Ideas and leadership in the crafting of alternative industrial policies: Local content requirements for the Brazilian oil and gas sector

Abstract

Latin America is viewed as a region that has embraced a strategy of "open-economy industrial policy" (OEIP). However, the region's transition to OEIP has been neither complete nor irreversible. In this article, we argue that economic development concepts and instruments introduced during Brazil's previous import-substitution industrialization regime still influence the country's industrial policy. By tracing the evolution of local content requirements (LCR) in the Brazilian oil and gas sector, we show that conflicts between inward-oriented and outward-oriented forms of industrial development have been the main source of recent policy changes in the country. In addition, we show how institutional structures affect the implementation of economic ideas. The country's centralized policymaking facilitated significant changes in the orientation of the LCR policy during the last twenty years.

Keywords

industrial policy, developmentalism, local content requirements (LCR), institutional change, Brazil, oil and gas

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Introduction

Brazil's offshore oil and gas (O&G) sector was a core part of the country's rise to global economic prominence. In 2014, the country was poised to develop vast oil fields discovered off its southeastern coast by the state-controlled oil company Petrobrás – one of the largest companies in the world and the largest in Latin America in terms of market capitalization at the time. Stimulated by high oil prices, Petrobrás announced investment plans in March 2014 that totaled US$220 billion.[1] At the same time, the Brazilian government directed a substantial part of these investments to support the country's shipbuilding industry. These investments had substantial dividends: the number of workers directly employed in Brazil's shipyards grew from 2,500 during the late 1990s to almost 85,000 in 2014.[2] During that same period, Brazil became the fourth-largest shipbuilding nation in terms of domestic orders. Unfortunately, by 2017, this developmental dream based on the exploration of oil resources has become a nightmare. The cycle of low oil prices beginning in 2014 revealed an over-indebted Petrobrás[3] and the "Car-wash" corruption scandal led to the imprisonment of many Petrobrás directors, business leaders, and politicians.[4] As a result, investments in the Brazilian O&G sector have dried up and tens of thousands of jobs have been lost.

Despite the recent focus on the "Car-wash" scandal and Petrobrás's dire financial straits, this article takes a step back and attempts to understand the rise and consolidation of the O&G sector as part of a larger developmental strategy in Brazil. As several developed and developing countries are renewing their focus on industrial policy initiatives, Brazil's recent experience shows the possibilities and limitations of ambitious industrial policy in the context of neoliberal hegemony.

In particular, the Brazilian case challenges the ascendancy of the so-called *open-economy industrial policy* (OEIP), identified as a viable way to integrate industrialized latecomers from regions such as Latin America and Eastern Europe into the global economy.[5] While the "Washington Consensus" that has guided international development strategies over the past four decades discourages nations from implementing interventionist industrial policy, OEIP is viewed as an acceptable approach that focuses on promoting export diversification while avoiding the pitfalls of import-substituting industrialization (ISI) and excessive protectionism (i.e., rent-seeking). In practical terms, OEIP is considered simultaneously more effective than ISI in promoting the growth of competitive sectors and more politically feasible in a context where many industrial policy instruments are forbidden by international agreements. As many scholars have emphasized, Brazil has liberalized trade and capital flows while simultaneously adjusting existing developmental institutions to fit in the OEIP framework and promote the international competitiveness of domestic firms – especially large firms in the commodities sector.[6] However, these studies neglect the gradual reinstatement of ISI-inspired policies in an increasing number of sectors, such as O&G.

In this article, we argue that *ideas* about strategies of economic development are an overlooked variable in analysis of Brazil's recent industrial policy changes. Ideas are important, as they constitute both institutional blueprints guiding actors in moments of uncertainty[7] and the basis for a discourse that helps organized interests (such as labor unions or trade associations) give meaning to a policy.[8] Without ideas, interests have a limited explanatory power. In the Brazilian case, the potential for industrial development due to an increase in offshore O&G activity resulted in the establishment of a local content requirement (LCR) policy – mandating that oil companies buy a percentage of their equipment from domestic suppliers. By tracing the transformations of Brazilian LCR policy in the O&G sector, we show that ideas regarding developmental strategies, sponsored by key political leaders and policymakers, go beyond being an automatic response by the coalition of interests supporting them. More specifically, the different ideals held by these key actors – and interest groups and policy networks surrounding them – regarding the developmental role of LCR explain important variation in the design of the policy over time. This variation results mainly from the clash between two different views of industrial development. On one side, proponents of an *outward-looking* perspective supported LCR as an instrument to facilitate domestic companies' integration into international supply chains; on the other side, supporters of a more *inward-looking* perspective saw LCR as a way to maximize job creation and industrial output in the country.

