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Resource curse: The case of Ecuador

Cristina Isabel Orozco Espinel

Among others, Jeffrey Sachs and Andrew Warner have demonstrated a positive correlation between the abundance of natural resources and poor economic growth, the so-called resource curse. Certainly, it depends on several factors, e.g. government corruption, internal conflict, revenue volatility and excessive indebtedness. Most of these issues perfectly suit with the Ecuadorian economy. Indeed, this country has historically been an exporter of primary goods, mainly petroleum, which accounts for 45% of its exports and is closely related to economic dependence and poverty.

The abundance of oil revenue has discouraged investment in economic diversification, preventing the country from having a more stable economy in the long term. In this context, this paper is focused on showing Ecuador as a case of the resource curse. Firstly, it reviews the most relevant literature about resource curse over time. Secondly, it links the general theory to the specific country characteristics of Ecuador and gives some insights into this country. Thirdly, it analyses five of the causes of resource curse emphasizing on the context of Ecuador. Finally, it draws some conclusions about how this country has historically become dependent on oil exports and why its economy is extremely vulnerable to oil prices, confirming the resource curse hypothesis.

Keywords: resource curse Ecuador, oil corruption

1. Introduction

The resource curse, also known as the paradox of abundance, refers to the paradox that countries with an abundance of natural resources, especially non-renewable resources, such as minerals and fuels, tend to have lower economic growth and worse development results than countries with fewer natural resources. In this context, since 1972, when oil exploitation began in Ecuador, it has become the central axis of its economy and continues to maintain its fundamental importance. The enormous income captured by the state over time has allowed Ecuador to invest in road, energy and health infrastructure, addressing multiple economic and social pressures. Paradoxically, in the last decade (2004–2014) it has recorded the highest income from oil resources in the last 50 years. Meanwhile, the government has suffered a lack of liquidity, a situation that has led the country into continuous indebtedness to China in exchange for concessions over its natural resources, mainly in the oil industry (Acosta 2009).

Indeed, oil has been Ecuador's main export item since the 1970s. The previous government chaired by Rafael Correa (2007–2017) tried to break this primary export pattern in order to diversify exports and promote value-added products. To this end, there were promulgated principles of sustainable development for the first time in the country's economic history, pretending to use the extractive industry as a driver of change in the development model focused on prioritizing environmental sustainability and social inclusion. In this model, the money from the oil industry was earmarked

for projects to gradually diversify the economy, adopting a long-term sustainable model (Villalba 2013).

Despite this supposed change in the management of economic policy, this new economic model could not be achieved in the medium term (Acosta 2010) due to the intensification of the extractive industry in the period (2010–2017), contrary to the government's discourse. Conversely, the oil industry slowed down the development of the country, leaving it in a state of greater vulnerability and indebtedness. Indeed, despite the change of government in 2017, the actions taken during 2018 point to economic management remaining the same. The current president Lenin Moreno has recognized that the present economic situation is "critical", due to the low prices for oil on the international market and high indebtedness (Spurrier 2018).

With this background, during 2018 the level of indebtedness has increased. In October 2017, the balance of the aggregate debt was USD 46,162.4 million; that is, 6,228 million more than in 2017, when the new government was established. This debt was mainly channeled through bond issues on the international market at high interest rates, between 8.75 and 9.625%. In the same way, the government used the gold reserves administered by the Central Bank of Ecuador (ECB) to obtain financing from Goldman Sachs (Spurrier 2018).

Above all, in the current situation of the country's indebtedness and the context of low oil prices, productive diversification is returning to the center of the debate on development strategies. Currently, productive diversification is a topic of particular relevance for middle-income countries which face the challenge of acquiring new productive capacities and translating them into a more diversified basket of exports made up of more sophisticated products (Felipe et al. 2012). Therefore, the research question of this study seeks to demonstrate whether Ecuador fits into the resource course hypothesis. Thus, this study is organized as follows; Firstly, it reviews the most relevant literature about resource curse over time. Secondly, it links the general theory to the specific characteristics of Ecuador and gives some insights into this country. Thirdly, it analyses five of the causes of resource curse emphasizing on the context of Ecuador. Finally, it gives some conclusions about how this country has historically become dependent on oil exports and why it is vulnerable to be part of the resource curse hypothesis.

2. Abundance of resources, why is it a curse?

The resource curse, also known as the paradox of abundance, refers to the paradox that countries with an abundance of natural resources, especially non-renewable resources such as minerals and fuels, tend to have a lower economic growth and worse development results than countries with fewer natural resources. The resource curse focuses on many different reasons, including a decrease in the competitiveness of other economic sectors caused by Dutch disease, the volatility of income from natural resources due to the tendency to the variation of the global commodities price market, the mismanagement of resources by the government and the presence of weak, inefficient, corrupt and unstable institutions due to the flow of real or anticipated income from extractive activities, which can be easily diverted.

There is intense debate about the reasons for and against resource curse. In this context, the relationship between primary exports, growth and productive diversification has been a matter of study for almost a century. In the neoclassical economic theory approach, predominant until the middle of the last century, the abundance of natural resources was considered as a source of comparative advantage and, consequently, primary-export specialization could boost growth and productive diversification. (Dominguez 2009). However, the first criticisms of this approach in the Latin American context appear in the so-called Prebisch-Singer thesis, which observes that international prices of raw materials, unlike industrialized products, follow a downward trend, which generates a progressive deterioration of the terms of trade between peripheral countries (producers of raw materials) and central countries (producers of manufactured goods). Consequently, there is an inequitable distribution of revenues in international trade (Prebisch 1950, Singer 1975).

