Brazilian “developmental state” reloaded? Brazilian industrial policy for the oil and gas in the 21st Century
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Abstract
In the last few years, there has been a growing debate about the reemergence of the industrial policy in developing economies. In comparison with the heydays of the XX century, industrial growth strategies take place now in a context of a more liberalized international economy and of dominance of China as the “manufacturer” of the world. In Brazil this debate has been translated into concrete policies that try to harness the potential brought by the exploration of natural resources – specifically its booming oil and gas industry. The more visible policy in that sense has been the adoption by the Brazilian government of local content requirements for exploration and production activities in oil fields since 1998. As a main goal, local content has been thought as way to improve industrial output competitiveness, forcing oil companies to buy equipment and services from domestic suppliers and has been particularly strengthened since 2002 with the election of President Lula from the Worker’s Party.

The purpose of this paper is to discuss how Brazilian authorities have been framing and implementing the local content requirements in a broader strategy of industrial development. It addresses the question whether Brazil is renewing its stakes in traditional import-substitution policies that dominated its own development through the 1980s, or is finding a new way of formulating and implementing industrial policy. Adopting a theoretical framework based on the discursive institutionalism literature, we propose that the model of local content requirements in Brazil results from a continuation of previous paradigms of national development based on import-substitutions strategies. A view that, despite the incorporation of some elements of current debates about an optimal industrial policy, seems to differ very little in substance from the Brazilian model of industrialization adopted in previous decades. Preliminary results, based on data collected through interviews with policy-makers and business representatives, show that the current model of local content requirement seems to suffer from excessive ambitions and old practices. First, its goals of job creation and technological innovation based on firms installed in Brazil (either

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domestic or foreign-owned) are targeted to all sectors of the broad supply-chain of the O&G industry – it lacks a clear distinction either regarding segments that have potential to internationalize or areas the country may build technological advantages. Second, the policy does not establish sunset provisions making it indistinguishable from a traditional protectionist measure. Third, it has been followed by few structural and horizontal reforms that could reduce barriers for companies based in Brazil to compete internationally. As a result, local content requirements currently implemented by the Brazilian government seem to hardly differ from classical ISI policies, despite the efforts of the government to present it otherwise.

I. Introduction

The last decade has seen a growing debate about the reemergence of the developmental state as a result of the fading hegemony of neo-liberal approaches to economic development. Amidst this debate, industrial policy initiatives are now back at the top of the agenda of several governments in both developed and developing countries as alternatives to create jobs and promote economic growth (Stiglitz et al. 2013). In comparison with the heydays of the 20th century, when governments around the world had more room to pursue different strategies of industrial development and to help their economies to “climb the ladder”, the current international context is rather different. Industrial growth strategies take place now in a more liberalized global economy – especially for financial flows – and stricter rules of international trade and intellectual property, limiting the potential instruments at disposal of governments. Additionally, the rise of China as the “manufacturer” of the world poses extra challenges for countries to discover their comparative advantages in the global economy. Intellectually, industrial policy debates also take place in contexts in which past experiences have been exhaustively scrutinized by academics and policy-makers. Both critics and supporters of industrial policy enroll many cases of success and failure around the world to support their positions. While sceptics point out the misallocation and capture of resources common to failed experiences, more positive analysis show how successful industrial policies can bring economic (and social) development to a country.
In such context, one particular initiative that is increasingly obtaining space on the agenda of governments is the implementation of local content requirements (LCR). In broad terms, LCR consist in the establishment of incentives or mandatory rules for companies investing in one country to buy services and supplies from domestic suppliers and service providers. Governments have been operationalizing LCR through different formats and aiming to achieve a variety of objectives ranging from job creation and professional training to technology transfer and promotion of R&D by domestic firms. Such initiatives are becoming particularly popular regarding the exploration natural resources, such as oil and gas reserves (Tordo et al. 2013). With the general increase in commodity prices of the last decade, companies and investors willing to extract natural resources seem to be more susceptible to accept this type of imposition despite LCR’s controversial aspects regarding the World Trade Organization (WTO) rules.

An important theoretical and practical issue of the debate around LCR has been about how these measures can be used in more efficient ways than previous experiences with import substitution policies. In other words, how can LCR serve the purpose of generating opportunities to companies acquire sustainable competitive advantages and contribute to broader economic development, while avoiding the re-edition of entry barriers that end up favoring inefficiency and increased costs for society?

