



Oil and development in Brazil: Between an extractive and an industrialization strategy

M. José Paz¹

Researcher and Lecturer of Development Economics, University Complutense of Madrid (UCM), Madrid, Spain



HIGHLIGHTS

- We analyze the Brazilian oil sector's institutional framework.
- We analyze the influence of the institutional framework in the Brazilian oil sector performance.
- We identify the key features of a resource-based industrialization strategy.
- We assess the performance of the Brazilian oil sector and, in particular, its industrialization path.

ARTICLE INFO

Article history:

Received 10 April 2014
Received in revised form
17 June 2014
Accepted 18 June 2014
Available online 11 July 2014

Keywords:

Oil sector
Industrialization
Institutional framework
Brazil

ABSTRACT

In the wake of the commodity boom, “new development strategies” in Latin America are centering on the industrialization of natural resources, thereby questioning the “resource curse” thesis and linking the economic performance of this activity with the institutional framework. In this context, the aim of this paper focusing on the Brazilian oil sector is to analyze the implementation of a resource-based industrialization strategy. After analyzing the Brazilian institutional framework and identifying the key features of a resource-based industrialization strategy, we assess its development and identify its scope and limitations.

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1. Introduction

Since the end of the last century, policy makers and academics have discussed new industrialization policies (Koshaka, 2004; Fine et al., 2001). Three outstanding issues have contributed to the emergence of these new proposals: (i) the results of neoliberal policy, which have pushed researchers and policy makers to search for alternatives; (ii) the difficulty in imitating the Asian industrialization pattern in other developing countries of Africa and Latin America (LA); and (iii) the boom in commodities since 2003.

In short, it is no coincidence that, in this context, a chief element in the new policies became the industrialization from natural resources (NR). Thus do we find it necessary and relevant to assess the performance of the NR sectors and, in particular, their industrialization path across different countries. In this paper we will analyze the case of the Brazilian oil sector. Our paper asks

whether the dynamics followed in the oil sector respond to the profile of an industrialization strategy from oil and what results have so far been achieved.

To develop this analysis, our article is based on the following assumption: although the institutional framework (IF) should not be the only factor influencing sector performance (which also depend on business strategies and international oil prices), it does indeed play a central role. This assumption is consistent with the institutional literature and is also supported by empirical evidence shown by several authors who have analyzed the relationship between NR and development.

Analysis of the Brazilian experience in the oil sector is interesting for two reasons: (i) the growing importance of this activity to the Brazilian economy, placing the country among the top regional oil producers; and (ii) the existence of several factors (regulatory, technological, and productive) that put Brazil in a good position to implement a resource-based industrialization strategy.

To answer the research question, our paper is divided in two fundamental sections: section two displays the analytical proposal to develop the case study identifying the main

E-mail address: mjpazant@ccee.ucm.es

¹ Tel.: +34 610 314 691, Pabellón de Segundo, despacho 103, Campus de Somosaguas s/n, Pozuelo de Alarcón, 28223 Madrid, Spain.

outputs that must define an industrialization based on NR. After clarifying our method, we analyze the Brazilian oil sector's IF (Section 3.1) and, then, analyzes (Section 3.2) whether the Brazilian oil sector's performance since the end of the monopoly fulfills the industrialization outputs, and whether the IF has contributed to this.

2. Methods

Our method consists of a structured case study. That requires obtaining, through a literature review, a theoretical-analytical approach in which a number of key variables and causal relationships are identified. Then, a suitable case study is chosen in order to analyze the behavior of these variables. Given our objective, the following literature review leads us to identify the key variables to assess the outcomes of the Brazilian oil sector in terms of industrialization.

Since the beginning of 21st century, many governments in developing countries have sought to implement a resource-based industrialization strategy. Political action has been supported by much of the academic discourse, which has shown renewed interest in analyzing the relationship between natural resources and development (Lederman and Malloney, 2007; Humphreys et al., 2007). Apart from those authors who have traditionally cited these links in terms of the known "resource curse" (Stevens, 2003; Sachs and Warner, 1999; Ross, 1999), others question such an approach due to the absence of social and political factors (Ross, 2006). The latter also indicate the limitations and deficiencies of empirical analysis that seek to validate the hypothesis of the "curse".