In this context, authors like Neary and Wijnbergen (1983) state that the discovery of oil in a country can lead to recession because of the new income received. Indeed, the resource curse is associated with Dutch disease derived from mining or hydrocarbon income. According to IMF studies regarding the resource curse, which are based on a comparative analysis of countries to determine the relevance it has in developing economies, it is found that resource curse is a phenomenon intrinsic to most countries that have oil or minerals; that is, the possession of these resources is linked to the contraction of long-term growth (IMF 2010).

Moreover, income from the oil sector can encourage deindustrialization because the appreciation of the exchange rate can affect the manufacturing sector, a phenomenon related to Dutch disease (Corden–Neary 1982). Indeed, in more recent studies, Harding and Venables (2013) carry out an investigation that analyses 41 countries during the period 1970–2006, which shows that the export of non-renewable natural resources (oil and minerals) has the effect of reducing trade in the other sectors. Authors such as Bresser-Pereira (2008), also identify Dutch disease as the main obstacle to the growth of developing countries. Furthermore, Richard Auty (1990) analyzed the results of the industrialization strategy based on natural resources, specifically oil. This study shows that there are some risks associated with the exploitation of oil that prevents the success of this strategy. In 1993, the same author formulated the resource curse thesis. Indeed, Auty was the first author who used this expression to indicate the observable negative correlation between natural resource wealth and economic growth.

More recently, Sachs and Warner (1995, 2001) compare the growth of countries abundant in natural resources in relation to their GDP during the period 1970–1989. The authors find a negative correlation, which is not explained by other factors, such as, income level, price volatility or the type of commercial policy adopted (Sachs–Warner 1995). Therefore, the authors conclude that economies abundant in natural resources tend to grow at a considerable slower rate than economies without a large number of resources. The curse seems to be particularly acute in the case of oil-exporting countries (Frankel 2012).

On the whole, according to what is established in the literature (Sachs–Warner 1997, Neary–Wijnbergen 1983), the resource curse would come from macroeconomic imbalances produced by income, affecting investment decisions for the whole

economy. Moreover, the terms of trade in foreign trade have an effect on long-term development. Bearing in mind that the exchange ratio is the price of the good that a country exports divided by the price of the good that it imports, when the exchange ratio of the exported product falls, the country loses, which gives rise to the possibility posed by Bhagwati (2004), the author stating that a country can be in a worse condition after starting to export oil than if it had based its development on other sources of income, a phenomenon called "impoverishing growth".

Part of the explanation of the curse can be sought in the strength of the economy, which is not dependent on natural resources. In this context, Hausmann and Rigobon (2002) state that an economy which diversifies, in terms of having a significant non-oil tradable sector, will be much less affected by volatility than an economy that is already fully specialized in the oil sector. In Latin America, this maxim has great validity in development issues. Indeed, several studies have been developed in this region with the purpose of testing the resource curse hypothesis. In this context, the study by Rojas and Forero (2011) analyses possible correlations between oil exploitation and resource curse in a wide group of countries through three variables: growth of the Gross Domestic Product (GDP), decrease in indebtedness and industry growth. It is concluded that from a group of 15 countries, only two of them show favorable trends, while the other 13 show negative indicators in the three variables. This phenomenon is attributable to the resource curse. In light of these data, the low level of Latin American development over the years can reasonably be associated with the phenomenon of resource curse, as shown by the various regional studies conducted. It is also important to include the analysis of ecological problems, in which the implications of the resource curse have several dimensions, particularly, in the context of China's growing leadership in the Latin American region since 2000. It has increased demand for products from the extractivist industries. Specifically, in the case of Ecuador, this has promoted the discovery of new and promising hydrocarbon fields on land and sea, and the reutilization of the fields already exploited. Likewise, it has fostered an intensification of mining exploitation.

3. The case of Ecuador

For small, open economies such as Ecuador, the recent boom in raw materials has represented an opportunity to fully exploit its comparative advantages and complementarities, at the cost of deepening the economic dependence on China (Cunha et al. 2013, Casanova et al. 2015). Indeed, during the recent decade (2004–2014) Ecuador's per capita gross domestic product grew at an annual cumulative rate of 4.92% and its Human Development Index increased by 8.6%. In this period, Ecuador, like other countries in the region, supported its development with the export of natural resources, a dynamic that has been described as a kind of new conservative economic convergence, also known as the Consensus of the Commodities (Svampa 2013).

According to the World Bank, GDP growth during the period 2004–2010 was driven by high oil prices and substantial external financing. This stimulus enabled increased social spending and important investments, especially in the energy and transportation sectors. During this period, poverty declined from 37.6 percent to 22.5 percent. The Gini coefficient fell from 0.54 to 0.47, given that income growth of the

poorest population segment was higher than the average for the remainder of the population.

