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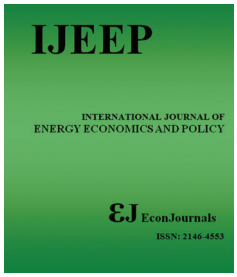

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The Natural Resource Curse: Is It Really a Curse?

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ABSTRACT

The Natural Resource Curse literature started with a clear consensus that dependence on natural resources have clear direct negative effects on economic growth and levels of democracy. However, the literature today reflects that the debate is still going where several papers reflects evidence that is against the consensus of the Natural Resource Curse hypothesis, which provides many open avenues for further research. This paper surveys the literature of the natural resource curse and identifies the main arguments and findings of both streams (curse stream and blessing stream). The main point that this paper highlights is that the literature is still not clear 100% whether the natural resource is a curse or a blessing. The econometric technique and the way how you define natural resources could lead to different or opposite results.

Keywords: Natural Resource Curse, Natural Resource Dependence, Oil Curse, Economic Growth, Democracy
JEL Classifications: N50, H6, P2

1. INTRODUCTION

There has been ongoing research on the topic of the Natural Resource Curse to try to identify whether having natural resources is a curse or a blessing. The argument that a natural resource is an advantage for a country as it serves as a stream of government income is sound. Hence, additional revenues could lead to a stronger economy. Auty and Mikesell (1998) noted that, citrus paribus, one would think that resource wealth would increase the economic welfare of the country. However, Auty (2002) reflects that previous studies show that, on average, countries that lacked natural resources outpaced most countries that were rich in natural resources in terms of economic growth. There are studies that tried to assess the association between reliance on natural resources and democracy levels (Ross 2001; Herb 2005). The literature and history on resource management reflects ongoing debate and a bevy of opinions, which provides many open avenues for further research. This paper surveys the literature of the natural resource curse and identifies the main arguments and findings of both streams (curse stream and blessing stream). The main take-away from the literature is that still not clear 100% whether the natural resource is a curse or a blessing. Plus, institutions have a very essential role in administrating natural resources.

2. BACKGROUND

2.1. What is the "Natural Resource Curse?"

The Natural Resource Curse started from the finding that nations that are rich in natural resources will have inferior economies compared to nations who are poor in natural resources. The term "Resource Curse" dates back to Auty (1993), given that he is the first author to name this concept. The literature has grown considerably and today, scholars from different fields, mostly economics and political science, are interested in the topic. From an economic perspective, the focus is more on the relationship between natural resources and economic growth. However, scholars from the political science side are more interested in the relationship between natural resources and the level of democracy in a nation, and the increases in the chances of having authoritarian governments (Ross 2001, Herb 2005). Other studies tried to evaluate the role of institutions in affecting the management of natural resources (Brunnschweiler and Bulte 2008, Sala-i-Martin

and Subramanian 2008). Some scholars have investigated the association among natural resources and corruption (Robinson et al. 2006). Saad-Filho and Weeks (2013) argued that natural resources become a curse only in countries that choose not to diversify their streams of revenue. This literature review will discuss several articles showing pragmatic evidence that having great quantities of natural resources could affect the economy, democracy levels, and quality of public institutions.

2.2. The Different Explanations of the Natural Resource Curse

The foundations of the literature started in the 1950s with several papers that offered explanations for the fact that some countries in Latin America, regardless of their abundance of natural resources, witnessed slow economic growth (Prebisch 1962, Hirschman 1958). However, no study in that era succeeded in providing a realistic framework or evidence to draw the attention of other researchers because most of the research at that time was based on comparisons of descriptive data. Mahdavy (1970) was another early scholar who wrote about the topic when he discussed the "Rentier States" theory. The author talked about the Islamic Republic of Iran, and his theory was that natural resources played a significant role in the slowdown in Iranian economic growth. Mahdavy analyzed the Iranian economy from 1954 until 1965 in order to assess his hypothesis, and he concluded that the slow growth was due to reliance on natural resources. He theorized that the reason behind the slow growth in Rentier states was that the revenue stream created by the natural resource made a legit government taxation system unnecessary. He supported the theory by looking at other countries in the Persian Gulf (e.g. Kuwait and Saudi Arabia) and claimed that the lack of a taxation system due to large amounts of oil revenues led those countries to have higher rates of corruption and rent-seeking. So the Rentier State theory argues that not having legitimate tax systems leads to bad consequences because lack of taxation will reduce the accountability levels. Mahdavy's (1970) compared several variables (i.e. oil revenues as a percentage of total government revenues, Gross National Product (GNP), GNP per capita, and several other variables) before and after the period of high-oil production in Iran during the 1950s-60s. The author called for additional work and research to help confirm his findings.

Another famous theory that attempted to explain the natural resource curse is the "Dutch Disease" theory. The main idea of this theory is that the existence of a natural resource will push a country to shift its focus toward harnessing the natural resource industry, which will indirectly affect the performance and the size of all other industries adversely (Neary and Van Wijnbergen 1986). In other words, the existence of the natural resource curse will lead to focusing on expanding the natural resource sector, which will shrink all other industries in the non-resource sector indirectly. The authors showed evidence to support their theory, but it was based on case studies that might not be generalizable. Since the evidence available at that time was weak, there was an open debate where authors were not sure if there really a Dutch Disease. However, Harding and Venables (2010) reflects a more recent significant evidence that supports the Dutch Disease hypothesis. The paper is based on a sample of more than 100 countries and it shows that countries that discovered a natural resource experienced a decrease in their exports from all other industries by more than 35 percent, and a significant increase in their imports from the non-natural resource sectors. This correlates highly with the Dutch Disease theory, given that the decline in non-resource exports and the increase of non-resource imports are two signs of shrinkage in the non-resource industries. There are more papers that offer support for the Dutch Disease theory based on cross-country samples and U.S. county levels (Ismail 2010, Kuralbayeva and Stefanski 2010).

