



Original research article

## How vulnerable are countries to resource curse?: A multidimensional assessment



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### ABSTRACT

This study aims to construct a composite index for measuring the vulnerability to resource curse in selected resource-rich countries through an analysis of the diverse factors, ranging from economic to governmental, social and political, that affect the resource curse phenomenon and its impacts. The proposed Resource Curse Vulnerability Index (RCVI) is based on 9 sub-indicators, namely government effectiveness, voice and accountability, political stability, rule of law, natural resources rent, GDP growth, human development level, transparency level and state fragility index. We perform the calculations and present the RCVI values of 55 countries in the time interval from 2005 to 2015. This study also provides an analysis of the RCVI values and rankings for the countries over the associated time interval. These results point to a clustering of the countries: A number of countries can be identified as low-RCVI countries that are principally not vulnerable to the resource curse, whereas a number of other countries are high-RCVI countries who suffer heavily from the resource curse. The more interesting group is the medium-RCVI countries that share geographical and cultural aspects with high-RCVI countries, however, have achieved substantially better performances, by taking appropriate steps to address their internal stability as well as economic situations.

### 1. Introduction

Currently, there is a growing body of literature concerning ‘the resource curse’ theory, which aims to explain the phenomenon, and how resource curse affects resource abundant countries (such as [1–9]). The term ‘resource curse’ was initially used by Auty [10], who aimed to describe the correlation between resource abundance and economic variables for resource-rich countries. Ross [11] attempted to explain why resource-rich countries could not fully utilize their energy abundance to benefit their economies. Sachs and Warner [5] proposed the term, “resource area” and were the first to establish a strong correlation between resource abundance and economic growth. The study used the “Dutch Disease” model to analyse the resource curse effect.

A newspaper, the Economics, introduced the Dutch Disease model in 1977. This term was used to explain the decrease in manufacturing sector volume, and revenues in the Netherlands, in the era following the discovery of new natural gas fields in 1959. Later, Corden and Neary [12] developed the Dutch Disease concept into an economic model, which based on three sectors: the natural resources sector, agriculture and manufacturing (non-resource tradable sector), and non-tradable

sector with non-tradable services and construction [13].

Majority of the earlier studies in this area focused on the direct relationship between resource curse and economy. These scholars mainly focus on economic data to identify or explain resource curse. The most important and most cited research regarding the effects of resource curse on economic dimensions was authored by Sachs and Warner [5,14,15]. The main proposition of this line of research was the expectation that resource curse would cause poor economic growth in the countries with large amounts of natural resources [5]. In other studies, the authors also claim that countries with abundant natural resources will experience slow-paced economic growth as compared to resource-poor countries [15]. Put simply, as Sachs and Warner [15] argued, the resource curse or the curse of natural resources is “the observation that countries rich in natural resources tend to perform badly”.

More recent studies have provided broader perspectives on the mechanisms of the resource curse concept. These studies associate resource curse with a set of social and political factors, in addition to the initial economy oriented framework. That is, countries, with substantial mineral or hydrocarbon resources could show correspondingly

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substantial rates of destitution, inequality, deteriorating ecological quality, instroke corruption, and even expanded recurrence of conflict and war [16]. This viewpoint has recently received greater acceptance. According to NRG (Natural Resource Government Institute), resource-rich countries are more open to authoritarianism and unstable economy as compared to their fossil – fuel poor neighbours [17]. Governments may misuse abundant resources in order to maintain power by allocating resources in their favour. With resource abundance, governments that are already authoritarian, or a dominant ruler, may seek for ways to enhance their popularity, practise oppressive policies against opposition potentially increasing political instability, conflict, even leading to civil war [18].

Clearly, not all countries are affected by the resource curse threat in the same way. The Norwegian economy performs well despite its high level of dependence on oil prices. In resource-rich countries, exports of natural resources typically have significant contributions to the economy. For that reason, if economies are not structurally strong, any fluctuations in the resource prices and markets are liable to create economic instability. In Norway, a considerable number of enterprises rely on petroleum-related business [19]. However, even with this high share of oil-related sectors in the economy, Norway is unaffected by the resource curse. According to Holden [3], this is due to effective management of resources and fiscal policy of the state. Hence, this example shows that economic dimensions by themselves are not sufficient to explain and determine the level of the resource curse; other factors should be considered, such as poor resource management, the democratization level of the country, the stability of the economy, and social condition [20]. Similarly, countries with abundant resources, such as Nigeria, are prone to conflict and authoritarian rulership due to the lack of transparency regarding government income allocation [18]. According to Méon and Sekkat [21], corruption is most harmful to growth where governance is weak. Furthermore, Ross [22] argues that, in the Middle East, democratization has been hindered as a result of abundance of oil, pointing to a political driver for the resource curse.