Nevertheless, this period of extraordinarily high prices ended in 2014. Therefore, these achievements are currently threatened by declining oil prices and the stronger U.S. dollar. Indeed, between 2014 and 2016, urban unemployment rose from 4.5 percent to 6.5 percent and urban underemployment increased from 11.7 percent to 18.8 percent. During this period, the poverty rate and the Gini coefficient remained largely unchanged. In this context, given Ecuador's lack of a local currency and limited fiscal savings, the government has been forced to reduce public investment and curb spending. Government officials have also mobilized different sources of external and domestic financing and have somewhat reduced spending. Furthermore, temporary measures have been applied to increase non-oil public income and restrict imports. These measures have briefly eased the effects of low oil prices. However, they have also increased public debt (World Bank 2017).

In addition, the natural resources industry has involved a high risk of illegal activities. The extractive industries, which make up more than half of Ecuador's exports, have been characterized by a lack of transparency regarding monetary issues and environmental impact (Zuckerman 2016). Indeed, in the last two years, countless cases of corruption associated with the negotiation and sale of oil to Chinese companies have been identified. Since 2008 Ecuador has borrowed over 11 billion USD from China, this money was mainly used to pay fiscal debt and build infrastructure for oil, mining and energy projects. This debt was mainly contracted with China Export-Import Bank and the Chinese Development Bank. Many of the loans have been in the 1–2 billion USD range, with interest rates of between 6% and 8%, and demand payment in barrels of crude oil (Finer 2017). Currently, the Ecuadorian external debt is of 37.75 billion dollars, which represents 38.8% of its GDP (World Bank 2017).

In 2013, Chinese money helped cover as much as 61% of the government's financing needs. In exchange, China has claimed nearly 90% of the country's oil shipments over the next few years, most of which it then trades around the world and especially in the United States. Currently, a new credit line is under negotiation, which would be in addition to $9 billion in financing that Ecuador is seeking from China for the construction of a refinery that will process 200,000 barrels of crude oil a day (Kuo 2014). The consequent risk is that Ecuador will lose its sovereignty and will be forced to drill for oil in its natural and ethnic reserves to repay its debts to China, indigenous peoples' rights will be violated and some of the most biodiverse areas in the world harmed. Many critics of the current administration states that Ecuador will resemble a wholly owned subsidiary of China, like many solvency-challenged yet resource-rich countries in sub-Saharan Africa (Salmon 2011).

4. Causes of the resource curse

With the background stated above, it is evident that in Latin America abundant *"marketable natural resources have been often an indicator of low levels of economic growth"* (Cori–Monni 2014, p.11). In this context, the development of Ecuador is also closely linked to the causes that explain the so-called resource curse. Therefore, after

the review of the literature about resource curse, below are, identified and analyzed, five principal explanations for it: (1) Dutch disease; (2) Misallocation of revenue deriving from the exploitation of resources; (3) Rent-seeking behavior; (4) Corruption; and (5) Level of institutional quality.

4.1. Dutch disease

There is wide selection of literature on Dutch disease, generally associated with an external impact from the increase in price of the main exports, which accounts for large inflows of foreign currency into a country. It generates a wealth effect and an appreciation of the real exchange rate, which has negative effects on the industrialization of other products (Magud–Sosa 2013). Therefore, the Dutch disease explanation suggests that a resource boom will divert a country's resources away from activities that are more conducive to long-term growth (Van Wijnbergen 1984).

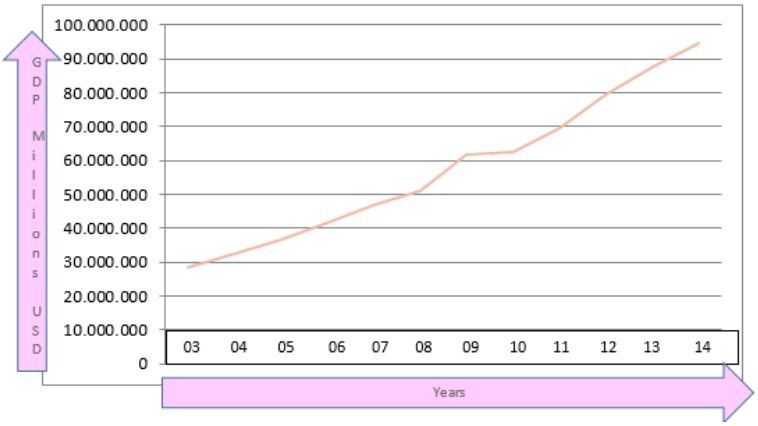
Generally, a resource boom causes the appreciation of the exchange rate, producing a contraction in manufacturing exports or displacement of capital and labor factors away from manufacturing towards the extractive industries and raising manufacturing costs as a result. Moreover, the appreciation of the exchange rate reduces the prices for tradable products, mainly manufactured goods and agricultural products relative to the prices of non-tradable products, mainly construction and services. Therefore, labor and capital are withdrawn from the tradable sector and flow into the non-tradable sector (Cori–Monni 2014).

In addition, foreign investment can be attracted by investment opportunities in the export boom sector. This causes further appreciation of the real exchange rate. Obviously foreign direct investment inflows would have negative impacts only if it is highly concentrated in the resource-intensive sector. The movement of resources between sectors may reduce capital accumulation. Furthermore, technological progress is faster in the tradable sector than in the non-tradable sector (Torvik 2001).