In response to these limitations, the most recent works are giving importance to institutional and political variables as strong determinants of the resource/development relationship (Cypher, 2010; Lederman and Malloney, 2007; Mehlum et al., 2006). From this, some have proposed that resource-rich Latin American countries adopt development strategies which, drawing on high prices and booming demand for raw materials, initiate a process of industrialization based on NR (Pérez, 2010; Machinea and Vera, 2007; ECLAC/GTZ, 2005). Hence, the key issue is to identify the elements that would assist an industrialization strategy to overcome the evils associated with extractive economies. These evils are widely documented in the literature, and among them we might highlight "Dutch disease", referring to macroeconomic problems which may adversely affect industrial performance, price volatility and vulnerability to external shocks, which may cause collapses in growth, and rentism, or the problems associated with dependency on and distribution of rents.²

In light of these problems, and in order to overcome them, since the late 1990s new studies have emerged examining the conditions under which the exploitation of NR can promote a process of industrialization that contributes to economic development.³ A review of the most outstanding works allows us to identify the key characteristics of a process of industrialization based on NR. Among different authors, it is possible to highlight two major dimensions in which the different works are focused more specifically: (i) first, a productive dimension

fundamentally linked to a neo-structuralist approach developed chiefly by economists linked to the Economic Commission for Latin America and Caribbean of United Nations (ECLAC); (ii) second, a fiscal dimension, on which NR literature is more focused, commonly addressed with a neo-institutionalist approach.

Starting with the first, several studies which have awarded varying importance to the driving role of the state and public policy agree that the key to proper exploitation of NR is to achieve the development of backward and forward linkages (Pérez, 2010; ECLAC/GTZ, 2005; Ramos, 1998). These linkages should encourage production and export diversification to overcome the dualism that traditionally characterizes NR-rich economies (ECLAC/GTZ, 2005: 232–234). In addition, this diversification should help to reduce vulnerability to external shocks that, as Hausman and Rodríguez (2006) show, has been determinant in the economic performance of Venezuela and other oil-rich countries. Moreover, Pérez (2010) notes that the development of such linkages may contribute to the acquisition of productive and technological capabilities in sectors that serve as the protagonists of a new technological revolution (biotechnology, nanotechnology, bioelectronics, and new materials). Therefore, if productive linkages are a key factor of an industrialization strategy based on NR, how are these linkages to be achieved? Two elements emerge as critical: first, sustained growth of natural resource production, which forms the starting point of these linkages; second, an industrial policy that favors the development of the linkages. From the evidence exhibited by Norway, New Zealand, and Australia, as well as by some LA experiences, ECLAC (op.cit. pp. 25) points out that to encourage these linkages, the industrial policy should support the interaction between different actors, create related institutions, and ensure that the actors adapt to technological change. Our case study will show whether or not such elements are present in the Brazilian case, how they have developed, and what their results have been.

The proposals emanating from the neo-structuralist approach, being fundamental to the industrialization strategy, do not respond to all the challenges to overcoming primary-export insertion. Hence, we consider it necessary to complement the productive dimension with macroeconomic dimension that focuses more specifically on the challenges associated with the use of rents, also taking into account the needs of the productive dimension. In this regard, the studies by Sinnott et al. (2007: 19 and 23–29) and Ranis (quoted in Auty, 1998: 2–3) allow us to identify the main problems associated with NR rents: currency appreciation, rent-seeking, the disincentive to developing an appropriate fiscal framework, inequality, and inefficiency in the distribution and use of public incomes. There is a relative consensus, built on the Norwegian experience, regarding policies to overcome these problems. These policies must combine two objectives (Sinnott et al., 2007; From, 2008): (i) to make consistent the macroeconomic and industrial policy through proper management of exchange rates and monetary policy, which curb potential currency appreciation; and (ii) to ensure that efficient use of rents combines both productive and social objectives. In this sense, Mehlum et al. (2006) and Torvik (2002) have showed that the best performing oil countries are those that have provided the largest share of income to productive investment; but as Cypher (2010): 646 has stated, rents must also contribute "to a reduction in income and wealth inequality in order to build effective demand for the internal market as well as to address the issue of economic justice".

Taking into account these contributions we suggest that a resource-based development strategy can be defined by four key features that should show advancement to ensure the success of

² Sinnott et al. (2007) provide a complete summary of these problems including a comprehensive review of the literature.

³ Di John (2011) as well as Palazuelos and Fernández (2011) propose a set of conditions to be met by oil and gas exploitation. In the first case, the conditions should ensure development, ambiguously defined, while in the second case, the aim is what the authors call "oil empowerment". Neither work specifically addresses the issue of industrialization, this being the differentiation from our proposal.

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