However, to say that ideas matter is not enough. They matter because particular institutional settings confer decision-making power to some individuals or groups and grant them a more prominent role than others in policymaking. Considering the concentration of industrial policy prerogatives in Brazil's federal executive branch, the ideas sponsored by leaders of strategic institutions such as regulatory agencies, ministries, and the presidency are crucial to understanding the changes in the country's LCR. Regarding the Brazilian O&G sector, this approach helps us to understand the adoption of LCR in 1999 during the liberalizing center-right government of Fernando Henrique Cardoso from the Brazilian Social Democratic Party (PSDB). Cardoso's government opened the Brazilian O&G sector to private competition and partially privatized the state-owned oil company Petrobrás, making the adoption of a protectionist instrument like LCR seem both counterintuitive and unlikely. In fact, bureaucrats of the newly created National Agency of Petroleum, Natural Gas and Biofuels (ANP) — individuals who held an outward-looking perspective on development — used ANP's autonomy to initiate LCR without the federal government's explicit support. For those bureaucrats, LCR was a way to break foreign oil companies' resistance to procuring equipment and services from domestic companies, as they often preferred to maintain relationships with their regular suppliers.

Policy actors can adapt ideas to fit a new reality, which is how successive governments of the Worker's Party (PT) between 2003 and 2015 altered LCR to fit their purposes. By taking over a regional movement led by shipyards and politicians from the state of Rio de Janeiro pushing for the adoption of LCR and by transferring policy prerogatives back to the Ministry of Mines and Energy (MME), President Lula da Silva gradually transformed LCR so that it became the main pillar of an ambitious, inward-oriented industrial development strategy. This strategy was largely inspired by a view of development that prioritized job creation and national development. Contrary to what interest-based theories would predict, the changes promoted by PT governments went well beyond organized interests' wishes – and particularly the ones from the existing shipbuilding industry. This powerful combination of economic ideas and centralized decision-making structures in Brazil also help explain why it took President Dilma Rousseff's government so long to change the format of LCR, despite mounting criticism from many powerful actors (including Petrobrás).

The hegemony of open-economy industrial policy revisited

OEIP can be defined as a set of *supply-side* government initiatives designed to alleviate the negative impacts of existing market failures and improve specific sectors' export capacities. Most commonly, governments have used tax breaks, duty drawbacks, and subsidized credit arrangements to help existing sectors compete in the world economy.[9] These instruments, intended to boost exports through incentives to both traditional and new sectors, depart from traditional protectionist instruments of previous import-substituting industrialization (ISI) regimes, such as import tariffs and quotas.

In addition to representing a pragmatic adaptation to the failures of the previous ISI model, OEIP was also a departure from the neoliberal consensus that took over Latin America in the 1980s.[10] The principles of the so-called Washington Consensus inspired most international financial institutions (IFIs) and reformers in the region, who were clearly opposed to any use of interventionist industrial policy. They dismissed the validity of any policy that altered market mechanisms in favor of specific sectors – even in cases where markets were clearly imperfect. In this context, OEIP represented an alternative to such orthodoxy and an effort to translate local interests and demands to the new economic world order.

OEIP had other advantages over traditional ISI instruments. First, the incentives given to firms were oriented toward competition and integration into the global economy – not import substitution. Second, the fiscal costs of these instruments on national budgets would be more transparent than previous protectionist measures.[11] Third, regarding the international trade system, OEIP would have the advantage of not overtly breaking WTO rules. Governments could use such instruments until companies had achieved a level of international competitiveness – meaning that firms would have time to mature. In that sense, the policy's success in preparing domestic firms for international markets would set the terms for its abolition.

The rise and widespread adoption of OEIP initiatives can be explained by the compensatory effects they had on economic sectors affected by economic liberalization. As Kurtz and Brooks argue, OEIP's export-oriented instruments have contributed to the embeddedness of neoliberalism by securing support from both business and organized labor for broader market-oriented reforms, as these instruments smoothed the transition to a more open economy.[12]

Contrary to this OEIP narrative, however, a closer examination of reality reveals a more diverse picture of how interventionist industrial policy re-emerged beginning in the 1990s. Particularly in developing countries, state ownership and new versions of protectionism have re-emerged simultaneously with the redirecting of economies toward an export-oriented model of growth.[13] State economic activism has found new ways of operating through different structures of investment and business ownership. Privatized state-owned enterprises (SOEs) now coexist with companies in which states are either majority or minority shareholders.[14] New protectionist policies have also emerged through the exploitation of loopholes in international trade and investment agreements.