In this context, understanding if an economic system has really been affected by Dutch disease is an extremely complicated task that requires a much longer period of analysis than 2004–2014. It is important to emphasize that the Ecuadorian planning concept was based on the assumption that an initial primary export phase must precede redeployment of the production system (SENPLADES 2013). By increasing public spending, generated from the income of the extractive industry, there will be an increase in domestic demand and subsequently the industrial sector will be developed (higher added value) this fact will enable exports to be gradually replaced.

This step has been jeopardized by the effects of Dutch disease deriving from an increase in the exploitation of natural resources. This hypothesis is supported by data on GDP growth (Figure 1), trade balance (Figure 2) and the proportion of industrialized products in the country's total exports (Figure 3). Figure 1 shows a sustained growth in GDP during the period 2003 to 2014, mainly due to the high price of oil on the international market.

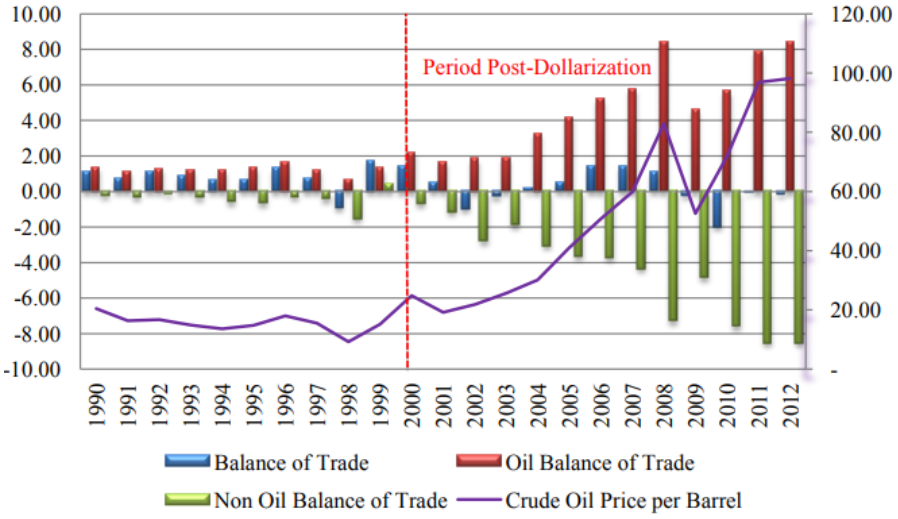
Figure 1 Growth of GDP in the period 2003-2014



Source: Central Bank of Ecuador (2016)

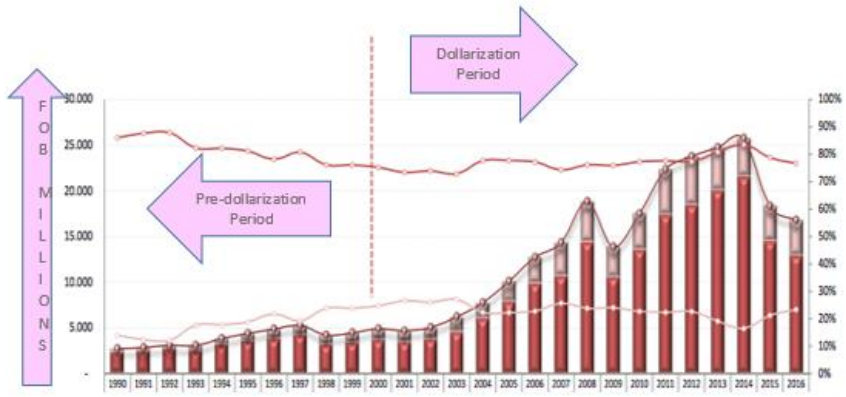
As can be seen in Figure 2, despite this sustained growth of GDP, the trade balance of Ecuador has a constant deficit and this deficit remains or increases despite the country's income increase from oil exports. This occurs even though since 2007, the Ecuadorian government has imposed quotas and taxes on the importation of all goods in order to balance the historical deficit in the trade balance and boost national production. However, despite the measures taken, the trade balance remains negative.

Figure 2 Total oil, non-oil trade balance (millions of USD) and average price of oil per barrel (USD), 1990–2012



Source: Central Bank of Ecuador (2016)

Figure 3 Exports of primary and industrialized products in Ecuador, 1990–2014 (in millions of USD)



Source: Central Bank of Ecuador (2016)

Finally, this pattern of primary exporting economy mainly supported by the export of oil is confirmed in Figure 3, where it can be seen that the export of primary goods is largely higher than the export of industrialized goods and this historical trend increases over time. After analyzing these graphs, it can be concluded that there is a marked contradiction between the objectives established by the government on sustainable development, diversification of exports and change of the productive matrix and the observed results. This shows an effect of Dutch disease in the Ecuadorian economy, which in turn is strongly linked to the theory of the resource curse, in the long term would prevent the country from establishing a sustainable development model. In the next few years it is expected that Ecuador will maintain this trend and continue intensifying the exploitation of oil and other extractive industries, as well as increasing its levels of indebtedness

4.2. Misallocation of revenue deriving from the exploitation of resources

In countries with large amount of resources, the management of the national savings account is crucial. Indeed, there is empirical evidence that those countries with higher savings rates are in better condition to avoid the resource curse (Atkinson–Hamilton 2003, Boyce–Emery 2005, Neumayer 2004). For instance, those developing countries that have managed to escape from resource curse, such as Malaysia and Thailand, have higher levels of wealth-adjusted savings rate than those that have not been able to escape, like Venezuela, Congo and Peru (World Bank 2011).

