



The role of financial development in the oil-growth nexus



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ABSTRACT

It is expected that possessing the natural resources could faster increases the pace of growth in natural resource endowed countries. However, history has shown that this is not the case for some resource rich countries. In the current study, hence, we assess whether more developed financial markets can channel the revenues from oil into more productive activities and thus offset the negative effects of oil abundance on growth. To this end, we adopt the common correlated effect mean group estimator to account for the high degree of heterogeneity (because of substantial cross-sectional dependence in our data) for a core sample of 63 oil-producing countries from 1980 through 2010. The empirical results show that oil abundance affects the growth rate in output based on the degree of development in financial markets. In other words, better financial development dampens the negative impact of oil abundance on economic growth.

1. Introduction

This paper aims to address the empirical question of whether financial development moderates the negative effect of natural resource abundance, in particular oil, on economic growth. History has shown that countries rich in oil and natural gas, minerals, and other non-renewable resources perform badly when compared to countries poor in natural resources. Since the late 1980s, several theories have attempted to explain this phenomenon, which is known as the resource curse.

The results of empirical studies about resource curse hypothesis are rather mixed. While some researches indicate the negative effect of resource abundance on economic growth (Bulte et al., 2005; Kronenberg, 2004; Rodriguez and Sachs, 1999), some researchers are more sceptical about the validity of the evidence obtained by previous surveys. Using the ratio of primary export in GDP as an indicator of resource abundance is mentioned to be one of the important drawbacks of previous surveys. Brunnschweiler and Bulte (2008) argue that this indicator is a measure for “resource dependence” rather than “resource abundance”. They suggest using the indicator for introducing resource abundance in the growth model that reflects the stock measure rather than the flow measure of natural resource. Wright and Czelusta (2004) also are among those who emphasize that the relative size of natural resource export is not a suitable indicator for resource abundance and it merely shows the comparative advantage in resources not abundance of them.

Another drawback in regard to the share of primary exports in GDP as a measure of resource abundance is that it does not take into account the especial role of non-tradable. As it is shown by standard trade theory, the price of non-tradable is low in poor countries and high in rich countries (Alcalá and Ciccone, 2004). Therefore, the indicator of natural resource used by Sachs and Warner (1995) and others who have used it, overstates the importance of natural resource export in resource rich countries and underestimates it in rich economies.

Contrary to Brunnschweiler and Bulte (2008) who confirm the positive effect of resource abundance using the total natural capital as well as subsoil wealth per capita as a measure of resource abundance on economic growth, Arezki and van der Ploeg (2007) find that the negative effect of resource abundance on growth still exists even using the share of natural capital in national income.

Using oil production per capita as a proxy for oil abundance, Brunnschweiler (2009) not only does not find evidence in support of natural resource curse in oil sector but also she obtains the strong positive relationship between oil resource and economic growth. Contrary to the above researches, Brückner (2010) argues that the share of resource export in GNP underestimates the negative link between natural resource abundance and growth. Using the purchasing power adjusted measure, he shows that resource dependence has the stronger negative effect on growth than what has been obtained by employing the nominal measures of variables.

Another drawback of previous studies roots in the econometrics approach they have adopted. Relying on the cross-country result

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merely suffers from two shortcomings. This approach does not take into account the data during the span. Missing data and endogeneity problem is another drawback of the cross-country methodology. [van der Ploeg and Poelhekke \(2010\)](#) employ 2SLS estimator and find no evidence for resource curse using both the relative primary export and subsoil asset as indicators for resource dependence and resource abundance respectively. [Arezki and van der Ploeg \(2007\)](#) also suggest using the Instrumental Variable (IV) in order to evaluate the effect of resource abundance on growth and conclude that the resource curse no longer exists after using IV over the period 1965–2000.

However, [Cavalcanti et al. \(2011\)](#) argue that adopting the homogenous panel data approaches may lead to misleading estimations of parameters because of considerable cross-sectional heterogeneity in growth models. The result indicates that there is a high heterogeneity among their sample. They utilize the Common Correlate Effect (CCE) approaches which is a heterogeneous panel data estimator. The estimated coefficient of oil abundance shows a positive and statistically significant sign.

Many channels have been offered by researchers to explain the resource curse. Dutch disease is one theory that explains the effect of a boom in the natural resource sector on the real exchange rate appreciation ([Corden, 1984](#); [Corden and Neary, 1982](#); [Krugman, 1987](#); [Sachs and Warner, 2001](#); [Wijnbergen, 1984a, 1984b](#)). Dutch disease occurs because wages start to rise after a shock in the natural resource sector, which in turn leads to increased prices of non-tradables and appreciation of real exchange rate. The other source of real exchange rate appreciation is the nominal exchange rate appreciation expected because of the inflow of resource revenues and foreign direct investment (FDI) into the resource-producing sector instead of the manufacturing sector. As a result of strong appreciation, the risk of reducing competitiveness in non-resource manufacturing is expected, which leads to deindustrialization through declining employment and output in the manufacturing sector.