One clear example of this creative search for alternative development paths has been the use of local content requirements (LCR) in government procurement. We define LCR as a set of incentives and/or penalties designed to encourage companies to use domestic suppliers in their activities. It is a classic protectionist strategy to promote infant supply industries and a way to strengthen backward linkages in natural resource sectors.[15] Various WTO agreements ban LCR instruments due to their distorting market effects.[16] In spite of these bans, the Cardoso government implemented LCR. Paradoxically, this same government had previously promoted a dramatic liberalization of the Brazilian O&G sector.

Even though Brazil is a WTO member, it was able to adopt LCR because it lies in a gray area of the international trade regime. In Brazil's case, LCR were implemented as part of concession agreements the federal government signed with oil companies. Within the WTO, the Agreement on Government Procurement (GPA) is a separate treaty that imposes principles of openness and non-discrimination on national governments' procurement procedures. However, only 47 WTO members have ratified the GPA (and Brazil is not among them). Therefore, Brazilian authorities have argued that concessions given to oil companies are a type of government procurement and therefore are not subject to restrictions from the WTO general agreement.[17] The Brazilian government has used LCR to promote industries such as pharmaceuticals, and the policy is also popular in many African countries rich in O&G.[18]

Given these recent trends with LCR, the OEIP framework does not, by itself, provide a satisfactory explanation for cases where policymakers use protectionist instruments or state-ownership as part of a strategy to promote greater integration in the world economy. The way to understand this outcome is to identify the different developmental goals that motivate policymakers' choices. Underlying concepts of development that motivate policymakers not only explain why these individuals can recast old protectionist instruments to align with open-economy views, but also how these concepts can be a continuous factor inspiring industrial development projects that contrast starkly with OEIP strategies.

Conflicting paradigms of development

The prevailing explanation for the rise of OEIP is that policymakers in the developing world gradually abandoned ISI-inspired ideals and embraced open-economy principles while still believing in industrial policy as a tool for development. In other words, changing economic circumstances convinced policymakers and organized interests that industrial policy should be based on an outward-looking perspective.

The prevailing focus of this outward-looking perspective is to use industrial policy as a tool to develop economic sectors where the country has comparative advantages and to help existing domestic firms become competitive in the global economy. Therefore, industrial policy's main goal is to facilitate the domestic economy's transition to a more competitive international environment. According to this view, the state's main role is to support domestic companies by improving firms' ability to innovate and capacity to export, thereby making them more competitive internationally.

In Brazil's case, many major economic players had acknowledged the need to change the country's industrial policy to promote greater international competitiveness. Looking at industrial policy debates in the country during the 1980s and 1990s, Hochstetler and Montero show how Brazilian policymakers did not abandon the overall conviction that the state should actively support industrial growth, but adapted their developmental priorities to the new neoliberal context. Despite the abandonment of ISI-inspired industrial policy and the implementation of a large privatization program during the 1990s, the Brazilian government still offered domestic companies subsidized lines of credit for acquiring capital goods, fiscal incentives for exports, and research and development (R&D) funding.[19]

The drawback to this idea that there was a break from existing economic policy in Brazil during the 1990s is that it ignores the fact that certain actors continually sponsored an alternative, inward-looking economic development perspective. Both the outward- and inward-looking perspectives acknowledge the restrictions imposed by the global economy. However, the inward-looking perspective has a clearer focus on maximizing job creation and increasing industrial output, even though these activities do not necessarily promote firms' international competitiveness. In other words, the contrast between the inward-looking and outward-looking perspectives has a Schumpeterian aspect. While the outward-looking perspective accepts that Brazil's deeper integration within the global economy would result in job losses and even the disappearance of some sectors, the inward-looking perspective tries to preserve every manufacturing job and even stimulates sectors that will not achieve international competitiveness. Even though both perspectives aim to increase manufacturing capacity, the most significant difference between the two perspectives is that the outward-looking one is concerned about the *quality* of the manufacturing capacity created, while the inward-looking is more concerned about *quantity*. In Brazil's case, the inward-looking perspective finds support in the country's long tradition of developmentalism with an emphasis on self-sufficiency (e.g., promoting the oil industry), nationalization of manufactured goods (e.g., automobiles), and regionalization of industrial development that was evident during the ISI period.[20] The resilience of this perspective is an important factor in explaining the revival experienced by Brazilian LCR policy during the 2000s and the emphasis on the labor-intensive shipbuilding industry.