In this context, the negative rates of net adjusted savings, together with an increase in consumption of natural resources, is the first indicator of misallocation of revenues from natural resources exploitation. This is evidently the case of Ecuador. Particularly, negative values of genuine savings characterize countries with effects of resource curse whereas positive values of genuine savings are associated with countries that have overcome it (Constantini–Monni 2008). Furthermore, the

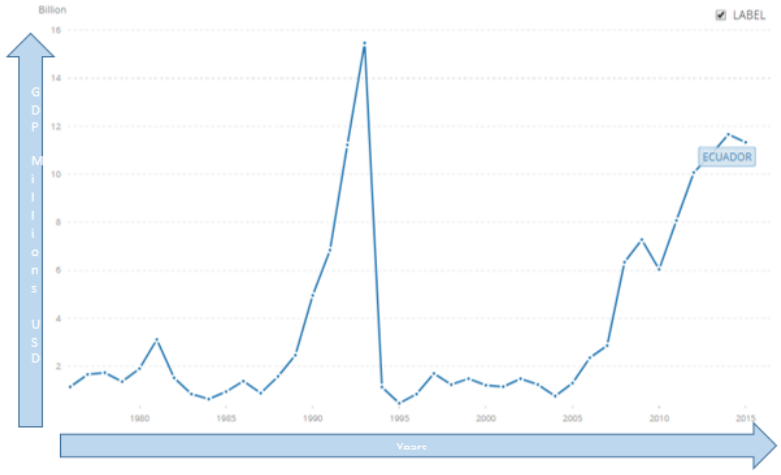
investment decision of the resources coming from oil exploitation is biased by distorted price signals, a situation in which the resource apparently looks more profitable than it really is, mainly due to production costs. Thus, it is exploited at an unsustainable rate. Overexploitation of resources negatively affects the economic growth of a country in the long term (Atkinson–Hamilton 2003).

Several authors have studied the factors that have negative effects on the growth of countries rich in natural resources. For instance, Atkinson and Hamilton (2003) carried out a study based on empirical evidence that showed how unsustainable management of income derived from the exploitation of natural resources is directly related to low rates of economic growth. More specifically, sustainable management of income derived from the exploitation of natural resources is identified by a policy of investment deriving from the use of natural resources in alternative activities that can generate additional sources of wealth so that the losses caused by the depletion of non-renewable resources are compensated for by this new income (Solow 1986).

In this context, several studies have shown that countries with high income deriving from the extractive industry encounter problems when applying a sustainable policy. Investment of this income in activities that aim to increase the human capital required for a more advanced state of service-based, long-term development is usually insufficient. In this sense, the theory of misallocation of revenue is closely linked to the effects of Dutch disease which account for the tendency to concentrate on investment in the primary sector.

In the case of Ecuador, there was a failure to reinvest. The resources from oil were used for public expenditure and consumption instead of investment. Therefore, it has not fostered long-term development. To analyze in depth, the misallocation of revenue derived from the exploitation of resources, this study would take into account the information on Ecuadorian Genuine Savings during the years 2004–2014. In Figure 4, it can be seen that although the Genuine Savings increased during the period 2004 to 2014, they started to decrease after 2014, when the oil price boom ended. Likewise, in 2009 a reduction in genuine savings can be observed, despite the fact that during this period, the highest revenue was recorded, as a result of high oil prices on the international market. After analyzing these data, it can be concluded that while adjusted net savings, increased during the period of the oil price boom, these revenues could not be reinvested in other industries in order to change the primary exporting pattern of the economy with the aim of achieving a more sustainable economic model. Therefore, since 2014 this indicator has decreased again, showing a strict dependence of the economy on the oil export.

Figure 4 Adjusted net savings, excluding particulate emission damage, 1975–2015 (current US dollars)



Source: World Bank (2018)

4.3. Rent-seeking behavior

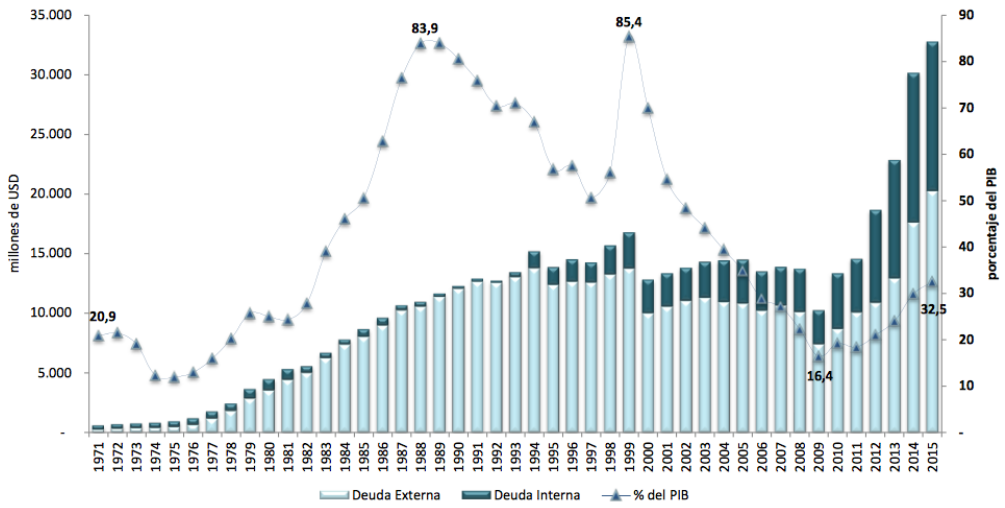
This explanation of the resource curse is based on the fact that the abundance of income fosters rent-seeking behavior because these resources are of easy appropriation. Thus, these resources encourage political and business interest, in search of public favors, especially in countries with high levels of corruption, such as Ecuador. The management of these high incomes are concentrated in the business and political elite. Hence, it impedes that these resources be redistributed adequately for the country development, fomenting political struggle for the appropriation of these resources (Bhagwati 1982).

