

Is There More to Say About the Resource Curse? A Comparative Study of Oil-Growth Nexus in Algeria, Iran and Venezuela

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Abstract

All things equal, countries that are endowed with substantial amounts of natural resources, especially oil and minerals, are usually expected to grow faster than their resource-poor counterparts. The reality has however shown that this has not been the case. In fact, with very few exceptions, resource-rich countries have experienced poor economic growth and important socio-political instability. Numerous theoretical and empirical studies have provided evidence of an inverse relationship between growth and dependence on natural resource revenues, a phenomenon known as the resource curse. This paper contributes to the large volume of the literature on this subject by comparing the experience of three oil-rich countries, namely, Algeria, Iran, and Venezuela over the 1970-2017 period. More specifically, this study addresses the following question: why did these economies, *ceteris paribus*, performed differently in terms of growth outcomes despite the fact that they initially adopted the same oil-led development model? In other words, what are the factors that could possibly explain their contrasted results in terms of economic performance? A dynamic panel data using the Generalized Method of Moments (GMM) estimator developed by Arellano and Bond (1991) is estimated. To shed some new light on the oil-growth linkages, a measure of real oil revenues developed by Gasmi and Laourari (2015) that is endogenous to these countries international trade structure is included in the model. Moreover, we control for other relevant variables, especially the egalitarian democracy index to capture the effect of institutions.

Keywords: Resource curse, Real oil revenues fluctuations, Economic growth, Algeria, Iran, Venezuela, Panel data analysis.

JEL classification: C33, O13, O43, O57, Q32

Background

Natural resources undoubtedly play an important role in the economy of many countries. The conventional wisdom is that natural resource wealth, particularly oil and minerals should stimulate economic growth. Indeed, resource deposits are considered as natural assets that can be turned into capital that would support economic development. The reality has however shown that this has been the exception rather than the rule. In fact, with very few exceptions, resource-rich countries have experienced poor economic growth and important socio-political

instability.¹ Moreover, numerous empirical studies have provided evidence of an inverse relationship between growth and dependence on natural resource revenues, a phenomenon known as the resource curse.²

A significant body of literature has grown seeking to explain the linkages between oil abundance and economic performance and, while the causes behind the resource curse are still a matter of debate, there is a consensus about the fact that the adverse relationship between oil wealth and growth is not associated with the mere existence of the natural resource itself. Oil in itself cannot foster or impede economic growth and development (Karl, 1997;2007). Instead, the oil-growth "connection" is less direct and, while the role of various specific causal mechanisms is still debated, the literature on the macroeconomic consequences of natural resources highlights several channels through which economic growth can be impeded. These include a combination of economic and political economy factors.³

Following the 1973 oil price boom, Algeria, Iran, and Venezuela have benefited from unanticipated revenue windfalls, which have been regarded by policy-makers as an opportunity to engage in a very promising oil-led development agenda. Over the 1973-1985 period, these countries heavily relied on oil revenues streams to increase public spending and borrowing levels to finance their respective development strategies. However, while the spirit of resource-led development was common amongst these countries, each country pursued a different development model. Indeed, Algeria adopted a heavy-industry led development, Iran promoted its military/defense industry, while Venezuela focused on steel and aluminum industries, and invested intensively on primary and secondary education.

The main objective of their development strategies was to create alternatives to the oil sector in order to rapidly catch-up with the high-income economies. Up until the early 1980s, these oil-exporting countries gave the impression of enjoying a degree of economic development and socio-political stability. This period was characterized by sustained levels of economic growth and significant enhancements in social welfare. However, their economic soundness was only a mirage. Indeed, the 1986 counter-shock has revealed the structural vulnerability of these countries. This sudden slump in oil revenues has impeded their ability to support employment and domestic consumption. As a consequence, the trio experienced (and still experience to a great extent) the oil curse phenomenon, i.e., important decline in their growth rates and a myriad of structural disequilibria (high inflation rates, foreign debt, and unemployment were recorded).

¹ Arguably, some countries like Canada, Botswana, and Norway have enormously benefited from their natural resources over long periods of time. Yet, other countries significantly endowed with natural resources such as Azerbaijan, Kazakhstan, and Russia have gained in terms of economic growth but only at the expense of institutional development. Still, in some other resource-rich countries such as Nigeria, Angola, and Sierra Leone, natural resources have been at the heart of violent conflicts with devastating effects on society. See Bannon and Collier (2003) and Garrett and Piccinni (2012), among others.

² See, Van der Ploeg and Poelhekke (2016), for a recent review on the resource curse literature.

³ A detailed review of these channels can be found in Badeed *et al.* (2017).

In addition to similar responses to a positive shock in oil prices, these countries also shared similar historical experiences and state transformations. More specifically, these countries exhibited weak institutional framework prior to the first oil boom of 1973. This fact considerably shaped their response to oil price/revenue shocks, and allowed their governments to expend their “destructive” economic and political influence in the country. Hence, rent seeking activities became dominant and hampered all the endeavors to engage into sound and sustainable growth process. The sharp decline in oil prices in 2014-2015 is an umpteenth reminder that oil revenues are highly volatile and influenced by external factors that are beyond the control of each country, and thus, relying on this resources as a main fuel of their economies will ultimately jeopardize all development plans and programs. This calls for the question of whether oil has been a blessing or a curse for the economic development of these countries, which we try to investigate in this paper.