In Brazil the LCR debate re-emerged during the late 1990s as a compensation for the liberalization of the economy and privatization of state-owned companies. It has become particularly strong in the ship-building industry linked to the oil and gas (O&G) sector, where it was engendered as a compensatory mechanism for the opening of the O&G market for foreign companies in 1998. Interestingly enough, LCR gradually has become a driving concept for the whole industrial policy in Brazil over the course of the last three consecutive governments of the Worker’s Party (PT). Nowadays, LCR has turned into a structural pillar of Brazilian industrial policy, as it has been applied to new sectors (i.e. automobiles, telecommunications) and being recently considered to be adopted in additional ones (i.e. mining, energy). Additionally, in the O&G sector, the government used the implementation process of
LCR to make both the state-owned company Petrobrás and the National Petroleum Agency (ANP) – a regulatory agency – important actors of industrial policy in Brazil.

Such development represents an important rupture with previous liberalizing policies adopted during the 1990s and is part of the consolidation in Brazil of what others have labeled as a “new developmental regime” (Wylde 2012), neo-corporatism (Doktor 2007), neo-mercantilism (Kröger 2008), or a “post-neoliberal agenda” (Diniz et al. 2012). Despite different emphasis, all those labels share in common the perspective that the Brazilian state has a renewed role in promoting economic development. What is interesting is that in most of these analyses this shift appears to have been done without major (formal) institutional changes in comparison with the previous liberalizing governments. As others have also argued, Presidents Lula and Dilma Roussef have relied extensively on the existing National Bank for Social and Economic Development (BNDES) in order to expand funding to consolidate and internationalize “national champions”, while supporting different industrial sectors (Almeida 2009, Lazzarini 2010). However, these analyses have overlooked how LCR have evolved in the O&G sector and have diffused to other sectors particularly during the presidency of Dilma Roussef. Thus, to look at the recent trajectory of LCR in Brazil, it is an important way to identify conflicts about the goals of the industrial policy within this so-called new developmental state. As LCR assume the tasks of job creation and of development of a competitive and innovative supply chain, contradictions arise along their implementation. These conflicts emerge not only because of different views between government and private sector, but also because of dissonant views within the Brazilian government and the private sector itself.

Taking in consideration this conflictive context, the purpose of this exploratory paper is to discuss how Brazilian authorities have been framing and implementing LCR in the O&G sector and the implications for a broader strategy of industrial development. We focus on the question of whether Brazil is renewing its stakes in traditional import-substitution policies that dominated its own development until the 1980s, or is pursuing a new way of formulating and implementing industrial policy. Adopting a theoretical framework based on the discursive institutionalism literature, we propose that the model of local content requirements in Brazil has been guided mainly by previous paradigms of national development based on import-substitutions.
strategies. A view that, despite the incorporation of some elements of current debates about an optimal industrial policy, seems to differ very little in substance from the Brazilian model of industrialization adopted during previous decades.

The empirical material collected so far consists in 22 interviews with policy-makers, business representatives, and technical professionals of the O&G sector; public documents and reports made by governmental agencies and other public-private bodies; and secondary sources. Our preliminary analysis shows that the current model of LCR seems to suffer in its formulation both from excessive and low ambitions and it has been hindered in its implementation by old practices. On one hand, its goals of job creation and technological catch-up based on firms installed in Brazil (either domestic or foreign-owned) are targeted to all sectors of the broad supply-chain of the O&G industry – it lacks a clear distinction either regarding segments that have potential to internationalize or segments in which the country could build comparative advantages. On the other, its goal has been to merely bring domestic firms to current production and technological level, since worries about technological innovation and international competitiveness have been put in second place. Furthermore, the policy does not establish sunset provisions making it indistinguishable from a traditional protectionist measure. Lastly, it has been followed by very recent few – although promising – structural and horizontal reforms that could reduce barriers for companies based in Brazil to compete internationally. As a result, LCR currently implemented by the Brazilian government seem to hardly differ from classical ISI policies, despite the efforts of the government to present it otherwise as a way to allow Brazilian firms to “climb the ladder” and become competitive international players as suppliers for the O&G industry.
II. Brazilian developmental state: Incremental changes or abrupt ruptures?