If we step back for a moment and take a look at the bigger picture of both the Rentier States and the Dutch Disease theories, we would realize that they are both highly associated with the tradeoff of having a broad tax base or a narrow tax base. A broad tax system is the key for having an efficient tax system (Burman and Slemrod 2020). Efficiency in taxation means having a tax system that minimizes distortions, compliance costs, and administration costs. A broad tax system achieves higher efficiency in contrast with a narrow tax base, because it can raise the same amount of taxes with lower tax rates. The lower tax rate results in lower distortions in the tax system. Minimizing distortions is essential and it takes us back to classical economists as Adam Smith, who believed that there should be minimal government intervention in the market to minimize distortions (Wilson and Skinner 1975). Furthermore, a broad tax base leads to fewer deductions and loopholes, which in turn reduces the complexity of the system. The less complex the system is, the easier it is for consumers to comply with it and for the government to administer it (Slemrod and Bakija 2017).

Another point that is more applicable to the natural resource curse and reflects the importance of a broad revenue-raising base is the issue of volatility. Having a broad tax base could help the entity to be less reliant on limited sources of income, which will encourage having a more diversified economy in terms of its sources of revenues. Having more sources of revenues could assist in having less volatility in the entity's total revenues, which could help in having a more stable economy and less shocks (Sala-i-Martin and Subramanian 2008). Several studies found that broader tax bases are hypothesized to have more stable sources of revenues (Hendrick 2002, Carroll 2009), because, compared with economies that have narrow tax bases, a broader tax base will have fewer adverse effects if a shock hit one of the revenue streams. For example, the reduction of the oil barrel price will affect Kuwait's economy drastically, given that more than 85% of all Kuwait's revenues are oil revenues. However, the effects are not as huge on Norway, which is another major oil producer, given that they are less reliant on oil revenues. Norway has a sound tax system accompanying their oil revenue stream, which makes Norway a country that has broad base relative to Kuwait. This is why volatility is considered as one of the possibilities why economies that rely more on natural resources are expected to be inferior to those that are not. Plus, economies with higher volatility could witness higher level of economic policy uncertainty that could have adverse effects on their economies (Al-Thaqeb and Algharabali 2019; Al-Thaqeb et al. 2022).

Another possibility why natural resources could be a curse is driven from The Rentier States theory. It claims that the Natural Resource Curse is a product of the fact that the existence of natural resources pushes the country to deviate from taxes. This correlates highly with the Kuwait and Norway example. Norway is considered as one of the few countries that are rich in natural resources and are able to avoid the curse (Van der Ploeg 2011). Is it because they have a sound tax system? The answer to this question is relevant, even if there are likely several other factors that play a role, including the quality of institutions and the quality of education in the country. The Dutch Disease theory claims that the existence of a natural resource pushes the country to have a smaller base from which to generate their revenues. This also correlates perfectly with the Kuwait and Norway example. Is the broader revenue-raising base that Norway relies on the answer for avoiding the curse? Assuming that natural resources are really a curse, the literature does not agree 100% on why they are a curse.

Another area of research focuses on how natural resources affect the quality of institutions. The argument here is that natural resource revenues affect institutions negatively because they allow governments to avoid accountability; hence increasing corruption (Isham et al. 2005). The researchers that helped forming this argument argue that having natural resources assist the country in shunning structuring sound tax systems. Thus, the level of accountability and democracy levels are going to be lower in those nations (Ross 2001). This argument is almost exactly similar to the argument of the Rentier States, which claims that natural resources are a curse because they allow the government to ignore structuring a strong taxation system. This also relates to Acemoglu et al. (2004) where they claimed that resource wealth provides an easy avenue for rulers to bribe and buy off all sorts of opposition in the country, which could lead to lower levels of accountability.

Robinson et al. (2006) claimed that natural resource wealth allows governments to expand the public sector by providing extra jobs that are in excess of the efficient level and provide inefficient subsidies for the population that, overall, indicate that higher natural resource wealth leads to lower-quality institutions. This story of providing extra jobs correlates with the public sector in Kuwait. According to a study conducted by the Central Statistical Bureau of Kuwait, around 87% of all Kuwaitis work in the public sector (Statistical Bureau of Kuwait, 2015). All these papers reflect that natural resources increase the chances of having higher rent-seeking and lower-quality institutions.

Another research angle that tries to explain the curse relates to property rights. Do countries that have better identification of property rights avoid the natural resource curse? The key is that if there are no clear property rights, there will not be a direct bridge for exchange between the different parties. In other words, transaction costs could increase considerably if property rights are not clear. This is associated highly with the Coase theorem. Coase (2013) stated that having clear property rights provides a better environment for negotiations, which could lead to an efficient outcome. The role of the government here is to make sure that property rights are clearly assigned, and that there is enforceability of those property rights.