Research questions and objectives

It goes without saying that much has been discussed regarding the resource paradox in oil-exporting economies. However, a very intriguing question with respect to Algeria, Iran, and Venezuela development achievements still remains and deserves some attention. Why did these economies, *ceteris paribus*, performed differently in terms of growth outcomes despite the fact that they initially adopted the same oil-led development model? In other words, what are the factors that could possibly explain their contrasted results in terms of economic performance?

These oil-rich nations have been chosen for their similarities concerning some of their basic resource-specific conditions [oil, degree of dependence and abundance per capita], their analogous socialist oil-development model, and their clear differences with regard to the intensity and dynamics of their development outcomes. Despite their common features, it might be argued that the comparison of these countries is misleading because they remain different in various aspects. Nevertheless, we believe that the chosen panel is still relevant to assess the linkages between oil revenues and economic growth within the resource curse framework. As pointed out by Karl [1997, 2007], Iran, Nigeria, Algeria, Indonesia, and Venezuela, exhibit heterogeneous characteristics except the possession of oil; yet all of them went through similar crises as a result of the oil shocks of the 1970s.

This study seeks to answer these questions relying on the resource curse literature. It does by no means claim to cover all the factors in play, since it restricts its scope to three countries over a relatively limited time span and a small set of selected variables. Nevertheless, this paper aims to broaden the existing literature on the subject in two ways. First, it introduces a new measure of oil revenues, and therefore, contributes to the debate on natural resource measurements/proxies. Indeed, many studies emphasized the importance of choosing relevant resource proxies since it directly affects the results that invalidate or confirm the

curse hypothesis. Second, it stresses out the relevance of taking into account ex ante common factors [prior to oil windfalls] in explaining ex post results [poor development performance] when undertaking cross-country comparisons.

Data and methodology

In order to investigate the dynamic relationships between real oil revenues and economic growth in the selected oil-exporting countries, this paper uses annual data that span the 1970-2017 period. The bulk of the data were obtained from the International Monetary Fund (IMF), the Organization of Economic Cooperation and Development (OECD), the World Bank (WB), the United Nations (UN), and the V-Dem database.⁴

This paper is based on a two-step empirical strategy. In the first step, and following Gasmi and Laourari (2015), each country's nominal oil revenues are adjusted by means of two indices in order to construct the real oil revenues series. The first index is an import-exponentially-weighted index that captures the effect of changes in the value of the US dollar against a basket of currencies of each country's main import partners. The second index is also based on the same weighting procedure and accounts for inflation passed through imports from these partners to each country in the panel.

In the second step, we estimate a dynamic panel data using the Generalized Method of Moments (GMM) estimator developed by Arellano and Bond (1991). More specifically, the following baseline equation is estimated:

$$Z_{it} = (y_{it}, X_{it}) = (rgdp_{it-1}, ror_{it}, inv_{it}, democ_{it})$$

The empirical literature on the oil-growth nexus points out various determinants of economic growth, which of course, include oil revenues as an explanatory variable along with a bunch of other control variables. This paper relies on this literature, and with regard to data availability and research aims, the following variables have been selected: i) the dependent variable, real GDP per capita, defined by $y_{it} = rgdp_{it}$; ii) a set of regressors, namely, initial national income ($rgdp_{it-1}$), real oil revenues (ror_{it}), investment (inv_{it}), and egalitarian democracy index ($democ_{it}$).⁵ The main advantage of this approach is that it allows to control for both individual and temporal unobserved country-specific effects. Moreover, it reduces the effect of simultaneity, reverse causality and omitted variables bias.⁶

Preliminary/expected results

The analysis of oil revenues evolution in Algeria, Iran, and Venezuela shows a persistent decrease in real terms over the 1970-2017 period that has, however, followed different patterns.

⁴ More details on these data and their sources are given in the full version of this paper.

⁵ A detailed description of the estimation strategy and robustness tests is presented in the full version of this paper.

⁶ See Manzano and Rigobon (2007) for comments and justifications.

This stems from a combination of several economic and geopolitical factors, at both country and global levels. The initial national income is included in the dynamic panel model to capture persistence in economic growth and also potentially mean reverting dynamics in economic growth. The sign is expected to be negative. The sign and significance of the coefficient associated with real oil revenues depend on whether or not these revenues have been truly beneficial to fuel each country's growth. Intuitively, a significant negative coefficient is expected as it would confirm the oil curse hypothesis. As suggested by previous studies on economic growth, a significant positive relationship between investment and growth is expected. The egalitarian democracy index is included in the model to assess the effect of the institutional framework, i.e., the role of institutions in shaping economic development in oil-exporting countries. The sign and significance of the coefficient associated with this variable rely on the extent to which institutions mitigate or worsen the oil-growth relationship. We expect a significant and negative nexus between real GDP growth and democracy in these countries.

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