In this context, Torvik (2002) explains that when there is a resource boom, rent-seeking activities tend to increase. In the case of Ecuador, the search for rents became an increasingly attractive activity in the oil sector, while in the other sectors the same level of income was maintained. Therefore, entrepreneurs from other sectors also sought new opportunities.

Certainly, according to Vicente (2010), rent-seeking activities leads to an increase in the level of corruption and the search for greater concentration of political power. In summary, the studies based on empirical evidence indicate that from every point of view rent-seeking activities are detrimental for a country's development, especially in those countries that have a great wealth of natural resources and a weak institutional framework.

In the specific case of Ecuador, it can be concluded that the increase in income due to high oil prices, has led to an increase in public spending and long-term indebtedness, rather than encourage the development of the country, and as can be observed in Figure 5, the external debt of Ecuador has increased over time in spite the high revenues from oil industry.

Figure 5 External debt of Ecuador, 1971–2015 (Billions of US dollars)



Source: Central Bank of Ecuador (2018)

In this context, according to La Ferrara (2008), countries with high revenues from the export of petroleum, have similar institutional characteristics linked to the extractivist industry. In fact, these countries do not have the necessary technology to exploit their resources intensively. Therefore, foreign companies take advantage of this weakness, as an opportunity to benefit from resource exploitation, and seek to obtain permits from local governments encouraging rent-seeking behavior among local elites.

In this sense, within the context of the leadership of Chinese investment in the Latin American region, Ecuador has requested credits from the Chinese banks several times, in exchange for the granting of contracts for the exploitation of oil and minerals, as well as, for the anticipated sale of these resources in exchange for immediate liquidity for the Ecuadorian government (Salmon 2011). Indeed, China is close to enjoying monopoly control of crude oil exports in Ecuador. In November 2013, PetroEcuador, the State-owned oil company, signed an agreement with the Chinese state-owned company, PetroChina, in which Ecuador undertook to sell it over 90% of its oil production until 2022 (Schneyer–Medina 2013).

As can be seen in Figure 5, since 2011, Ecuador's external debt level has steadily increased to almost triple the debt contracted in 2000, i.e. from a debt of 12,000 million USD in 2000, Ecuador has an indebtedness of approximately 32,000 million USD in 2018, despite the evident increase in quantity and price of oil exports. Therefore, it is demonstrated that Ecuador became completely dependent on the export of oil and its commitment of pre-sale with Chinese companies.

4.4. Corruption

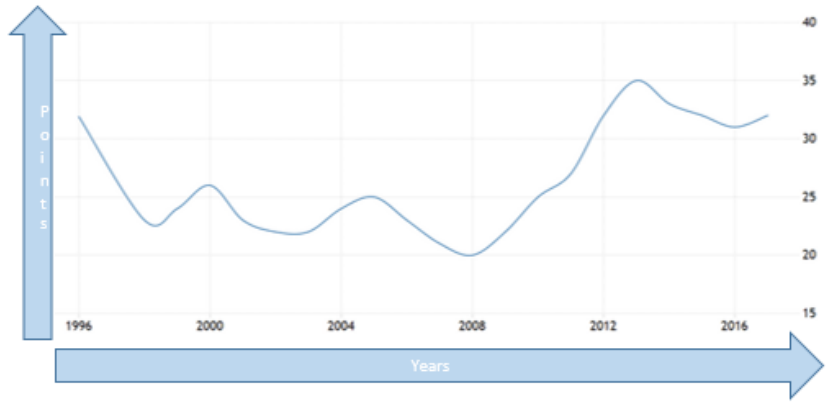
Above all, corruption related to the export of oil resources in Ecuador is a deep and historical problem. Indeed, the extractive industries, which make up more than half of

Ecuador's exports, have been characterized by a lack of transparency in regard to money and environmental impact data (Business Anticorruption Portal 2016). Certainly, in 2014, the U.S. Department of State cited Ecuador's corruption as a key human-rights problem. According to Freedom House (2015), "*Ecuador has long been racked by corruption*" and its weak judicial oversight and investigative resources perpetuate a culture of impunity.