Such theory could be logical and makes more sense for economists that study economic growth where several scholars worked on associating property rights to growth. For instance, Douglas North won a Nobel Prize back in 1993 for his work on institutions, property rights, and economics growth. He made it clear in his writings that property rights are critical for economic growth (North 1990). De Long and Shleifer (1993) is another paper that reflects the effects of institutions and property rights on economic growth.

The problem with this research stream of tying natural resources and property rights with economic growth is that there is no strong empirical study that supports it (Van der Ploeg 2011). It is mostly based on case studies that helped to form this hypothesis. Keep in mind, having clear property rights could be highly associated with having better public institutions, given the fact that they administer the assignment of property rights and their enforceability. Thus, is it the property rights or the quality of public institutions that lead to having a curse/blessing from natural resources?

3. CROSS COUNTRY EMPIRICAL LITERATURE

Most of the literature is based on cross-country studies. According to Torres et al. (2013), the percentage of natural resources exports in a country's Gross Domestic Product (GDP) is the most-used proxy in the literature as a measure for natural resource dependence. The most seminal papers in the literature that attracted other scholars from the economic literature toward the field are (Sachs and Warner 1995, Sachs and Warner 1997). They were the first scholars to offer convincing evidence that supports the Natural Resource Curse notion; reliance on natural resources leads to slower economic growth. It is strong evidence because the paper had a good sample (95 countries). The data of the paper covered the period from 1970 until 1989. They measured the country's reliance on natural resource by the share of exports of natural resources as a percentage of the country's GDP. They measured economic growth (the dependent variable) as growth in GDP per economically active population, and they averaged the growth rate from 1970 to 1989 to construct the dependent variable. They controlled for several independent variables like the log of Gross Domestic Product, economy openness, budget surplus/deficit, education, and many more controls. The main finding of the paper is that it confirmed the negative association between natural resource dependence and economic growth. It is important to note that several other papers in the literature that used a similar model to Sachs and Warner (1995)'s also provide empirical support for the negative association between natural resource dependence and economic growth (Atkinson and Hamilton 2003; Papyrakis and Gerlagh 2007; Rahim et al. 2021). This paper and the following research stream that show evidence supporting the negative association helped in coining the term "The Natural Resource Curse."

The seminal paper of Sachs and Warner (1997) faced many criticisms in terms of the econometric estimation of their model. The biggest criticism is that the measure of natural resource dependence that the paper employed was endogenous, while the

authors dealt with it as an exogenous variable. Brunnschweiler and Bulte (2008), Alexeev and Conrad (2009), and Ding and Field (2005) showed evidence that discredit the Natural Resource Curse notion. All three papers ran further tests on the theory with better models and found that the negative association does not exist. For instance, Ding and Field (2005) started with a simple, one-equation model dealing with natural resource dependence as an exogenous variable similar to Sachs and Warner (1995) model. The initial findings confirmed the negative association between natural resource dependence and economic growth. However, when the authors dealt with the dependence variable as an endogenous variable applying a recursive model of three equations, the negative association disappeared.

Brunnschweiler and Bulte (2008) confirmed first that the negative association between natural resource dependence and economic growth does not really exist by employing a Three Stage Least Squares (3SLS) model, which allowed them to instrument for both resource dependence and the quality of institutions variables. They started with a simple OLS regression where they regressed natural resource dependence on economic growth assuming that resource dependence is exogenous and the result conforms to the literature; negative association and statistically significant. Then they redid everything with the assumption that resource dependence and quality of institutions are both endogenous, and that is when the negative association disappeared. The instrument they used to account for the endogeneity in the variable of quality of institutions is latitude. One of the main contributions is that the paper distinguished between two terms, natural resource dependence and natural resource abundance. The authors defined natural resource abundance as the log total natural capital and mineral resource assets in USD per capita, which they constructed based on (World Bank 1997), which is a paper published by the World Bank. They assessed the effect of natural resource abundance on economic growth and institutional quality and found that, contrary to Natural Resource Curse theory, the association is positive. Just to make it clear, the measure that had a positive association is different than the ones commonly used in the literature. Countries that had higher resource abundance had better institutions and a faster economic growth. Thus, the authors concluded by stating that the negative association between natural resources and economic growth is a "red herring."

Brunnschweiler and Bulte (2008) dealt with their new natural resource abundance variable as an exogenous variable. Van der Ploeg and Poelhekke (2010) disagrees and used a different measure for resource abudnace and found that the positive association between resource abudance and economic grwoth does not hold. The finding of Van der Ploeg and Poelhekke (2010) does not change the finding that resource dependence has no effect on economic growth if you deal with resource dependence as an endogenous variable. It only discredits the finding of (Brunnschweiler and Bulte 2008) that resource abundance has a positive association with economic growth. The same authors have another paper that challenges Sachs and Warner (1995)'s findings. Van der Ploeg and Poelhekke (2009) did not find the negative association between resource dependence and economic growth. It vanished when they added a new independent variable to the model, which is the standard deviation of actual annual growth of the study's period.

