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Economic Modelling

journal homepage: www.elsevier.com/locate/ecmod



Empirical evidence on the resource curse hypothesis in oil abundant economy



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ARTICLE INFO

Article history: Accepted 14 July 2014 Available online 8 August 2014

Keywords: Natural resource abundance Economic growth Cointegration

ABSTRACT

This present study investigates the relationship between natural resource abundance and economic growth for Venezuelan economy. We have applied the ARDL bounds testing approach to cointegration developed by Pesaran et al. (2001) to examine its long run relationship amid the variables. The VECM Granger causality is applied to test the direction of causality among the variables. This study covers the period of 1971–2011.

Our empirical evidence indicated that variables are found to be cointegrated. The results confirm that natural resource abundance impedes economic growth. Financial development, capital stock and trade openness enhance economic growth. The feedback hypothesis is also found between natural resource abundance and economic growth.

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1. Introduction

Initially the term "Dutch disease" was used to explain the indirect effects of the boom in gas sector in the Netherlands in the 1960s on the other sectors of the economy (Priyati, 2009). Two gap theory suggests that lack of both domestic savings and foreign exchange reserves provides various hurdles in the way of economic development, especially in the developing countries. In such a situation export boom should provide enough resources to meet the development needs of the developing countries. Coden (1981) provided a theoretical frame work that can be used to analyze the tradeable squeeze; for this purpose he used the economic conditions of British economy of the 1980s. During this time period increase in the value of domestic currency (sterling) and uninterrupted increase in the nominal wages together made the tradeable squeeze. Coden (1981) discussed three important ingredients of the economic theory of squeeze on tradeables which are: short run effects of a monetary squeeze, short effects of North Sea oil, and medium run effects of North sea oil. He concluded that monetary squeeze has larger effects on the various sectors of the economies because it adversely affects both tradeable and non tradeable sectors. Corden and Neary (1982) provided the systematic analysis of the structural changes that occurred in the liberalized small developed and developing economies. They theoretically examined the effects of a boom of a traded goods sector of an economy on the resource allocation, factoral income distribution and the real exchange rate. Australia is rich in mineral resources, the

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Netherlands has natural gas resources, the United Kingdom, Norway and OPEC are full of oil deposits. They concluded that a booming sector has the extractive nature but manufacturing sectors remain under pressure. Similar findings were reported by Cordon (1982) for Australian economy.

On same lines, Usui (1996) empirically investigated the effects of oil export boom in Indonesia which has implemented the two policy options of exchange rate devaluation and accumulation of budget surplus. The empirical results of this study reveal that exchange rate adjustment policy played a significant role in the expansion of the tradable sectors including the manufacturing and agricultural sectors. Moreover, surplus budget as well as the exchange rate devaluation have also contributed in avoiding the "Dutch disease" in Indonesia during this period. Usui (1997) made a comparison of the critical issue of "Dutch disease" between the economies of Indonesia and Mexico by discussing the policy options with reference to oil boom that occurred in these countries. This study painted a contrast picture in their fiscal, external borrowings and exchange rate policies. It also confirms that booming governments should be conservative while designing economic policies to avoid the "Dutch disease" like Indonesia. Investment use of oil revenue in tradable sector was the other factor behind the Indonesian success. But on the other side the economy of Mexico fails to take the advantage of their natural resources and can be an example of resource curse hypothesis.

Now, the abundance of natural resources and economic growth has become a dominating theme around the globe during the last three decades. The relationship among natural resource abundance, trade openness and economic development attracted the development economists for academic research (Auty, 2001). The resource curse hypothesis postulates that economies with the abundance of natural resources,

such as oil, gas, coal and ore, have better potential to perform better for economic development than the economies with no or fewer natural resources. Sound financial sector also plays a vital role in enhancing domestic production and hence economic growth (Shahbaz, 2009). Financial development may help in exploring the natural resources and trade openness facilitates the natural resources in stimulating economic growth as well (Shahbaz, 2012).

Development economists of the decades 1950s and 1960s such as Nurkse (1959) and Rostow (1960) emphasized the positive role of natural resources to develop the physical and human capital in the country which is inevitable for future growth and economic development. The abundance of natural resources might be a potential source of additional domestic output. Some of the income earned from this additional output can be saved and used for the construction of roads, improvement of health and education sectors, as well as for the modernization of telecommunication systems (Papyrakis and Gerlagh, 2004). The conformist's view before the 1980s was that natural resources positively influence the economic prosperity of a country (Rosser, 2006). The theoretical and empirical studies noted that economies with the abundance of natural resources fail to accelerate economic growth (Gylfason, 2001; Leite and Weidmann, 1999; Sachs and Warner, 1995, 1997, 1999a). The growing economies with excessive natural resources showed poor economic performance (e.g., the economies of Russia, Nigeria and Venezuela have shown low economic growth rates over the last two centuries) than those that are undersupplied in natural resources. Therefore, the resource curse hypothesis has become a core area of research for the development economists of this era. The dynamic researchers in the field of economics have been trying to investigate this well constructed concept of resource curse hypothesis for various countries having the natural resource abundance. Various development economists originated the term for this tendency of poor economic performance of the developing countries in the presence of abundant natural resource as a conceptual puzzle (Papyrakis and Gerlagh, 2004). It is explored by Gylfason (2000) how abundance of natural resources impede economic growth. For example, natural resource abundance can be the cause of overvaluation of the national currency due to the volatility of the exchange rate. Secondly, the contest for resource rents can lead to corruption. Therefore, natural resource abundance leads to inefficient allocation of talent and resources, which hinders economic growth of an oil rich country. Thirdly, excessive availability of the natural resources gives a false sense of economic security to the people, and government loses the sight to make a growth friendly environment in the country. Fourthly, nations with the abundance of natural resources do not give priority to the development of their human resources and allocate less income for the education sector. In fact, their natural wealth may misguide them to the need for educating their children. Education is an important prerequisite for the rapid development of a country because education converts the raw labor into human capital (Gylfason, 2000). This entails that abundance of natural resources is likely to decelerate economic growth not only through the misallocation of resources, breeding corruption but also by weakening the sources for the accumulation of human capital.