Quality of institutions and government policies are also important indicators that scholars have recently referred to (Costa and Santos [69]; [23–25]). Parlee [8] argues that resource curse has an influence upon mismanagement of rents, the suffocation of other sectors, the dwindling of human capital, the weakening of governing institutions and social capital, and the flow of resource rents from the community and region. Keenan [26] claims that institutionalization level of a country affects the degree of influence which resource curse has on a country. The experience of Norway, on the other hand, has progressed differently. Norway has also fostered the development of other sectors, despite its abundant natural resources [27], thus decreasing the level of dependence on natural resources. This was achieved through policies aiming to diversify its economic activity [28]. Hence, by the virtue of good governance and the quality of its institutions, Norway has avoided the resource curse [29].

In contrast, Venezuela failed to develop or implement policies to provide diversification for its economy, thus could not avoid the high level of dependence on oil revenues, causing high levels of inflation and other economic problems [28]. Due to the inability to focus on other industries, these industries could not become competitive.

Noting the diverse factors, ranging from economic to governmental, social and political, that affect the resource curse phenomenon and its impacts, the main aim of this study is to construct a composite index for measuring the vulnerability to resource curse in selected countries. As well as integrating the various viewpoints from the literature, this approach introduces a new aspect, namely state fragility.

## 2. Research design and Indicator selection

This study follows the research framework demonstrated in Fig. 1. Accordingly, the indicators that would contribute to the calculation of the resource curse vulnerability index were determined through a

comprehensive and state-of-the-art literature review. In this process, around 500 sources were identified. The main keywords were used for were: “resource curse”, “oil”, “natural resources”, “economic growth”, “rent-seeking”, “corruption”, “governance”, “transparency”, “rule of law”. These sources include peer-reviewed journal articles listed under Web of Science, Scencedirect and Scopus. After an initial contextual screening, 100 articles were included in the primary analysis.

A second phase of literature review was conducted in order to refine the relevant articles, using three main criteria: (1) relevance with this study’s research topic, (2) being recent and/or ground setting, and (3) impact measured in terms of number of cites, in this case having higher than 100 cites. These criteria translated into a final representative set of 32 articles, identifying the 8 most frequently mentioned indicators for resource curse;

- 1 *Government effectiveness* (GE) refers to a high quality of public services, and civil services, who have independence from political pressures, as well as, high quality government policy formulation and implementation [30]. The related data is taken from World Bank [30].
- 2 *Voice and Accountability* (VA) refers to a country’s citizens being able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media [30]. The related data is taken from World Bank [30].
- 3 *Rule of law* (RL) defined as agents being highly confident in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence [30]. The related data is taken from World Bank [30].
- 4 *Resource rent* (RR) is defined as the share of total natural resources rent in the country’s GDP [31,32]. The related data is taken from World Bank data (2018).
- 5 *Human development level* (HDL) referred to long and healthy life, high mean and expected years of schooling and high standards of living [33]. The related data is taken from United Nations Development Programme’s Human Development Report 2016.
- 6 *Transparency* (T) shows the degree of corruption [34]. The related data is taken from Transparency International’s Corruption Perceptions Index 2016.
- 7 *Political stability* (PS) measures the political instability and/or politically motivated violence, including terrorism [30]. The related data is taken from World Bank [30].
- 8 *GDP growth rate* (GG) is a key economic indicator pertaining to the existence of resource curse. The related data is taken from World Bank’s data [31,32].

In order to construct a framework deriving from literature review as shown in Table 1.

In addition to the 8 indicators identified through the literature review, state fragility indicator is also added as the 9th indicator, allowing this study to take a broader perspective. For state fragility, the data from State Fragility Index published by Centre for Systemic Peace [60] is used. It marks each country on both effectiveness and legitimacy regarding the four performance dimensions, namely security, political, economic, and social. Accordingly, in this index, a country’s fragility is related with “its capacity to manage conflict, make and implement public policy, and deliver essential services, and its systemic resilience in maintaining system coherence, cohesion, and quality of life, responding effectively to challenges and crises, and sustaining progressive development.” [61].

## 3. Data and methodology

This paper proposes an innovative country-based composite vulnerability index for resource curse, namely Resource Curse Vulnerability Index (RCVI). The methodology is inspired by Cabalu’s

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