The papers that attack the credibility of the natural resource curse hypothesis kept flowing. Using an instrumental variable regression to account for the endogeneity in the institutional quality variable, Sala-i-Martin and Subramanian (2008) showed that their effect of natural resources is truly negative on economic growth. However, they show that this is the indirect effect of natural resource dependence. They demonstrated that by using a system of two equations to help control for the endogeneity in institutional quality. The instrument they used is the percentage of population that can communicate in English. When they did that, the effect of natural resource dependence disappeared in most of the cases. However, there was a robust, negative direct effect from natural resource dependence on institutional quality in the first stage of their model. Therefore, they concluded that natural resources affect the quality of institutions negatively and that the lower quality of institutions is the source that leads to poor economic growth. The growth literature almost fully agrees that bad institutions hamper economic growth significantly (North 1990, Acemoglu et al. 2002, Easterly and Levine 2002, Nasreen et al. 2020, Afonso 2022). This could provide some support to the theory that the causality of the Natural Resource Curse hypothesis roots down to the quality of institutions, and those institutions are the source that assist in knowing whether natural resources will be a curse or a blessing. Higher quality institutions will manage the natural resource wisely, which will help the economy. Hence, the natural resource in this case is a blessing. Lower quality institutions, on the other hand, will mean bad administration of natural resource, which will make the natural resource seem like a curse. However, the Sala-i-Martin and Subramanian (2008)'s study is based on the Nigerian experience only with the natural resources, which means that the findings of their work might not be applicable to all other countries. Henri (2019) also provides more recent evidence that natural resources have negative effects on quality of institutions and increase corruption.

Keep in mind that most studies that confirm the negative association between natural resource dependence and growth, including Sachs and Warner (1997), employed cross-sectional models. The literature reflects a non-trivial number of studies that employed panel data analysis. Torres et al. (2012) produced a paper that defied the main theory of the Natural Resource Curse through a panel model. The authors' panel data analysis conveyed that oil wealth does not impede a country's growth. They stated that the negative association that several studies found could be because of weak econometric models that are not appropriate for cross-country studies. They also found that oil could be a positive influence if the country is fiscally responsible, and they defined fiscal responsibility as having a balanced budget as a percentage of GDP. Lederman et al. (2008) published another panel study that also refuted the negative relationship between oil dependence and economic growth when they added panel fixed effects to the model. They mentioned that there could be negative effects in general from natural resource dependence but considered the term "curse" too strong of a descriptor.

Ross (2001) offered another seminal paper that served as the tipping point that attracted more political scientists to the literature. Ross assessed the association between natural resource dependence and levels of democracy in a country. However, Ross's interest was in oil rather than other natural resources. Following (Sachs and Warner 1995)'s, he measured oil dependence as the value of oil export as a ratio of the country's GDP. The dependent variable that he used was an index called Polity IV that many scholars in the political science literature employ to measure the levels of democracy among countries. The study's sample was based on 113 countries. The study covered the period starting from 1971 until 1997. The key finding of Ross's paper is that oil dependence is negatively associated with the level of democracy in a country. He concluded that the abundance of oil in a country increases the likelihood of having an authoritarian regime.

However, it is essential to understand how the scores of Polity IV that Ross (2001) used it as the dependent variable are created to be able to make better conclusions. Polity IV is a dataset highly used by scholars from the political science field. Some of the components of the Polity IV scale include measures for competitiveness of political participation, constraints on the chief executive, and the openness of executive recruitment (Marshall et al. 2002). Knowing the details of the Polity IV index and the sub-components of the index's scores could easily push some scholars to argue that all of those could fit under the umbrella of having better public institutions.

So the question is: Does natural resources really hinder the levels of democracy in the country or is it affecting the quality of institutions that the country has? The other question would be: if natural resources are leading to lower quality institutions, are we sure that natural resources are really the reason why quality of institutions is lower? Since other studies find that natural resources are associated with slower economic growth, maybe the slower growth is leading the country to have worst institutions. What we are trying to say is that one could argue that better institutions is a product of better economic growth. Glaeser et al. (2004) helps making this point clear where they argue that it is not conclusive that better institutions are associated with faster economic growth. They state that it could work the other way and we be might witnessing a reverse causality issue where better economic growth is leading to better human skills and human capital, which in turn is leading to having higher quality institutions. What we are trying to say here is that maybe natural resources are not really leading to lower quality institutions; maybe those countries already have slower economic growth and that slower growth is leading to lower human capital and skills, which translates into lower quality institutions.

Until this point, several scholars kept publishing papers finding results that confirms Ross (2001)'s finding that there is a negative association between reliance on natural resources and the levels of democracy within a country (Jensen and Wantchekon 2004, Goldberg et al. 2008, Ross 2009, Aslaksen 2010, Algharabali et al. 2021, Brooks and Kurtz 2022). This finding started to prevail as a fact among political scientists. This takes us to Herb (2005), which is one of the very few papers at that time that disagrees with Ross (2001)'s findings. Herb studied several countries in the Middle East and Sub-Saharan Africa. The dependent variable he used is democracy measure, which he constructed based on Freedom House's democracy score. Freedom House is another index that is created by an independent agency that assess the level of democracy of most countries around the world. He used first the ratio of main natural resource revenues to total revenues as a measure for reliance on natural resources. Then he used Ross (2001)'s oil proxy of net oil exports as a percentage of GDP. He found that natural resource abundance had some negative effects on the economy. However, he noted that does not necessarily make it a curse. Herb justified his findings by mentioning that most of the countries that are rich with resources are located in regions that are politically and economically deficient in general. He believes that the previous results in the literature reflect exaggerated numbers where they are not accounting for the many differences across the regions. He concluded by stating that it is not the natural resources that are causing this lower democracy level. Countries that are more reliant on natural resources could be less democratic if they did not get the chance to discover that their lands have natural resources. He states that several parts of the puzzle are ignored in those papers that reflect the natural resource curse. Yet, his argument was not convincing enough to discredit the negative association between democracy levels and reliance on natural resources. Herb (2005)'s main point is that the research methods and techniques that most papers in the literature used are not sufficient to make a definite conclusion that natural resources are bad.