In fact, Transparency International's 2017 Corruption Perception Index ranks Ecuador in the 117th place out of 176 countries. It scores 32/100. Therefore, it is ranked lower than countries like Ethiopia or Tanzania, located in Sub Saharan Africa. In this context, according to the paper, corruption plagues Ecuador's oil deals with China and Petroecuador (Ecuador's government-owned oil firm), was the center of "*a thriving culture of corruption*" involving "*oil executives, middlemen, and government officials*", who were enriching themselves through illegal "*commissions*" on oil being shipped to PetroChina in exchange for loans and credit. Therefore, business relations between China and Ecuador "*have created a climate of corruption on all sides*" (Zuckerman 2016). In this context, China has also tried to secure its loans by pushing for a massive expansion of Ecuador's oil frontier, especially in the central-south Amazon and Yasuní National Park that are considered protected natural areas by UNESCO, because of their biodiversity and large native population.

Figure 6 charts the evolution of the corruption index in Ecuador. It is very interesting to note that during the period 2014–2016, the index decreases. It means an increase in corruption associated with higher revenues from oil.

Figure 6 Ecuador corruption index, historical evolution, 1996–2017



Source: Transparency International (2018)

It is also important to state that corruption is a very difficult variable to measure because there is no real data on it available. Indeed, most governments try to hide this information from public scrutiny. In this context, the corruption index is mainly a statistic about perception. Specifically, over the last 4 years there have been countless cases of corruption associated with the oil industry in Ecuador, so the incidence of corruption could be much higher than the data analyzed in this paper.

4.5. Level of institutional quality

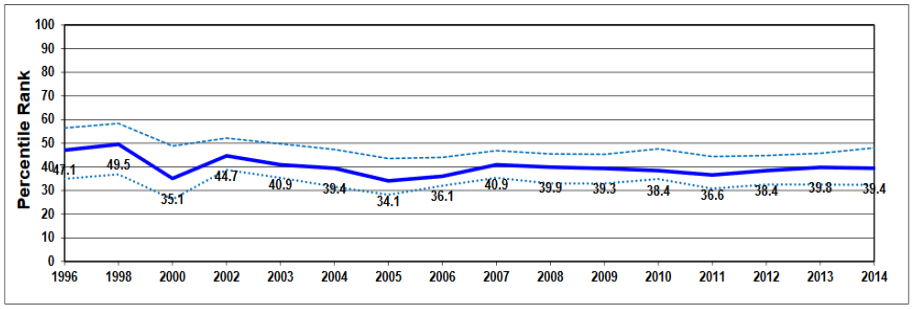
The role of institutions is fundamental to the management of oil resources. Indeed, when a country has a lower level of institutional quality, oil revenues will have more negative effects on the whole economy (Bahar–Santos 2018). In this context, weak institutions are likely to be responsible for several economic problems in developing countries, like lower investment, slower productivity growth, lower per capita income and overall slower output growth. Conversely, good institutions ensure efficient factor allocation, enable investment in higher-return activities, reduce uncertainty and frictions, favor convergence between private and social returns and ease economic agents' coordination (Jude–Levieuge 2017).

Therefore, the role of the institutions is extremely important as an explanation of resource curse. Indeed, the level of institutional quality is a factor that can transform natural resources into a disadvantage or an advantage for a country (Boschini et al. 2003, Mehlum et al. 2006, Van der Ploeg 2011). In this context, the measurement of the institutional quality of a country is a highly difficult job, however, and in order to analyze the level of institutional quality in Ecuador, information on institutional quality index and governance indicators provided by the World Bank will be considered.

Analyzing the data on the level of institutional quality in Ecuador, it can be observed that the country has historically had very poor institutional quality. Therefore, it obtains the worst scores for the categories of: Regulatory Quality, Rule of Law and Control of Corruption. These factors are closely related to the reasons discussed above regarding misallocation of resources, rent-seeking behavior and corruption. Indeed, Ecuador is among the 20% of countries with the worst performance in terms of institutional quality around the world, which obviously has had a lot to do with the government's failure to promote a new economic model to encourage product diversification and sustainability in the long term.

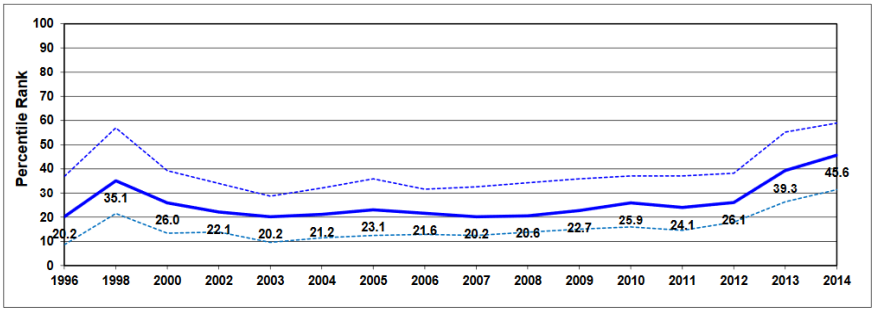
Finally, after the analysis on institutional quality, it can be concluded that Ecuador's oil revenue received during 2004–2014, was exposed to all the influences that justify the hypothesis of resource curse. In this context, poor institutional quality has been the most important factor since it has allowed other factors to flourish, such as; corruption, lack of investment in other industries and progressively increasing indebtedness.