Looking at the recent Brazilian political and economic trajectory, many scholars have pointed out how the crisis experienced by the country during the 1980s and 90s have created the conditions for a critical juncture during which a neo-liberal agenda was able to promote radical changes in its strategy of development. Fiscal crisis, hyperinflation, and high foreign indebtedness were the components of a perfect storm that would allow for drastic reforms. Hence, the liberalizing reforms of the 1990s that opened different sectors of the economy and re-conceived the state as a hands-off market-regulator represented an important rupture with the previous model of industrialization based on import-substitutions, albeit failed in its latter incarnations, and a strong presence of the state in the economy through direct ownership and control of companies. Recent studies, however, point out the limitations of these reforms in terms of effectively changing Brazil’s institutional trajectory. The return of the state activism during the 2000s and the growing public defense of a “neo-developmentalist” agenda by government officials are clear indicators that the liberal reforms were not able to eliminate the institutional basis of the Brazilian developmental state, particularly in what concerns its ability of promote industrial policy (Ban 2013, Boschi 2013, Montero and Hochstetler 2013).

Despite clear changes in priorities and policies when comparing the 1990s and 2000s, there are important elements that support an interpretation of the previous liberal period as one promoting incremental changes in the Brazilian developmental model instead of its rupture. One important aspect to indicate this is the (formal) institutional continuity of the economic policy-making and developmental agencies linked to the federal government. The so-called neo-liberal wave of the 1990s in Brazil did not dismantle traditional developmental institutions such as the BNDES or suffocated the evolution of more recent ones such as the Research and Projects Financing – Brazil Innovation Agency (FINEP), or privatize state-controlled
companies such as the oil behemoth Petrobrás or state-owned public banks such as Banco do Brasil and CaixaEconômica Federal. Furthermore, the most important privatized companies, such as the aircraft producer Embraer or the mining giant Vale, have been under indirect influence of the government through golden shares owned by pension funds of state-owned companies or the BNDES (Mussachio and Lazarinni 2013).

To a large extent the resilience of such institutions is due to two important factors. First, proponents of developmentalist ideas have never been completely excluded from government – even during the liberalizing period of President Fernando Henrique Cardoso – and many corporatist bodies representing interests of the industrial sector acted as a counterbalance to most radical reforms as sectors continued to depend on state support to endure the transition to a more liberalized economy (Boschi and Diniz 2007; Almeida 2009). As Montero and Hochstetler (2013:1485) argue Brazilian policy-makers since the re-democratization have not abandoned the overall conception that the state should actively support industrial growth, but rather adapted their developmental priorities. Developmentalists during this liberalizing period have pushed for abandoning industrial policies that would push for the creation of new industries and sectors at high fiscal costs as in previous decades, prioritizing instead the promotion of global competitiveness and innovation capacity of Brazilian firms in a more stable macro-economic environment.

Second, the maintenance of a concentrated institutional structure of economic policy-making on the Federal government – that allowed for the implementation of important market-oriented reforms during the 1990s such as privatizations and fiscal reforms – would allow subsequent governments to reinstate developmentalist-oriented policies without the resistance of many veto-points. In that sense, even policies that would require voluminous fiscal resources as the expansion of the credit base of BNDES during the 2000s would be, for instance, approved without major problems by the Legislative. In that sense, the main “constraint” to the new developmental period would be the inherited recognition of the imperatives of macro-economic stability (i.e. more balanced budgets and low inflation).
In analytical terms, when we contrast the previous liberalizing period with the neo-developmentalist turn initiated during the first Lula government we can identify elements of two diverse process of more incremental institutional change described by Thelen and Streeck (2005 Beyond continuity) as displacement and layering. The first one is actually a reversal of the displacement of institutions such as the BNDES and FINEP promoted by the fragile fiscal situation of the Brazilian state during the 1980s and 1990s. Since the Lula government, these traditional developmental institutions have seen their financial resources gradually strengthened with the goal of supporting the consolidation and innovation capacity of different sectors of the economy. Secondly, it has been characterized by a process of layering in which previous institutions acquire new functions and structures. A good example seems to be the LCR in the shipbuilding industry and the O&G sector where the debates to implement LCR have engendered initiatives ranging from innovation and vocational training, to regional development and promoted the Ministry of Mines and Energy (MME), the ANP and Petrobrás to important positions in the elaboration and implementation of the current industrial policy. The process of strengthening of the BNDES and its strategy of supporting the consolidation of traditional economic sectors and the formation of “national champions” has been widely studied and debated. However, it has been more an instrument of the new (and contradictory) agenda of development, than an arena in which we can observe how different interpretations about development are expressed by different actors and combined in concrete policies. As an alternative, we analyze the evolution of LCR and its process of institutionalization as an important arena for the definition of the recent developmentalist phase in Brazil.