Haber and Menaldo (2011) published a more convincing paper that seriously questions the negative association between democracy and reliance on natural resources. They published the paper in one of the most respected political science journal (American Political Science Review). The paper serves as a tipping point in the natural resource curse literature because it criticized and discredited the findings of most papers in the literature harshly. The authors make it clear that all papers that reflect the negative association are weak econometrically and none of those paper is reflecting a causal argument. The authors claim that all those papers suffer from time invariant factors and country specific omitted variables bias.

In other words, the authors state is that the evidence at that time is not sufficient to state that Kuwait would have institutions and democracy levels as good as Norway had they not find oil within their borders. The weakness in institutions and political systems was present in those countries even before the oil discovery (Haber et al. 2003). Another weakness that they pointed out in those papers is the fact that most of them did not cover the period that preceded the discovery of the natural resource. Thus, they constructed a dataset consisting of 168 country that covers the period from 1800 until 2006, which allowed them to rely on a time series centric technique. They also did create a counterfactual that could serve as a control group to allow them comparing each country that is highly reliant on natural resources with its counterfactual path had they not discovered natural resources. They constructed this counterfactual by looking at the path that other countries within the same region followed and are not reliant on natural resources. Following what most papers in the literature

did, they estimated regimes' level of democracy through the Polity index. The main measure they used to estimate reliance on natural resources is "Fiscal Reliance," which they defined as the percentage of revenues generated from natural resources out of total revenues. The second measure of reliance on oil they used is total oil income per capita, which they divided by multiplying the number of oil barrels sold with its average price, then divided by the total population. They used this measure because some papers in the literature provide evidence that supports the natural resource curse through this variable. The paper is full of different models and techniques that the authors employed in order to test the effect of natural resource reliance on the levels of democracy. Almost all models in the paper reflect that the negative association that several papers found before is illusory. They ran several robustness checks and techniques, and they tried several techniques that other authors in the literature did, and showed that most papers that found the negative association did so because of mistakes in their econometric model and estimation methodology. They concluded that based on their data and models, there is no evidence that natural resources could lead a country to be less democratic. In fact, they found evidence that natural resources could be a blessing where the discovery of natural resources helped some cases to be more democratic, which correlates with (Herb 2005)'s argument when he stated that countries that discovered the oil could be far less democratic if they were not rich with oil.

Brooks and Kurtz (2016) reflects another criticism to Ross (2001)'s paper and the stream of research that followed his path; the stream of research that reflects a negative association between democracy levels and reliance on natural resources. The authors state that most of those papers assume that the natural resource dependence variable is purely exogenous, which the authors find unconvincing. Instead of thinking about natural resources as exogenous gifts, they think that natural resources are endogenous to the level of technology and human skills to allow the country to detect and extract those natural resource efficiently. So they argue that most previous studies did not resolve this endogeneity issue, which means that their results might not be accurate. They created a sample that has most countries in the world for the period between 1960 until 2006. In order to deal with the endogeneity, they decided to use an instrumental variable model. The instrument that they decided to use is a measure that they called reserve density. They constructed the instrument by adding up the number of all oil reserves in the country and divide that by the size of the country. The results of their work is somewhat contrary to the previous papers. They found that the oil wealth is not necessarily a curse, and oil could lead to having better quality institutions.

Gollin et al. (2016) offered more recent evidence that evaluates the association between reliance on natural resources and urbanization rates in a country. They wanted to assess the association because economic growth is highly associated with industrialization. However, there are many unindustrialized countries that have high rates of urbanization. They measured reliance on natural resources as the share of natural resources as a percentage of the country's GDP. In order to measure urbanization rates, they separated all industries into three categories (1) food produced in rural areas, (2) urban non-tradable goods, and (3) urban tradable goods. This allowed the authors to measure urbanization by adding the number of workers in the two urban industries to find the ratio of urban workers to all workers. The authors found that reliance on natural resources is associated with higher urbanization rates. However, they found that countries that rely on natural resources have a higher percentage of the population working in the government, and they have a lower output per worker. Furthermore, they found that countries that rely on natural resources witness higher inequality rates (measured by Gini), and lower quality of education.

4. EVIDENCE FROM LOCAL EXPERIENCES

Even though the literature is more based on cross country studies, there is a non-trivial number of studies that reflect local experiences with natural resources. The good thing about local experiences is that the cases in the sample would be more comparable where they would all (i.e. local counties) be part of the same legal system and circumstances (similar institutions). Borge et al. (2015) reflects evidence based on the Norwegian experience with the use of hydropower. They assessed the effects of natural resources on efficiency of local government in providing public services. They defined efficiency as the ratio of total output of public services to total revenues of the local government. The main explanatory variables is a measure that helps them to test the natural resource curse; and they used revenue from hydro-power. Thus, they separated total revenues into two variables, revenues from hydro-power and all other revenues. In order for the natural resource curse hypothesis to hold, the coefficient of hydro-power revenues should be negative and bigger in magnitude than the "all other revenues" variable if both were negative. However, the results show that the two variables were negative and almost equal; the magnitude of the "all other revenues" is actually bigger in magnitude. Thus, the results indicates that natural resources does not affect the efficiency of the government negatively.