These inward-looking and outward-looking perspectives are not necessarily mutually exclusive. Rather than being viewed as coherent sets of ideas leading to specific policies, these two perspectives should be seen as both heuristic devices and resources for actors seeking to promote industrial development.[21] As heuristic devices, these perspectives establish hierarchies and priorities for actors to pursue, acting as roadmaps that give meaning and purpose to the actions of individuals and groups.[22] In the realm of policymaking, ideas become embedded in *discourses* used by those at the center of policymaking in order to create meaning for their actions.[23] The mobilization of ideas themselves and the construction of discourse is often a process that leads to policy *hybrids* resulting from compromises between conflicting paradigms and material interests.

Therefore, instruments normally associated with either inward-looking or outward-looking perspectives can acquire new meanings when they are redesigned to align with the priorities defended by actors sponsoring an alternative point of view. In the inward-looking case, international competitiveness is often viewed as a desirable but elusive goal. But efforts to improve R&D and innovation easily fit within the inward-looking paradigm as necessary for securing companies' survival and can coexist with protectionist measures. On the other hand, the outward-looking perspective can justify protectionist measures as an instrument to secure fair competition between domestic and foreign companies. Non-tariff barriers — such as environmental, health, and labor regulations — can be justified to avoid a race to the bottom among national companies.[24] Following this reasoning, ANP bureaucrats' original intent with LCR in Brazil was to reduce informal barriers within foreign oil companies' supply chains — to break foreign oil companies' preference for their existing foreign suppliers.

Embedding paradigms and actors

If ideas matter, some matter more than others. The ideas of actors occupying decision-making positions in organizations with real agenda-setting (or veto) power regarding a particular policy domain are invariably more relevant and will have a greater influence than those sponsored by less empowered actors. These key actors adapt specific sets of ideas to contingent realities in pragmatic ways by mobilizing institutional resources, networks of experts, and organized interests to support a specific policy. These actors' relevance will increase according to the degree of discretionary power they have over a policy.

Although several studies emphasize the role these actors play in moments of crisis, it is important to consider policymakers' degree of discretion in several different contexts.[25] In centralized settings, elections are natural sources of policy changes as they often bring new political actors with new views into positions of power. Moreover, institutional arrangements that are relatively new are more prone to reinterpretations of policymakers' roles and functions.

In the Brazilian case, the broader institutional framework grants a particularly high level of discretion to political leaders and bureaucrats that shape industrial policy. One important feature is the centralization of the economic policymaking in the country's executive branch. Congress typically delegates several economic policymaking prerogatives to the executive branch, giving presidents and executive branch bureaucrats more discretion to implement initiatives aimed at supporting industrial growth.[26] In the case of LCR, ANP had a large degree of autonomy in — though not necessarily broader support for — introducing and designing the policy. The first Lula government rolled back the ANP's autonomy, as the MME gradually took over its policy-setting prerogatives.

Another important characteristic is the executive branch's relative autonomy vis-à-vis the private sector in Brazil, as governments have often capitalized on the fragmentation of business organizations to implement policies.[27] In his analysis of Brazil's economic liberalization of the 1980s and 1990s, Kingstone argues that the Brazilian business sector had a half-hearted approach to neoliberalism, with the government clearly leading the charge.[28] Similarly, later changes in LCR were not on account of businesses' sudden embrace of "neo-developmental" values. Without Brazilian President Lula and his Workers' Party (PT) taking the lead, it is unlikely that the government would have changed LCR so radically. Thus, the creation of LCR and its subsequent changes can be traced back to political leaders and policymakers' ideas about industrial development and their entrepreneurial role in promoting them.

Lastly, the existence of competent and resourceful organizations in the Brazilian public sector enabled Lula's government to make changes to the scope of LCR. One such organization is the state-controlled company Petrobrás. Despite the opening of the Brazilian O&G sector to foreign companies, Petrobrás has continued to dominate the country's exploration and production activities. Responsible for more than 80 percent of Brazil's oil and gas production, Petrobrás was a key resource in the implementation of LCR, as it is the main buyer of petroleum equipment and services in the country. In the absence of such a strong state-controlled company, the government would likely have encountered strong resistance from foreign oil companies or even private domestic companies regarding policies such as LCR. Another important organization is the Brazilian Development Bank (BNDES). Increasingly capitalized during PT governments, BNDES played a key role in lending substantial amounts of money to Petrobrás, shipyards, and other suppliers during the expansion of offshore activities.[29]