The conflicting paradigms within developmentalism

The evolution of LCR in the O&G sector represents not only a distinct dynamic of institutional change that can be identified in the recent developmentalist turn in Brazil, but also a fertile ground to identify the tensions and contradictions within the new developmentalist agenda itself. In contrast to the clarity of the neo-liberal programs where market-mechanisms assume a protagonist role in the organization of the economic activity, the developmentalist agenda is based on an eclectic
paradigm in which the state and its bureaucracies have a fundamental role in promoting economic development.

This eclecticism in the case of Brazil has given risen to two dominant views: a first one more inward looking that sees state intervention as necessary in order to preserve jobs and protect domestic firms against international competition, and a second one more outward looking that defends State policies that increase the competitiveness of domestic firms in the medium and long-term, particularly emphasizing the need to support specific sectors and to develop incentives and institutions more favorable to stimulate innovation. While the first one finds strong roots in the historical tradition of

Brazilian industrial policy, the second one has been directly informed by current academic debates about industrial policy and inspired by concrete experiences from East Asia. Although not necessarily mutually exclusive, these views are not always coincident, especially in terms of policy designs. A typical example is the adoption of sunset provisions for certain incentives or performance indicators in order to measure policy results. While the second view would consider those fundamental elements to legitimate the State action and achieve effective development, the first one would consider them dispensable or secondary.

The debates about LCR in Brazil and their concretes policy results show how those views of development have been interacting and accommodating each other strategic visions. Furthermore, this eclecticism in the case of Brazil has provoked a lack of consensus about how the state should act and what it should prioritize in its policies. More concretely, the debates about LCR in Brazil and their concretes policy results show how traditional visions of development based on job creation (preservation) and import-substitution strategies collide and are ‘layered’ by new approaches that emphasize the achievement of international competitiveness and technological innovation. As a result, LCR has been pushed in different directions in order to accomplish multiple goals. As a high-ranked official from the MME puts it simply: “Today, local content in Brazil suffers from the short-blanket syndrome: too many goals for one policy”.

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Analytically, it is useful to look the debates about LCR in Brazil as a “coordinative discourse” in which “individuals and groups at the center of policy construction are involved in the creation, elaboration, and justification of policy and programmatic ideas” (Schmidt 2008:310). Looking through the lens of discourse allow us to identify the different ways the actors involved in the making of LCR rationalize it based not only on political interests but also on their own concepts about development that activate latent institutional possibilities (Panizza and Miorelli 2012). In that sense, while allowing for the coordination of different actors, LCR also reflects the open-ended debate about the developmental state in Brazil.

This analytic perspective is quite useful to make sense of two moments of LCR in Brazil: first, its origins during the neo-liberal government of Fernando Henrique Cardoso, who was responsible for ending the monopoly of Petrobrás over the exploration and production of oil and gas in the country; and second, the current initiatives for the policy to be more oriented towards innovation and technological development, mainly after the discovery of new oil fields called pre-salt. In the following section, we will briefly present the historical development of O&G sector in Brazil, emphasizing how these two views about the role of the State interacted in the configuration of the LCR.
III. A Brief history of the institutional foundations of policy-making in the O&G sector

The Brazilian government has been mandating local content requirements on oil companies since 1999. The pre-salt offshore oil discoveries of 2007 further increased pressure on the local oil services industry. The puzzle here is that the local content policy emerged in the midst of the neo-liberal Fernando Henrique Cardoso government and in a context of low oil prices, which played against any policy effort that could reduce the oil firms’ thin competitiveness.