Weber (2014) reflects another local experience with natural resources based on 362 nonmetropolitan counties in the southern region of US covering the period between 2000 and 2010. They assessed the effects of natural gas on the levels of employment. So their work is an empirical test of the "Dutch Disease" hypothesis, which states that natural resources will lead the entity to rely more on natural resources and ignore everything else, which could hamper economic growth. However, the findings indicate that every new gas related job helped in creating a minimum of one non-gas related job. The authors states that this finding means that the more reliance on natural resources had a neutral effect on employment. The paper also find that the increased reliance on natural resources did not affect education attainment. This finding indicate that there is no support for the natural resource curse theory in the study's sample.

Michaels (2011) produced another study that challenges the Resource Curse hypothesis. The paper is a local example based on counties in the Southern Region of the United States. He studied oil extraction among these counties from 1890 until 1990. He

focused on the effects of natural resource abundance on education, industrialization, levels of income. He used the employment share of manufacturing, agriculture, and mining as the proxy to measure industrialization. His findings reveal that the counties that are rich with oil were similar to neighboring and comparable counties that do not have oil before the discovery of oil. However, the counties that discovered oil reflected enhanced infrastructure, greater per capita income and education, and better local employment per square mile. He mentioned that the oil discovery actually played a significant role in helping the South compete with Northern U.S. regions. Thus, the author believes that oil abundance in local experiences in the United States was beneficial. However, he also acknowledged that his sample is different because it focuses on smaller governments. Yet, his results indicate that the negative effects that other oil countries face are probably due to weak institutions.

Loayza et al. (2013) is another local experience, but it assesses how natural resources affect socioeconomic outcomes among the different districts in Peru. The dependent variables they used are per capita expenditure, poverty rates, illiteracy rates, and inequality rates measured by the Gini coefficient, and the main explanatory variable is mining activity. Their sample consists of 540 districts including ones that produce natural resources and ones that do not. Their analysis reflects that before the Peruvian mining boom of 1993, the producing and non-producing districts did not differ much and they were almost identical. What they did next is to compare those districts later in 2007 to assess whether the mining boom served as a curse or a blessing. The findings reflect that mining activity led to higher per capita expenditure, lower illiteracy rates, and lower rates of poverty. Thus, natural resources served as a blessing for the Peruvian districts in terms of education, poverty, and income. The Gini coefficient turned to be higher in producing counties, which indicates that having natural resources could increase the level of inequality. This correlates with Gollin et al. (2016)'s findings where they found that more reliance on natural resources lead to higher rates of inequality. The author concludes that the Peruvian experience shows that natural resources served as a blessing overall. There are more and more academic studies based on local samples in the US that refutes the negative consequences of reliance on natural resources (Partridge et al. 2013, Allcott and Keniston 2018).

5. CONCLUSION

The Natural Resource Curse literature still does not have a conclusive consensus regarding several issues. The literature has evolved starting from the mid-point of the 20th century and continues until this day. First, the literature at some point somewhat agreed that dependence on natural resources could lead to slower economic growth (Sachs and Warner 1995, Atkinson and Hamilton 2003), lower quality institutions (Sala-i-Martin and Subramanian 2008), more corruption (Robinson et al. 2006), and lower democracy levels (Ross 2001). However, recent studies reflect what previous studies did not account for, which is the fact that the natural resource dependence variable is an endogenous variable. Thus, dealing with it as exogenous variables will provide misleading results. Another limitation is the fact that many studies were cross-sectional studies. Thus, many scholars started using more sophisticated econometrics techniques, which led to findings different from those that dealt with dependence as an exogenous variable (Hayat and Tahir 2021). The negative association between natural resources and economic growth, and natural resources and democracy levels seems to be under dispute today. Some papers that accounted for endogeneity argue that natural resources could be a curse for the country if the country has bad institutions, so institutions could be the main component of the story.

Scholars are still trying to answer the question whether natural resources serve as a blessing or a curse for a nation, and a more recent evidence shows that it could be a curse or a blessing depending on the natural resource type (Inuwa et al. 2022). One of the strengths of the literature is the ongoing debate between scholars, which plays a significant role in refining the literature and moving it towards more credible results. For instance, one of the current trends in the literature is the use of panel data analysis to control random variables that might have been omitted. Most of the panel studies in the literature reflect evidence that repudiates the Natural Resource Curse. Another trend in the literature is the use of instrumental variable models to account for endogeneity. With this ongoing debate, however, the literature still does not provide one conclusive answer on whether there is a real Natural Resource Curse. The more recent papers accounting for endogeneity or the ones that employed a panel research design are more convincing, and they provide more credible findings. Thus, it appears that natural resources by themselves should not simply be considered as a curse.

Another extension to the literature could be to work on a more accurate measure for natural resource dependence because scholars in the literature does not seems to agree on a specific measure. For instance, which one is a better measure for natural resource dependence, natural resource exports as a percentage of GDP or total revenues from natural resources as a percentage of total revenues? Keep in mind that if a paper finds that even with the new variable the results are still the same, then this could serve as a robustness check for the natural resource theory.