A brief history of LCR in the Brazilian O&G sector

Brazil's LCR policy has its roots in the broader ISI model the country adopted during the second half of the twentieth century. In particular, the Tariff Law of 1957 (the "Law of Similars") from Juscelino Kubitschek's presidency is the most direct source of inspiration. The law established tariffs on all imported goods that could be obtained in Brazil and set up a governmental council responsible for defining a list of goods that were necessary for industrial sectors and that could therefore receive tax exemptions.[30] In the oil sector, Petrobrás has been considered a key agent for the development of national industry since its inception in the 1950s and has strived to build suppliers of goods and services in Brazil by following the backward-linkages model successfully adopted during the country's development of an auto industry. Even though it had a monopoly over oil exploration and production in the country until the late 1990s, Petrobrás was much more active in downstream activities, developing refineries and an active petrochemical industry.[31]

The attention to upstream activities was renewed only after the discovery of offshore fields in the Campos Basin during the mid-1970s. However, there were two reasons the government did not develop a domestic petroleum supplier industry at the time. First, the technical challenges involved in drilling and producing offshore represented a completely new activity where Brazilian suppliers did not have expertise. Second, the possibility of increasing oil production and reducing trade deficits represented a more immediate priority to the Brazilian government than building a specific supply chain. Therefore, Petrobrás was allowed to import equipment without restrictions to develop offshore fields during the 1980s.[32]

In the private sector, Brazil’s shipbuilding industry initially dismissed Petrobrás’s offshore activities. Orders from the National Superintendence of the Merchant Marine (SUNAMAN) were filling up the Brazilian shipbuilding industry’s books at the time, and it did not show any interest in entering a new – and technically challenging – market. Brazilian shipbuilders would only look at the O&G sector as a strategic market starting in the late 1990s, once the whole shipbuilding industry almost disappeared during the 1980s due to financial scandals.[33]

For Petrobrás, the pressure to use local suppliers began due to the scarcity of foreign currency following Brazil’s foreign debt default in 1987. Even though Petrobrás imported many capital goods without tariffs and bought engineering products from foreign suppliers, the company prioritized the production of offshore platforms in Brazil, as it lacked foreign currency to pay contractors abroad. Moreover, these platforms would operate in shallow waters and were not highly sophisticated projects. As a result, the company ordered seven platforms from Brazilian contractors during the 1980s. However, due to the unfortunate timing for the shipbuilding industry, many shipyards went bankrupt or were not able to take new orders, allowing other Brazilian construction firms to take on these projects. At the time, as prospects for future development of offshore fields were still very uncertain, these platforms were mostly isolated projects and construction firms did not view them as opportunities for strategic diversification.

Due to the increasingly challenging geological position of the Brazilian offshore fields, this arrangement of ad hoc construction platforms outlived its usefulness. The increasing water depth of the oil fields demanded equipment and services that were not traditionally made in Brazil. While the first offshore platforms required a simpler technology that could be easily replicated by local industry, the new fields located around 1,000 meters below sea level imposed considerable challenges. Over the course of its history, Petrobrás had built a highly qualified team of engineers at its own research and development center (CENPES), which was able to develop the conceptual engineering projects for the country's initial offshore exploration and production activities. Local suppliers, however, were not able to develop technology at the same pace. As the local shipbuilding industry was keener on surviving in an unstable economic environment during the 1980s and 1990s and absorbing the impacts of liberalization than investing in challenging sectors, Petrobrás would often go abroad in search of assistance. As one director of Petrobrás said: "Traditionally, when we have a technological or operational challenge we look for the best companies in the world to help us find a solution."[34] During the 1990s, Petrobrás ordered many offshore oil platforms and production units abroad. Consequently, without an explicit policy orientation during this period, local content in the acquisition of floating production units (FPUs) ranged from 35 to 52 percent when built in the country, and from 1 to 19 percent when made abroad.[35]

With the consolidation of Petrobrás as a capable offshore oil producer and the steady growth of confirmed oil reserves along the Brazilian coast during the 1990s, the upstream segment began to acquire a renewed importance. Both businesses and policymakers agreed that offshore activities represented a key sector for Brazil's future industrial development and started demanding a formal LCR policy.