The historical genealogy of local content policy has varied roots. Its sector policy roots lies in the 1980s when the III National Development Plan supported local efforts towards the construction of oil exploration platforms (seven were built locally for the Campos basin, outside the existing shipyards, then awash with ship orders). It left as its only legacy a pool of qualified human resources and a ‘capacity to make’ memory. Its corporate roots are linked to the evolution of Petrobrás. Since its inception in the 1950, Petrobrás had been striving to build suppliers of goods, services and labor in Brazil with the foremost interest of replacing imports and develop local industry. The large deep-water exploration ventures marked Petrobrás’ investment priorities in the 1990s. During this period, when there was no explicit policy orientation towards national supply, local content in the acquisition of floating production units ranged from 35% to 52% when built in the country, and from 1% to 19% when made abroad. A 1999 ANP study revealed an index of 60% of industrial capacity to meet the demand of goods and services in the construction of such production systems.

Finally, its ideological root lies in the sector fund CT-PETRO created in 1998, with goal of stimulating innovation in the productive chain of the oil and gas sector, the
training and qualification of human resources and the development of partnership projects between companies and universities, higher education institutions or research centers in the country, aiming at increasing production and productivity, reduction of costs and prices and the improvement of quality of products in the industry. Its funding comes from 25% of the portion of the value of the royalties that exceed 5% of the production of oil and natural gas. Its genesis was in 1997, out of the concern of the research and technology segment with breaking Petrobrás' monopoly. The segment became concerned with the possibility of Petrobrás treating technology purely as business; and could become even solely business at a point, buying off-the-shelf technology. The CT-PETRO was a very bold and innovative response to this concern, which was consolidated in the text of the law on oil.

The 1995 Constitutional Amendment number 9 ‘flexibilizing’ the state monopoly on oil and gas (O&G) exploration and production (E&P), which admitted that the Union could contract with State or private companies for carrying out of research activities and exploitation of deposits of oil and natural gas and other fluid hydro-carbonates, followed by the 1997 “Oil Law” constitute the institutional foundations of contemporary policy-making in the O&G sector. The Oil Law set the principles and objectives of the National Energy Policy (PNE), created the National Energy Policy Council (CNPE) and the regulatory agency National Oil Agency (Agência Nacional do Petróleo, Gás Natural e Biocombustíveis - ANP); instituted the concession model for developing the sector; established the Concession Rounds model based on an auction model; set government participation levels and defined the 1998 ‘Round Zero’ for Petrobrás. Subsequent rounds from 1999 incorporated Local Content (CL) requirements, divided between exploration phase and development stage.

Nevertheless, in that same year it was established the REPETRO, a special customs regime of exports and imports of goods intended for exploration activities and exploitation of oil and gas deposits in an effort to have the country presence of goods manufactured here and at the same time relieve, fiscally, the oil industry in importing certain goods of temporal use. It responded in part to the context of exploratory deficiency, which reflected proportionately in the absence of new suppliers in Brazil or in the improvement of the quality of existing ones. Repetro exempt operating firms from import tax (II), tax on industrialized products (IPI), PIS and Cofins, beyond the
additional freight for renewal of the merchant marine (AFRMM), items for oil and gas exploration, as production platforms and drilling rigs. The total reduction in the tax burden is 30%. According to Abimaq (Associação Brasileira da Indústria de Máquinas e Equipamentos) over 2011-2013, Brazil imported $141 billion in machinery, parts and vessels and in 2013 alone US$ 35 billion were invested in vessel, such as support ships and platforms for the offshore market.

The local context of the state of Rio de Janeiro also played a role in the emergence of the LC policy, as the near majority of offshore oil discoveries at the time were located off the state’s coast. In January 1999, Wagner Victer, a Petrobrás engineer and the recent governor-elect Anthony Garotinho campaign co-coordinator, became the state’s Energy Secretary. He also became the society representative in the National Energy Policy Council (CNPE) and President of the Council of State Energy Secretaries, having as Vice-President the future Mining and Energy Ministry and President of Brazil, Dilma Roussef. In the 1998 electoral campaign, the flagship goals of the Garotinho candidate development platform was to re-launch the state’s shipyards (which concentrated 80% of the industry) and to insure that the new entrants in the Brazilian oil industry produce and develop technology locally. There was legislative vacuum for oil industry initiatives: in the 1997 Oil Law and neither at ANP, which had no interest in the subject, nor in the Federal government, which was dominated by privatizing neo-liberals. Thus Rio de Janeiro state set up a policy unit to discuss these topics in view of establishing concrete policy measures to meet the campaign goals. One fiscal measure which the state succeeded in advancing was the strengthening of naval transport promotion fund FNMM. Next, it began to explore models used in developed countries to exploit in the discourse, focusing on the successful North Sea model for the development of local industry. Fact-finding missions with businessmen, opinion makers and policy makers were organized.