REFERENCES

Acemoglu, D., Johnson, S., Robinson, J.A. (2002), Reversal of fortune: Geography and institutions in the making of the modern world income distribution. The Quarterly Journal of Economics, 117(4), 1231-1294.

Acemoglu, D., Verdier, T., Robinson, J.A. (2004), Kleptocracy and divide-and-rule: A model of personal rule. Journal of the European Economic Association, 2(2-3), 162-192.

Afonso, O. (2022), The impact of institutions on economic growth in OECD countries. Applied Economics Letters, 29(1), 63-67.

Alexeev, M., Conrad, R. (2009), The elusive curse of oil. The review of Economics and Statistics, 91(3), 586-598.

Algharabali, B., Butler, J.S., Closson, S. (2021), The oil curse validated: Evidence from Eurasia and Latin America. International Journal of Energy Economics and Policy, 11(3), 494-501.

Allcott, H., Keniston, D. (2018), Dutch disease or agglomeration? The local economic effects of natural resource booms in modern America. The Review of Economic Studies, 85(2), 695-731.

Al-Thaqeb, S.A., Algharabali, B.G. (2019), Economic policy uncertainty: A literature review. The Journal of Economic Asymmetries, 20, e00133.
Al-Thaqeb, S.A., Algharabali, B.G., Alabdulghafour, K.T. (2022), The pandemic and economic policy uncertainty. International Journal of Finance and Economics, 27(3), 2784-2794.
Aslaksen, S. (2010), Oil and democracy: More than a cross-country correlation? Journal of Peace Research, 47(4), 421-431.
Atkinson, G., Hamilton, K. (2003), Savings, growth and the resource curse hypothesis. World Development, 31(11), 1793-1807.
Auty, R. (2002), Sustaining Development in Mineral Economies: The Resource Curse Thesis. England, UK: Routledge.
Auty, R.M., Mikesell, R.F. (1998), Sustainable Development in Mineral Economies. United Kingdom: Clarendon Press.
Borge, L.E., Parmer, P., Torvik, R. (2015), Local natural resource curse? Journal of Public Economics, 131, 101-114.
Brooks, S.M., Kurtz, M.J. (2016), Oil and democracy: Endogenous natural resources and the political "resource curse". International Organization, 70(2), 279-311.
Brooks, S.M., Kurtz, M.J. (2022), Oil "rents" and political development: What do we really know about the curse of natural resources? Comparative Political Studies, 55(10), 1698-1731.
Brunnschweiler, C.N., Bulte, E.H. (2008), The resource curse revisited and revised: A tale of paradoxes and red herrings. Journal of Environmental Economics and Management, 55(3), 248-264.
Burman, L.E., Slemrod, J. (2020), Taxes in America: What Everyone Needs to Know®. United Kingdom: Oxford University Press.
Carroll, D.A. (2009), Diversifying municipal government revenue structures: Fiscal illusion or instability? Public Budgeting and Finance, 29(1), 27-48.
Coase, R.H. (2013), The problem of social cost. The Journal of Law and Economics, 56(4), 837-877.
De Long, J.B., Shleifer, A. (1993), Princes and merchants: European city growth before the industrial revolution. The Journal of Law and Economics, 36(2), 671-702.
Ding, N., Field, B.C. (2005), Natural resource abundance and economic growths. Land Economics, 81(4), 496-502.
Easterly, W., Levine, R. (2001), What have we learned from a decade of empirical research on growth? It's not factor accumulation: Stylized facts and growth models. The World Bank Economic Review, 15(2), 177-219.
Glaeser, E.L., La Porta, R., Lopez-de-Silanes, F., Shleifer, A. (2004), Do institutions cause growth? Journal of Economic Growth, 9(3), 271-303.
Goldberg, E., Wibbels, E., Mvukiyehe, E. (2008), Lessons from strange cases: Democracy, development, and the resource curse in the US states. Comparative Political Studies, 41(4-5), 477-514.
Gollin, D., Jedwab, R., Vollrath, D. (2016), Urbanization with and without industrialization. Journal of Economic Growth, 21(1), 35-70.
Haber, S., Maurer, N., Razo, A. (2003), The Politics of Property Rights: Political Instability, Credible Commitments, and Economic Growth in Mexico, 1876-1929. Cambridge: Cambridge University Press.
Haber, S., Menaldo, V. (2011), Do natural resources fuel authoritarianism? A reappraisal of the resource curse. American Political Science Review, 105(1), 1-26.
Harding, T., Venables, A.J. (2010), Foreign Exchange Windfalls, Imports and Exports. United Kingdom: University of Oxford.
Hayat, A., Tahir, M. (2021), Natural resources volatility and economic growth: Evidence from the resource-rich region. Journal of Risk and Financial Management, 14(2), 84.
Hendrick, R. (2002), Revenue diversification: Fiscal illusion or flexible financial management. Public Budgeting and Finance, 22(4), 52-72.
Henri, P.A.O. (2019), Natural resources curse: A reality in Africa. Resources Policy, 63, 101406.
Herb, M. (2005), No representation without taxation? Rents, development, and democracy. Comparative Politics, 37, 297-316.
Inuwa, N., Adamu, S., Sani, M.B., Modibbo, H.U. (2022), Natural resource and economic growth nexus in Nigeria: A disaggregated approach. Letters in Spatial and Resource Sciences, 15(1), 17-37.
Isham, J., Woolcock, M., Pritchett, L., Busby, G. (2005), The varieties of resource experience: Natural resource export structures and the political economy of economic growth. The World Bank Economic Review, 19(2), 141-174.
Ismail, K. (2010), The Structural Manifestation of the 'Dutch disease': The Case of Oil Exporting Countries. United States: International Monetary Fund.
Jensen, N., Wantchekon, L. (2004), Resource wealth and political regimes in Africa. Comparative Political Studies, 37(7), 816-841.
Kuralbayeva, K., Stefanski, R. (2010), De-Specialization. Dutch Disease and Sectoral Productivity Differences. Oxford Research Paper. Oxford: University of Oxford.
Lederman, D., Maloney, W.F., Dunning, T., Shelton, C.A. (2008), In search of the missing resource curse (with comments). Economía, 9(1), 1-57.
Loayza, N., Miery Teran, A., Rigolini, J. (2013), Poverty, Inequality, and the Local Natural Resource Curse. World Bank Policy Research Working Paper, 6366.
Mahdavy, H. (1970), The patterns and problems of economic development in rentier states: The case of Iran. Studies in the Economic History of the Middle East, 428, 67.
Marshall, M.G., Jaggers, K., Gurr, T.R. (2002), Polity IV project: Political regime characteristics and transitions, 1800-2002. Baltimore: University of Maryland.
Michaels, G. (2011), The long term consequences of resource-based specialisation. The Economic Journal, 121(551), 31-57.
Nasreen, S., Mahalik, M.K., Shahbaz, M., Abbas, Q. (2020), How do financial globalization, institutions and economic growth impact financial sector development in European countries? Research in International Business and Finance, 54, 101247.
Neary, J.P., Van Wijnbergen, S. (1986), Natural Resources and the Macroeconomy. United States: MIT Press.
North, D.C. (1990), Institutions, institutional change and economic performance. United Kingdom: Cambridge University Press.
Papyrakis, E., Gerlagh, R. (2007), Resource abundance and economic growth in the United States. European Economic Review, 51(4), 1011-1039.
Partridge, M.D., Betz, M.R., Lobao, L. (2013), Natural resource curse and poverty in Appalachian America. American Journal of Agricultural Economics, 95(2), 449-456.
Prebisch, R. (1962), The Economic Development of Latin America and Its Principal Problems. Latin America: Economic Bulletin for Latin America.
Rahim, S., Murshed, M., Umarbeyli, S., Kirikkaleli, D., Ahmad, M., Tufail, M. and Wahab, S. (2021), Do natural resources abundance and human capital development promote economic growth? A study on the resource curse hypothesis in Next Eleven countries. Resources, Environment and Sustainability, 4, 100018.
Robinson, J.A., Torvik, R., Verdier, T. (2006), Political foundations of the resource curse. Journal of Development Economics, 79(2), 447-468.
Ross, M.L. (2001), Does oil hinder democracy? World Politics, 53(3), 325-361.
Ross, M.L. (2009), Oil and Democracy Revisited. Los Angeles: University of California-Mimeo.
Saad-Filho, A., Weeks, J. (2013), Curses, diseases and other resource confusions. Third World Quarterly, 34(1), 1-21.
Sachs, J.D., Warner, A. (1995), Natural Resource Abundance and