Local content in times of liberalization

Amid manufacturing sectors' growing interest in Petrobrás's expansion of upstream activities in Brazil, President Cardoso promoted a significant liberalization of the O&G sector as part of his ambitious plan of market-oriented reforms.[36] In 1995, Cardoso led a successful constitutional reform that put an end to Petrobrás's national monopoly over O&G exploration and production. In 1997, the government passed the "Petroleum Law" that established the new institutional foundations for policymaking in the O&G sector. The law took petroleum policymaking authority away from the MME and created the National Energy Policy Council (CNPE) and the aforementioned ANP. Under this arrangement, the CNPE was responsible for setting broader policy guidelines, while ANP was the regulatory agency responsible for implementing them. The main innovation was to grant ANP autonomy: it had its own budget and its directors had fixed mandates. One of ANP's main responsibilities was organizing bidding rounds for exploration concessions where Petrobrás had to compete with other oil companies.

During the period when ANP started discussions about the bidding rounds' format, LCR was gaining considerable support in business and political circles. However, different groups provided different reasoning for supporting LCR. One group was a coalition formed mainly by politicians and shipyard owners from the state of Rio de Janeiro. As almost all of Brazil's offshore oil discoveries were located off Rio de Janeiro's coast, this group had a direct interest in securing a share of the economic activity coming from these operations. Although many congressmen from Rio de Janeiro lobbied for the shipbuilding industry at the federal level, former governor Anthony Garotinho was at the forefront of this coalition. During his successful 1998 gubernatorial campaign, Garotinho's flagship commitment was to bring Petrobrás's construction of new oil platforms to the state and use this as a catalyst to overhaul local shipyards. Under his guidance, Rio de Janeiro state set up a policy task force to discuss an agenda aimed at reinvigorating the shipbuilding industry through the expansion of the oil sector.[37]

This coalition succeeded in securing funds in the federal budget for the Naval Transportation Promoting Fund (FNMM) and lowering the interest rates on its loans to finance the construction of new ships. Petrobrás's naval transportation subsidiary – Transpetro – started to use these funds to order tankers that would carry the projected increase in production. At the state level, Governor Garotinho also established broad tax exemptions to shipyards in order to improve their competitiveness. One of the coalition's important achievements came in 1999. After long negotiations between MME and Petrobrás, the company committed to having 40 percent local content on two new offshore oil platforms for fields whose licenses were not under official LCR clauses. This gave a clear advantage to shipyards in Rio de Janeiro, which were the best equipped to fulfill the order.

Within business circles, sectors other than the shipyards were also lobbying to increase domestic suppliers' market share in the O&G sector. In 1998, representatives of eight business associations from manufacturing sectors created the *Compete, Brasil* action group. More aligned with an outward-oriented development perspective, the group demanded credit and tax incentives that would allow national industries to compete on better terms with foreigners. The adoption of LCR was not one of the group's explicit goals, although it vaguely argued for clear conditions regarding domestic companies' participation in the oil supplier industry. The group was especially worried about foreign oil companies bringing in their own suppliers without considering local companies, a worry exacerbated by the fact that Petrobrás's Engineering Department was increasingly outsourcing its projects to foreign contractors.

Despite the Cardoso government's strong commitment to liberalization, this line of argument gained some traction. In addition to support from politicians from the state of Rio de Janeiro, it also had the support of politicians from the state of Bahia, such as senators Antonio Carlos Magalhães and Rodolpho Tourinho – the latter was the head of MME and favored Petrobrás's efforts to include LCR in the aforementioned platform contracts.[38] At the policy level, however, the CNPE was silent about the topic. On the other hand, ANP, which was responsible for designing and conducting the auctions, was very involved in this matter. As Mueller and Pereira mention, the CNPE was characterized by a lack of activism during its first years, giving ANP "considerable discretionary power" to formulate policy at all levels.[39]

Enjoying the large degree of autonomy granted from the federal government, David Zylbersztajn, ANP's first director-general, had an important role in deciding whether or not to include the LCR clause in the upcoming bidding round. The *Compete, Brasil* group was particularly active in publicly lobbying Zylbersztajn, providing him with studies about how local suppliers could face a potentially unfavorable position vis-à-vis foreign competitors. In addition to the backing of industry groups, a network of consultants and engineers were providing technical support to ANP on this same topic. This group viewed domestic engineering capacity as a strategic sector to be stimulated, as this expertise was considered an important driver for technological development. By controlling the project design, Brazilian engineers could mobilize national producers to deliver the necessary equipment and services.