It is in this context that in the Round 1 auction in June 1999 that Rodolfo Tourinho, Ministry of Mining and Energy and President of Petrobrás Board and member of CNPE, introduced the concept of local content requirement (40%) as a component of the offer in the bid competition for platforms of two Campos basin fields – Barracuda and Caratinga – still outside the concession round model soon to be implemented. This was a strong signal to future foreign new entrants in the Brazilian oil exploration
industry that local content was beginning to be an important component. Next, in the context of public audience of the Round 1 auction, David Zylberstein, Director of ANP is led to include a small LC requirement in the first round rules, supported by a constellation of industrial trade associations and oil trade unions. It is interesting to note that local content policy was engendered in the O&G upstream, not in the downstream as in the past (1960s-1970s), where the famous tripod model was established in the 1970s.

**LCR Evolution**

In rounds 1-4 (1999-2002) local content offers in the bids were open-ended; in rounds 5-6 (2003-2004) minimum local content levels were established and in rounds 7-10 (2005-2008) minimum and maximum local content levels were established. LC enforcement is made though fines which are high, proportional to non-realized local investments. Table 1 presents the overall structure of local content requirements;

Table 2 presents LC range established for various exploratory block location; Table 3 reports the evolution of the average CL offer for the exploration phase and development stage and Table 4 shows the evolution of winning bid LC offers. (ANP 2013 and 2011)

**Table 1**

**Table 2**
Limites de Conteúdo Local Mínimos e Máximos

<table>
<thead>
<tr>
<th>Localização do Bloco</th>
<th>Fase de Exploração</th>
<th>Etapa de Desenvolvimento</th>
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<tr>
<td></td>
<td>Mínimo (%)</td>
<td>Máximo (%)</td>
</tr>
<tr>
<td>Águas Profundas P* &gt; 400 m</td>
<td>37</td>
<td>55</td>
</tr>
<tr>
<td>Águas Rasas 100 m &lt; P* ≤ 400 m</td>
<td>37</td>
<td>55</td>
</tr>
<tr>
<td>Águas Rasas P* ≤ 100 m</td>
<td>51</td>
<td>60</td>
</tr>
<tr>
<td>Terra</td>
<td>70</td>
<td>80</td>
</tr>
</tbody>
</table>

Table 3

Table 4

Partial Results
From round 1 to 10, stated local investments reached R$ 41 billion, out of $64 billion total investments in the exploration phase, as shown in Table 5.

**Table 5**

<table>
<thead>
<tr>
<th>BID</th>
<th>Investimentos Declarados</th>
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<tbody>
<tr>
<td></td>
<td>Total (bilhões R$)</td>
<td>Local (bilhões R$)</td>
<td></td>
</tr>
<tr>
<td>BID 01</td>
<td>5,28</td>
<td>3,23</td>
<td></td>
</tr>
<tr>
<td>BID 02</td>
<td>14,68</td>
<td>10,83</td>
<td></td>
</tr>
<tr>
<td>BID 03</td>
<td>6,87</td>
<td>4,94</td>
<td></td>
</tr>
<tr>
<td>BID 04</td>
<td>4,03</td>
<td>3,28</td>
<td></td>
</tr>
<tr>
<td>BID 05</td>
<td>3,66</td>
<td>2,18</td>
<td></td>
</tr>
<tr>
<td>BID 06</td>
<td>9,98</td>
<td>7,12</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44,51</strong></td>
<td><strong>31,58</strong></td>
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<th>BID</th>
<th>Investimentos Declarados</th>
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<tr>
<td></td>
<td>Total (bilhões R$)</td>
<td>Local (bilhões R$)</td>
<td></td>
</tr>
<tr>
<td>BID 07</td>
<td>9,06</td>
<td>4,86</td>
<td></td>
</tr>
<tr>
<td>BID 09</td>
<td>7,26</td>
<td>3,54</td>
<td></td>
</tr>
<tr>
<td>BID 10</td>
<td>2,82</td>
<td>1,21</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19,15</strong></td>
<td><strong>9,61</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Emerging faults**