Numerous studies have attempted to identify other channels through which natural resources can be turned from a blessing into a curse. One theory that goes beyond the Dutch disease explanation argues that high dependency on natural capital inhibits the growth rate by crowding out other types of capital. For instance, [Gylfason and Zoega \(2006\)](#) argue that a continuous stream of natural resource wealth reduces the need to save and invest in resource-endowed countries. The decline in saving and investment is the result of devoting resources more to rent seeking and less to human and social capital in resource-abundant economies. Additionally, the more volatile the price of primary commodities causes more fluctuation from boom to recession in the countries depended on primary production. This relationship creates uncertainty for investors in these economies ([Herbertsson et al., 2001](#)).

In addition, having abundant natural resources inhabits growth by reducing human capital investment. [Gylfason et al. \(1999\)](#) argue that an adverse relationship exists between natural resource dependence and school enrolment for all school levels across countries. This adverse effect occurs because the real exchange rate fluctuation induced by natural resources hampers investment in the high-skill-intensive secondary sector. The negative association between oil wealth and primary school enrolment for economies in transition has been demonstrated by [Alexeev and Conrad \(2011\)](#) as well. In another study, [Gylfason \(2001\)](#) explains that an increase in resource income contracts the manufacturing sector for which human capital is an important production factor. Therefore, the need for higher education and returns on education decline through reductions in the manufacturing sector. In addition, [Papyrakis and Gerlagh \(2004, 2007\)](#) also report the negative effect of natural resource extractions on investments in human capital.

Researchers have noted that natural resources induce corruption via exclusive licenses to political elites and their partners to extract and export the natural resources and thus reduce the level of competition in these countries ([Ades and Di Tella, 1999](#); [Arezki and Brückner, 2011](#); [Aslaksen, 2007](#); [Kronenberg, 2004](#); [Treisman, 2000, 2007](#); [Vicente, 2010](#)). The adverse effect of resource revenue is less severe in the presence of good institutions ([Auty, 2001](#); [Bulte et al., 2005](#); [Isham et al., 2005](#); [Mehlum et al., 2006a, 2006b](#)). The combination of massive resource rents and weak defined property rights, inappropriate legal system operation, and imperfect markets offers the ideal channel for rent-seeking behavior and turning resources away from productive activities. Empirical evidence from studies such as [Acemoglu \(1995\)](#), [Torvik \(2002\)](#), [Wick and Bulte \(2006\)](#), and [Bulte and Damania \(2008\)](#) demonstrate that resource revenues tend to enhance rent-seeking behavior and be wasted.

This study differs from other studies conducted in this area in several respects. First, the main question is whether a more developed financial system reduces the negative impacts of oil abundance. Therefore, the current study contributes to the resource curse hypothesis by focusing on the role of financial development. Although the positive relationship between financial development and economic growth ([Ang and McKibbin, 2007](#); [Arestis and Demetriades, 1997](#); [Christopoulos and Tsionas, 2004](#); [Demetriades and Hussein, 1996](#); [Gregorio and Guidotti, 1995](#); [Khan and Senhadji, 2003](#); [King and Levine, 1993a, 1993b](#); [Levine et al., 2000](#); [Liang and Teng, 2006](#); [Murinde and Eng, 1994](#);) on the one hand and the negative effect of oil abundance on growth on the other have been explained in several studies, to the best of our knowledge very few of the previous studies have considered the role of financial development as the explanation for the resource curse.

[Nili and Rastad \(2007\)](#) consider the importance of development in the financial system in the relationship between oil abundance and economic growth. They explain that the rate of investment is low in oil-producing economies because oil revenue dampens the financial system and in turn worsens the investment while investment is an important ingredient for economic growth. In another study, [Yuxiang and Chen \(2011\)](#) emphasize the importance of resource abundance in development of the financial system in China and document slower development in the financial system of resource-rich regions than resource-poor ones. In a cross-sectional study, [Gylfason \(2004\)](#) tests the hypothesis that financial development is the transmission channel for the negative effect of natural resource abundance on economic growth. Based on the empirical results, he suggests that crowding out the effect of natural resources on financial development is a transmission channel for the resource curse. Therefore, we attempt to investigate whether oil-endowed economies can turn the curse of their oil resources into a blessing by establishing a more developed financial system.

In addition, the econometric approaches that previous studies have employed to show the relationship between resource abundance and economic growth have some pitfalls. The first setback in most of these studies is that they relied on the cross-sectional approach to assess the resource curse hypothesis. The cross-sectional approach suffers from endogeneity and omitted variable problems, and this is a major reason to be sceptical of the results in the previous studies that have shown both positive and negative links between resource abundance and the rate of economic growth. On the other hand, the time dimension of the data is not taken into account in the cross-sectional method, which is another shortcoming of the econometric results.

Studies that have employed panel data approaches use homogenous panel data techniques like the traditional fixed and random effects estimators. In these methods, all the parameters except the intercept, which can differ across countries, are the same and, thus, there is a

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