Zylbersztajn favored these proposals and began evaluating the possibility of adopting the LCR clause. He commissioned studies to evaluate Brazilian industry's ability to supply the O&G sector and whether this clause violated WTO agreements.[40] Simultaneously, he negotiated within the government to implement LCR in a way that it represented neither a pure protectionist measure nor an issue that could reduce oil companies' interest in bidding. Finally, ANP included an LCR clause in the first round of bidding for concessions in 1999. The clause, however, established that oil companies would be free to set their level of commitment in their bids. The clause established neither a minimum level of investment nor what type of equipment and services oil companies should acquire.

In addition to the Brazilian government's inclusion of LCR in the O&G supplier bidding rounds, ANP also sponsored the creation of the National Organization of the Petroleum Industry (ONIP) in 1999. ONIP is a private organization formed by industrial business associations, such as the Brazilian Machinery and Equipment Association (ABIMAQ), and oil companies, with a mission to promote domestic suppliers' competitiveness. Inspired by similar organizations in Great Britain and Norway, ONIP sought to create a directory of existing companies in Brazil that could become suppliers to the O&G sector. Its goal was to increase domestic firms' profile among foreign oil companies and reduce information costs involved in looking for Brazilian suppliers.

ANP's embrace of LCR represented a more outward-oriented development strategy that recognized important informational asymmetries and unconventional market barriers Brazilian suppliers could experience in a newly liberalized market. The foremost objective of LCR was to create conditions for the most qualified companies to overcome the barriers to entry in international oil companies' global supply chains. Nonetheless, ANP's view was not shared by the rest of Cardoso's government. Even though the government did not veto LCR or the creation of ONIP, Cardoso's government did not fully support these actions. For example, the government systematically ignored initiatives from ANP and ONIP to create a directory of suppliers and programs to help companies obtain quality certificates required by oil companies.[41] In contrast, ANP not only supported ONIP, but also funded programs for O&G research, including PhD programs – competing with programs that were normally offered by the Ministry of Education and the Ministry of Science and Technology. As a result, ANP took advantage of its autonomy to assume an unexpected role of defining and implementing a limited, but innovative, industrial policy for the O&G sector during Cardoso's government.

The quiet revolution: LCR under the Lula government

Even though foreign oil companies showed interest in Brazil during four successful bidding rounds from 1999 to 2002, and even though Petrobrás doubled its production due to the successful exploration of offshore reserves, the regulatory model for Brazil's O&G sector continued to be highly contested. One element that business sectors heavily criticized was the government's loose control over LCR implementation. While LCR policy had been implemented, business associations complained that only basic services and equipment were acquired domestically, as oil companies were free to decide how to allocate commitments. Another important cause for dissatisfaction was that Petrobrás continued to order large platforms from abroad.

During the 2002 presidential campaign, PT's candidate, Luis Inácio Lula da Silva, drew attention to these issues. He often argued during the campaign that Petrobrás should order all of its platforms in Brazil in order to create domestic-sector jobs.[42] Petrobrás CEO Francisco Gros defended the company's freedom to order from foreign suppliers, arguing that Brazilian shipyards could not handle these complex projects properly. The Lula campaign was not only voicing the arguments of business associations, such as shipyard owners, but also trying to point out an important strategy for job creation that characterized the inward-oriented development perspective he advocated. During the campaign, he argued that Brazilian shipyards were highly qualified and said "(…) if these platforms were built in Brazil, they would create about 25,000 jobs during a period of three years. In other words (…), we are missing the opportunity of creating thousands of jobs in the country." [43]

Consequently, the LCR policy established during the previous administration proved useful for President Lula once he won the election. Through changes in its design, Lula expanded the protectionist aspect of LCR within the broader framework of a liberalized O&G sector. One important step was the nomination of Dilma Rousseff as minister of mines and energy (MME) in 2003. Rousseff, the former secretary of energy of the state of Rio Grande do Sul, was recognized as a strong supporter of implementing LCR in Petrobrás's contracts during the 1990s. She was vice-president of the Council of State Energy Secretaries and worked closely with Rio de Janeiro state's secretary of energy, Wagner Victer, in his lobbying efforts to revamp Rio de Janeiro's shipyard industry.[44] After joining Lula's cabinet, Rousseff transferred the responsibility for supervising bidding rounds and defining LCR policy from ANP to the MME through strengthening the role of the CNME. Lula also appointed Rousseff as Petrobrás's chair of the board, enabling her to make the company's investment plans into an instrument for promoting national industry. During public events right after Lula's inauguration, Rousseff would say that all initiatives to create jobs using Petrobrás's contracts were part of a new industrial policy aimed at generating jobs and income.[45]

Regarding LCR, Rousseff promoted two important changes. Already by 2003, the government had established minimum mandatory percentages of LCR in oil companies' bids, varying from 30 percent in deep-sea waters to 70 percent on land blocks. It also eliminated benefits given to companies buying specific services or products from domestic suppliers, such as engineering projects.[46] In 2005, LCR acquired its current shape, defining an extensive list of items in exploration and development phases that required bids of local content within a pre-defined percentage range.