In 2011, ANP noted that 65% of investment in local content stated by auctions winning operators of seventh to tenth rounds had not yet been certified. The rounds in question had a predicted investments of approximately R$ 17 billion for the operators, of which R$ 9.18 billion, or 54 percent, were stated by them as local investment. However, only 19% of that total, R$ 3.16 billion, had been certified as local investments and thus were subject to fines. At the time ANP levied fines to winning operators of rounds 5 and 6 which had made extremely high local content offers. It also noted that operators were transferring fines to subcontractors and suppliers through contractual obligations.

A 2012 study by Booz & Co., prepared for Brazil's National Petroleum Industry Organization, (ONIP), found that Brazilian producers in the oil services industry charges 55% more than their international competitors. Since September 2008 when the certification system was implemented, until the end of 2011, the study stated that 91% of the total number of certificated issued (3,456) referred to services and only 4% were related to equipment and the remainder to chemical products.
More recently, in early 2013 Petrobrás for the first time publicly complained to ANP that local industry was unable to meet the minimum local content index for the exploration and development activities in the blocks to be auctioned off in the May Round 11 and requested the reduction of 43 items for E&P in both shallow and deep waters. Petrobrás pointed out that in some items, LC certificates already issued by suppliers have percentages lower than the values established in the pre-call of the round. However, ANP Director General stated that “Local content is a Government policy. Petrobrás and the ANP role is to deploy it” and considered premature to discuss changes in the LC index. In addition, at the end of the year ANP announced that the minimum local content for the exploratory phase of the 240 blocks to be offered in Round 12 would be of 70% and a maximum of 80% and for the development phase, the minimum local content would be 77% and a maximum of 85%.

The next salvo came from Petrobrás in early 2014 when it announced a decision to send 3 out of 4 FPSO vessels being refurbished by the local firm Engevix to a shipyard in China for completion and recent signs that the winning consortium in the early July bid call ought to build the Tartaruga Verde field FPSO and the Libra pre-salt field pilot production vessel abroad. Observers state that Petrobrás ignored ANP LC guidelines for these two ships. Both the Director of ANP, Magda Chambriard, as the Coordinator of National Content of the regulatory agency, Marcus Tullius Rao, immediately warned that ANP will fulfill what is expected and determined by Government policy for minimum local content requirement in these two vessels.

Petrobrás plans to invest US$ 225 billion by 2020 and in the same period other operators have planned investments of US$ 60 billion in the country. The Brazilian shipbuilding industry business should reach US$ 180 billion by 2020. The industry trade association Abenav predicts that over the next three years more than 40 000 jobs will be created, on the top of the current 78 posts.
IV. Final remarks

LCR implementation has sought to access relevant ship building technology through MNC attraction, in a model reminiscent of the ISI variant of Evan’s “tripé”, including large, diversified, infra-structure (construction) companies as lead local partners. However, on the one hand, their tried and true diversification growth strategy does not impel them to develop technological absorptive capabilities, and on the other, no complementary support or incentives have been made to develop such capabilities in the supply chain. Also, as LCR began to be implemented, policy makers were faced with lack of knowledge of the supply chain firms, a knowledge detained only by Petrobrás. Finally, although one of LCR objectives is to promote productivity gains, the policy is mum about how to monitor such gains.

LCR institutional change has occurred through the layering of complementary institutions which through diagnostic and implementation have expanded and transformed the (formal) institutional landscape of industrial policy making in Brazil – ANP, Petrobrás, ONIP, ABDI and MME, among others - and of a discourse on new ideas such as technological innovation.

In response to the question put above whether Brazil is renewing its stakes in traditional import-substitution policies that dominated its own development through the 1980s, or is finding a new way of formulating and implementing industrial policy, we can argue that there is continuity with change, the latter albeit slow and latecomer. Whereas, we suggest, LCR appears as a monitored-protectionism of local industry, import-substitution with new clothes and driven mainly by generic job creation (and of course the lingering question is whether the emperor is naked or not), the ‘layering’ of new institutional components such as human resources training for productivity growth (Prominp) and innovation for competitiveness has been pasted upon LCR slowly for the former and quite late for the latter.
References (partial list)


