

Blessing or curse: Impacts of the Brazilian Pre-Salt oil exploration[☆]

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Abstract

The discoveries of oil and gas in the so-called “Pre-Salt layer” have triggered a lot of discussions about their economic effect. In this paper we discuss in detail a less discussed dimension: the impact of Pre-Salt layer in the structure of the Brazilian economy, especially the composition of the industry and exports. Similar consequences in the country of “Dutch disease” and “deindustrialization” due to revenues from oil exports are evaluated. The methodology used is a dynamic global general equilibrium model, with specific features for the treatment of the issues raised.

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Keywords: Pre-Salt; Dutch disease; Industry; Computable general equilibrium model

Resumo

As descobertas de reservas de petróleo e gás na chamada “camada de Pré-sal” tem desencadeado uma série de discussões acerca do seu efeito econômico. Neste trabalho abordamos detalhadamente uma dimensão menos discutida: os impactos do Pré-Sal na estrutura da economia brasileira, especialmente da composição da indústria e da pauta de exportações. Consequências no país similares às da “doença holandesa” e “desindustrialização”, em decorrência das receitas com as exportações de Petróleo, são avaliadas. A metodologia utilizada é um modelo de equilíbrio geral computável global, com características específicas para o tratamento das questões levantadas.

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Palavras-chave: Pré-sal; Doença Holandesa; Indústria; modelo de equilíbrio geral computável

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1. The Pre-Salt oil reserves and economic impacts in Brazil

The energy issue is a topic of great importance in the Brazilian economy, which has attracted academic, government and media discussions.

The high profile given to megareserves discoveries of oil in the country makes room for a new paradigm of economic development because it involves aspects related to both the potential for economic growth, social development and energy security and environmental sustainability strategies and even geopolitical and national security.¹

The country, which until 2006 was not self-sufficient in oil, Brazil sees the possibility of becoming a major world player in the production of this energy commodity. The discoveries of oil and natural gas in 2007 in the so called “Pre-Salt layer” (extending from the coast of Espírito Santo to Santa Catarina) bring new challenges for the country, once given the huge potential reserves, Brazil would become a net exporter of oil and oil products. To get an idea of its potential, based on conservative estimates, the Pre-Salt should double the oil reserves of the country to 31 billion barrels, only considering the portion already discovered (EXAME, 2012). It is believed that there are another 87 billion barrels undiscovered, which would put the country at the level of reserves in Iraq,² for example. Moreover, for every three barrels of oil discovered in the world in the last five years, one was discovered in Brazil, which still accounts for 63% of global oil discoveries in deep waters. Projections indicate that, with the development of newly discovered reserves, Brazil is the country with the highest production growth from countries outside OPEC in 2030 (EXAME, 2012; ANP, 2012).

According to the National Petroleum Agency (ANP), investment demand for the Pre-Salt is expected to exceed 400 billion dollars in materials, systems, equipment and services by 2020 (ANP, 2012). Among the investments already announced are the Petrobras – which announced in its Business Plan (PETROBRAS, 2012), \$ 142 billion of investments for the five-year period from 2012 to 2016 – the British BG Group, with investments of \$ 30 billion and Repsol YPF to US \$ 14 billion (Ernst and Young Tergo, 2011).

Nevertheless, Brazil is faced with numerous challenges with the Pre-Salt. One is to reconcile the blessings afforded by exploration, such as increased production and export possibilities and the large increase in public revenues, with the threat of fiscal and macroeconomic imbalances, the literature has termed “the resource curse”. The idea of the resource curse date of the pioneering work of ECLAC (Prebisch, 1949; Singer, 1950; Furtado, 1957) that predicts, in general terms, that the abundance of natural resources can have an adverse effect on the country’s development. The abundance of natural resources would impact on the productivity of the economy, deteriorating terms of trade and specialization in primary commodities in developing countries. Furtado (1957), for example, studies the case of Venezuela and implications of its dependence on oil. In recent decades, the literature has been addressing this problem (Auty and Gelb, 2001; Sachs and Warner, 1995; Auty, 1990; Gelb, 1988; Stevens, 1986; Corden and Neary, 1982),³ in spite of the empirical evidence that many countries abundant in natural resources tend to grow more slowly than similar countries that do not have the same allocation of resources. The main channel blamed for this effect is linked to the loss of domestic competitiveness caused by the appreciation of the local currency, due to the low cost of exported products that bring significant revenues in foreign currency into the local economy industries.

This discussion goes back to the phenomenon occurred in Holland in the 1960s, when the discovery of large natural gas deposits had diverse effects on resource allocation in the economy. If, on the one hand, exports provided an increase in income, on the other, the currency appreciation, due to the entry of foreign exchange from sales of gas, reduced the competitiveness of exports of manufactured products, redirecting specialization for primary products intensive in natural resources. Thus, the discovery caused a shrinking of the manufacturing sector as a result of the shift factors for the extraction of natural resources. This phenomenon is known in the literature as “Dutch disease” (Xavier, 2011; Nakahodo and Jank, 2006; Corden, 1984; Corden and Neary, 1982).⁴ Ultimately this phenomenon would trigger a

¹ Another question that too has been raised is the discussion involving the collection and distribution of royalties between regions.

² The oil reserves of Iraq stood at 115 billion barrels in 2011 (BP statistics, 2012).

³ An extensive literature review on the subject can be found in Stevens (2003).

⁴ The literature suggests that some countries have managed to avoid the supposed “curse, receiving the “blessing of the abundance of natural resources. Are the cases of Chile (Hojman, 2002), Indonesia (Booth, 1995), Malaysia (Rasiah and Shari, 2001) and Norway (Wright and Czelusta, 2007). Among the measures adopted by these countries are exchange rate policies to avoid excessive appreciation of the exchange rate, policies targeting the revenues to investment in productive activities through stabilization funds or earmarked revenue streams and encouraging private sector participation in investments (Stevens, 2003).

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