An oil resource in any country has some special features. On one side, it earns the revenue for the state and on the other side, it serves as the vehicle of global industrialization. Venezuela is a resource dependent economy, which has a population of 29.95 million, per capita income of \$12,470 and \$382.4 billion of GDP in 2012. The Venezuelan economy has been exporting oil for almost a century now. The main mineral resource of the Venezuelan economy is oil, which has earned more than a trillion dollars of income between 1950 and 2008. Oil income accounts on average for 61% of total government revenues, over 88% of exports and 14% of GDP. In 2011, oil income amounted to over US\$ 60 billion, the equivalent of US\$ 2097 per person. Furthermore, according to OPEC's Annual Statistical Bulletin (2010/2011 edition), Venezuela has the world's largest reserves of crude oil, with 296.5 billion barrels. That's over 7 million barrels per Venezuelan and 32 billion barrels

more than Saudi Arabia. At current production levels, it would take over 270 years before Venezuela runs out of oil. Venezuela is, and will remain an important oil producing country in the future (Rodriguez et al., 2012).

Between 2004 and 2008 Venezuela benefited from a prolonged oil boom, showing strong economic growth and a substantial decrease in poverty rates, yet the government's chosen economic and social policies increased the country's dependence on oil revenues making them extremely vulnerable to a fall in prices. While in 1998, oil exports represented 31% of fiscal revenues and 64% of export revenues, by 2008, these figures reached 64% and 92% respectively. After peaking at US\$ 126 in July 2008, oil prices collapsed as a result of the financial crisis, reaching a trough of US\$ 31 by December 2008. The economy briskly followed, growing by less than 1% in the first quarter of 2009, thereafter displaying negative growth for six consecutive quarters. In 2010 Venezuela, despite a renewed increase in oil prices, was the only country in the region, together with earthquake stricken Haiti, with negative growth. In effect, Venezuela's economic performance has been and remains highly contingent on oil revenues (Rodriguez et al., 2012). Table 1 reveals that the economy of Venezuela has been earning oil maximum revenue. The share of governmental oil income has increased significantly above to 87%. Not only the magnitude but also the structure of taxes has also changed significantly over time because the state is trying to maximize the amount of rent.

Table 2 also exhibits that oil rent as percentage of GDP has been increasing. In 1988, oil rent as percentage of GDP was very low i.e. 14.5%, which had increased to 25.4% in 1989, and slightly declined to 23.9% in the decade 1990s. Similarly, oil rent as percentage of GDP increased to 29.2% in the decade 2000s and declined to 18.3% in 2010. In the year 2011 again it increased to 30%. All these figures reveal that oil rent has been increasing since 1988. It depicts the picture that the higher the oil revenues the less will be the burden of taxes on the citizens and chances of high per capita income are high for Venezuela. But the per capita GDP growth rate has not been encouraging; in 2008 it was 3.5% which had declined to -4.8%, and -3.0% in 2009 and 2010 respectively. It increased to 2.6% and 3.9% in 2011 and 2012, respectively. Furthermore, majority of the countries who have abundance of mineral oil, gas and other natural resources have less growth rate as compared to those countries with no or fewer natural resources. Nigeria, Iran, Libya, Irag, Kuwait and Oatar are the countries endowed with mineral oil and other natural resources but their growth rate has been very slow since the 1960s and 1970s. For example today Nigeria has the same per capita GNP as it was in 1966. Similarly the growth rate of Iran between 1965 and 1998 on average was recorded at -1% per year, -2% per year for Libya, and -3% for Iraq and Kuwait. It was -6% per year in Oatar during 1970–995. During 1965–98 for OPEC as a whole GNP per capita was on average decreased by 1.3% per year. Out of 65 natural resource abundant countries only four countries succeeded in enhancing the level of investment and per capita GNP by diversifying their economies and industrializing. These four countries are: Botswana, Indonesia, Malaysia and Thailand (Gylfason, 2001). These examples reveal the consistent pattern of slow economic growth in natural resource abundant countries. Economic growth varies inversely with the increase of the share of natural capital in gross national product (GNP).

 Table 1

 Government share of net-oil revenues. Source: Mazano and Monaldi (2010), PODE.

Time period	Share in oil revenue (%)
1936-1942	38.8
1943-1957	54.5
1958-1975	73.3
1976-1990	80.6
1990-2004	67.6
2004–2008	87.3

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