Economic Growth. Berkeley: University of California.
Sachs, J.D., Warner, A.M. (1997), Fundamental sources of long-run growth. The American Economic Review, 87(2), 184-188.
Sala-i-Martin, X., Subramanian, A. (2008), Addressing the natural resource curse: An illustration from Nigeria. In: Economic Policy Options for a Prosperous Nigeria. London: Palgrave Macmillan. p61-92.
Slemrod, J., Bakija, J. (2017), Taxing Ourselves: A citizen's Guide to the Debate Over Taxes. United States: MIT Press.
Torres, N., Afonso, O., Soares, I. (2012), Oil abundance and economic growth--a panel data analysis. The Energy Journal, 33(2), 119-148.
Torres, N., Afonso, O., Soares, I. (2013), A Survey of Literature on the Resource Curse: Critical Analysis of the Main Explanations, Empirical Tests and Resource Proxies. CEF. UP Working Papers. p1302.
Van der Ploeg, F., Poelhekke, S. (2009), Volatility and the natural resource curse. Oxford Economic Papers, 61(4), 727-760.
Van der Ploeg, F., Poelhekke, S. (2010), The pungent smell of "red herrings": Subsoil assets, rents, volatility and the resource curse. Journal of Environmental Economics and Management, 60(1), 44-55.
Van der Ploeg, F.V.D. (2011), Natural resources: Curse or blessing? Journal of Economic Literature, 49(2), 366-420.
Weber, J.G. (2014), A decade of natural gas development: The makings of a resource curse? Resource and Energy Economics, 37, 168-183.
Wilson, T., Skinner, A.S., editors. (1975), Essays on Adam Smith. United Kingdom: Clarendon Press.
World Bank. (1997), Expanding the Measure of Wealth: Indicators of Environmentally Sustainable Development. Washington, DC: World Bank.