Figure 7 Ecuador Voice and Accountability, 1996–2014



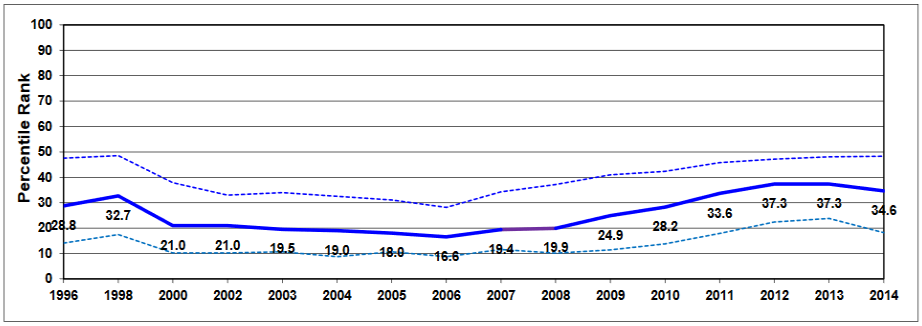
Source: World Bank (2016)

Figure 8 Ecuador Political Stability and Absence of Violence/Terrorism, 1996–2014



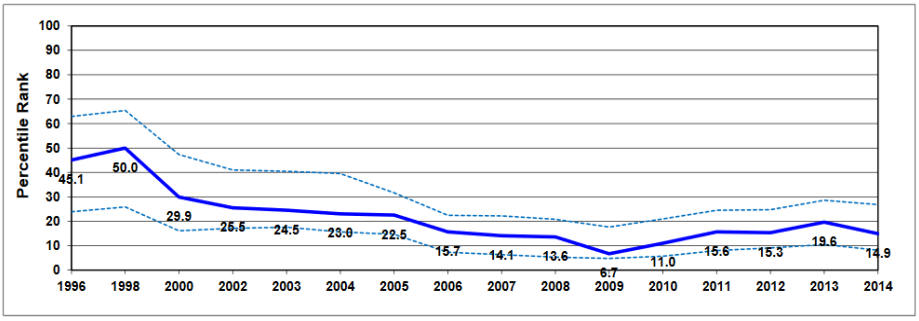
Source: World Bank (2016)

Figure 9 Ecuador Government Effectiveness, 1996–2014



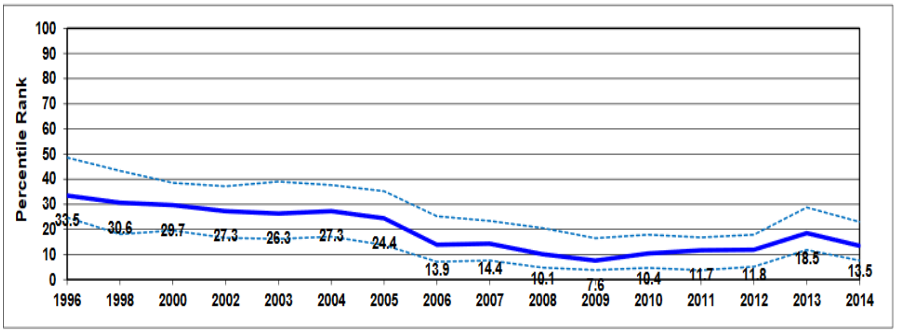
Source: World Bank (2016)

Figure 10 Ecuador Regulatory Quality, 1996–2014



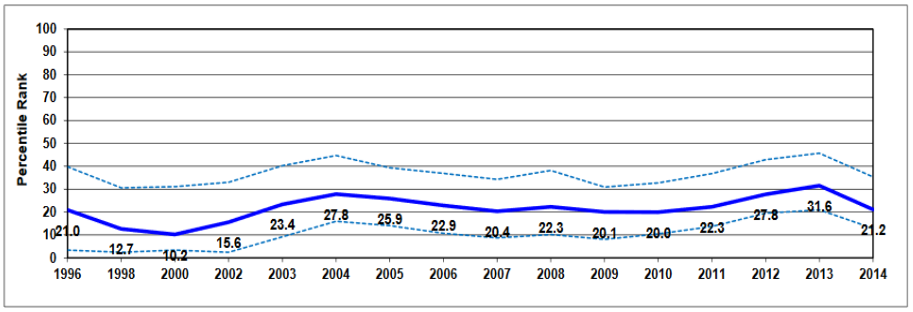
Source: World Bank (2016)

Figure 11 Rule of Law, 1996–2014



Source: World Bank (2016)

Figure 12 Control of Corruption, 1996–2014



Source: World Bank (2016)

5. Conclusions

In this paper, five reasons have been analyzed to demonstrate the existence of resource curse hypothesis in Ecuador, among them, Dutch disease, misallocation of revenue deriving from the exploitation of resources, rent-seeking behavior, corruption, and inefficient and unstable institutions. After this analysis, it is evidenced that Ecuador has the necessary conditions to be considered as case of resource curse, mainly from 2011, when the debt with China increased progressively in exchange for oil pre-sale, as well as, other extractive industries, such as; copper and aluminum. Above all, Ecuador has become more dependent on the oil industry over time. The abundance of oil revenue has discouraged investment in economic diversification, preventing the country from having a more stable economy in the long term. In a historical context, primary goods neither have been a sustainable source of income nor have served for development purposes. Therefore, Ecuador does not possess the conditions that the hypothesis considers necessary to protect itself from the possible negative effects caused by an increase in the exploitation of natural resources.

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