, clearly distinguishing it from measures of resource abundance. Future studies also need to better vary the years of data studied, and the empirical methodologies used.

The rest of this paper is organized as follows: the basic resource curse thesis is rehearsed in Section 2. In Section 3 we provide an overview of the evolution of the resource curse thesis. The mechanisms through which the curse is thought to operate are discussed in Section

* Corresponding author.

E-mail address: hooilean@usm.my (H.H. Lean).

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4. Section 5 surveys empirical studies testing for negative effects of natural resources on economic growth, as well as on broader indicators related to economic growth. Section 5 also surveys recent studies providing methodological critiques of the thesis. Section 6 summarizes the existing surveys of the resource curse with their differing emphases or conceptual frameworks. Section 7 concludes with suggestions for future research.

2. Natural resources and their mixed legacy

To begin, it is useful to clarify with the Oxford Dictionary that the term “natural resources” refers broadly to natural assets such as materials, minerals, forests, water, and fertile land that occur in nature and can be used for economic gain. Some natural assets such as oil, gas and minerals can be depleted or exhausted. These non-renewable assets have no alternative use that can yield a similar marginal revenue product. In contrast, fertile land can be used to cultivate alternate crops. In practice, the resource curse thesis tends to focus on non-renewable natural resources following the lead of case studies first used to illustrate it.¹

To understand the proposed curse, we first need to distinguish how resource wealth differs from other types of wealth. Humphreys et al. (2007) identify two key differences. First, unlike other resources, natural resources (i.e., oil, gas and minerals) do not need to be produced, but only extracted. Because the generation of natural resource wealth is not a result of production, it can occur relatively independently of other economic processes and does little to create employment. For example, the oil and gas sectors are among the world's most capital-intensive industries. Thus, this sector creates fewer jobs per unit of capital invested, and the skills required for these jobs usually do not fit the profile of a country's unemployed (Karl, 2007). The second key difference of natural resource wealth identified by Humphreys et al. stems from the fact that many are non-renewable, particularly oil and gas. They point out (2007, p.4):

“From an economic aspect, [natural resources] are thus less like a source of income and more like an asset.”

In principle, such assets should offer three large benefits for poor economies. First, the income stream from resource extraction can boost real living standards by financing higher levels of public and private consumption. Second, resource extraction can finance higher levels of investment, both directly out of natural resource income, and indirectly from borrowing made possible by that income. Third, since resource income typically accrues largely to the public sector, and indeed to the public budget, it can obviate a huge barrier to development: the lack of fiscal resources needed to finance core public goods, including infrastructure (Sachs, 2007).

However, for some decades, it has been observed that the possession of natural resources is neither necessary nor sufficient to confer economic success. Many countries in Africa and the Middle East are rich in oil and other natural resources, and yet their people continue to experience low per capita income and a low quality of life. As mentioned, this puzzling phenomenon was labelled a “natural resource curse” by Auty (1993). The term refers to the paradox that countries endowed with natural resources such as oil, natural gas, minerals etc. tend to have lower economic growth and worse development outcomes than countries with fewer natural resources. Angola, Congo, Nigeria, Venezuela and some Middle Eastern countries are good instances of natural resource-based economies that suffer low or negative GDP growth and widespread poverty. In contrast, East Asian economies such as Japan, Korea, Taiwan, Singapore and Hong Kong have

achieved high standards of living despite having few exportable natural resources. Finally, it is worth mentioning that even the most convinced resource curse scholars are not making the case that states rich in natural resources would be better off without them. Instead, the resource curse literature only attempts to explain why many resource-curse states experience failure in development (Karl, 2005).

3. The evolution of the resource curse hypothesis

As already observed, economists have held two divergent perspectives on the role of natural resources in an economy. The more positive perspective can be traced back to Adam Smith and David Ricardo, who asserted that natural resources play a beneficial role in the process of economic development. Many postwar economists supported this view well into the 1970s (see for example Viner, 1952; Rostow, 1961). In 1961, Walter Rostow summarized this popular belief by arguing that natural resource endowments would enable developing countries to make the crucial transition from under-development to industrial take-off, just as they had done for countries such as Australia, the United States, and Britain. A consensus view held that natural resources would facilitate industrial development, create markets and encourage investment.

Although there was some opposition to this conventional wisdom (see Singer, 1950; Prebisch, 1959; Nankani, 1979), the optimistic view prevailed until the early 1980's. At this time, the so-called Dutch disease – named after the decline of Dutch manufacturing after the discovery of natural gas at Groningen – emerged to pave the way for the second more pessimistic perspective (see Corden and Neary, 1982; Corden, 1984; Neary and Wijnbergen, 1986).

The Dutch disease (to be explained shortly) can be considered an immediate predecessor of the resource curse thesis. In 1988, Alan Gelb first analyzed the economic effects of oil rents in his book *Oil Windfalls: Blessing or Curse*. Through his descriptive analysis, Gelb (1988) established a resource curse thesis. He found that oil economies experienced a more serious deterioration in the efficiency of their domestic capital formation during the boom period of 1971–1983 than did non-oil economies. Gelb argued that the cost of using oil windfalls can offset the gains from the windfalls themselves. Following Gelb, Richard Auty used the term “resource curse” to describe how countries rich in natural resources seemed unable to use that wealth to boost their economies, and how these countries had lower economic growth than countries without natural resources. In analyzing oil-producing countries in particular, Auty like Gelb examined the industrial policies implemented by these countries and their consequences. Auty also stressed the volatile nature of mineral revenues, and characterized the mining sector as having enclave tendencies. He showed that governments of mineral-rich countries tended to collect low withholding revenues because foreign-owned mining companies repatriated their earnings overseas.

Inspired by these findings and arguments, Jeffery Sachs and Andrew Warner launched a series of cross sectional studies (Sachs and Warner; 1995, 1997, 1999, 2001). The purpose of these works was to test empirically the existence of a negative relationship between natural resource dependence and economic growth. Sachs and Warner (1995) arguably produced the first scholarly work confirming the adverse effects of resource dependence based on empirical evidence. Following Sachs and Warner's empirical studies, other scholars found the same results using related quantitative techniques and larger data sets.

After 2001, the resource curse literature incorporated and extended the works of an Icelandic economist, Thorvaldur Gylfason (Gylfason, 2001, 2006; and Gylfason and Zoega, 2006). Gylfason focused attention on broader channels through which natural resource dependence could be affecting sustained economic growth: savings, investment and human capital formation. This focus is currently dominating the resource curse literature, in addition to a continued stream of studies

¹ Manzano and Rigobon (2001) find empirically that the curse does not exist for other kind of resources; its effect seemed largely through minerals and oil (see also: Leite and Weidmann, 1999; Isham et al., 2005; Bulte et al., 2005).

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