Inputs from a new forum created during Lula's government to coordinate the industrial policy of the O&G sector directly impacted these changes. The Mobilization Program for the National Oil and Gas Industry (PROMINP) was led by Petrobrás and composed of government officials and business associations with the main goal of increasing domestic suppliers' participation in the sector.[47] In practice, PROMINP became a useful arena for formulating O&G sector policies — generating inputs for changing the LCR model, but also developing the basis for policies targeting related areas. Since its establishment, it generated two concrete results. First, it established an ambitious training program for manufacturing workers. As the lack of skilled workers has been a common challenge in Brazil, PROMINP established courses to train workers in specializations that would fit the profile of Petrobrás's projects. Since 2006, PROMINP has trained 97,000 workers – mostly to perform activities in shipyards, such as welding, painting, and quality inspection. Second, it created programs to develop suppliers by helping them adapt their managerial systems and production lines to Petrobrás's technical requirements.

An important practical result of PROMINP, however, was the standardization of a method to calculate and certify local content. Finding a methodology to define and measure the domestic contributions to a product or service has been a longstanding controversy. During Cardoso's government, local content was measured by oil companies through quarterly investment reports submitted to ANP. Oil companies just indicated what percentage of their components were acquired from Brazilian suppliers, with domestic companies providing certificates of origin. ANP's role was basically to check whether the stated expenses and certificates oil companies provided matched their contractual LCR commitments. Moreover, the penalties for not achieving LCR were of 200 percent of the non-fulfilled value. For manufacturers of more sophisticated products, this model was too loose, as oil operators and their first-tier suppliers could easily fulfill their commitments by buying basic services and equipment locally – or in the worst-case scenario, inflating expenses with local suppliers in their financial statements. For the government, the certificates of origin were also a weak mechanism of control, as they relied on companies' self-declarations.[48]

To close some of these loopholes, the government mandated minimum LCR for the O&G concession rounds in 2003 and 2004. That action immediately forced oil companies to buy more products and services from Brazilian suppliers. However, it still allowed for manipulation. First, it was not clear whether these local suppliers actually produced in Brazil or merely packaged imported manufactured goods. Second, the adoption of a general percentage of LC still allowed oil companies to organize their supply chains to buy basic products and services in the country while bringing sophisticated equipment in from abroad.

Government and private sector dissatisfaction with this model resulted in a new design launched in 2005. It was a highly detailed model of LCR with minimum and maximum requirements for different segments and systems in the exploration and development phases. For instance, the list established how much LC different components of platforms or floating-productionstorage-and-offloading (FPSO) units should have. In this new regulation, LC was defined following a formula that weighed the cost of imported inputs in relation to the final equipment or service price. Another change was transferring the process of LC certification to ANP-approved private companies (*certificadoras*). As compensation, it reduced the fines, ranging from 60 to 100 percent of the amount of non-achieved LC offered by oil companies. With this model, the government was promoting two goals: providing clear demand for different sectors of the industry and, consequently, stimulating job creation.[49]

This new LCR model, however, generated discontent among policymakers more aligned with an outward-oriented development perspective. The staff at ANP, despite recognizing that the agency's role is to implement the policy as formulated by the government, have been critical of the changes. For them, the model is too rigid, trying to cover various segments of the supply chain with the ambition of ensuring that production takes place at domestic suppliers.[50] The lack of focus on specific segments of the supply chain and the extensive use of financial penalties instead of positive incentives to develop local suppliers are also seen as inappropriate tools. As a former coordinator of local content at ANP states: "The government made a policy that looks like a hammer when we need precision tools."[51]

This criticism has its roots in the way the government sidelined ANP in the establishment of new LCR policies. While Cardoso's government had granted autonomy to ANP to formulate and implement LCR policy, Lula's government reduced ANP's decision-making role and transformed LCR into a strategy designed exclusively to promote industrial development. Yet ANP's criticisms, more than just an expression of frustration for losing their control over the process, relate to the lack of transparency in the policymaking process itself. A former coordinator of LCR at ANP puts it simply: "For us, the MME is a black box. We know that they consult the business associations, but we do not receive any technical justification explaining why equipment X or Y is included in the list of LCR."[52]

Demand creates its own supply

The Brazilian government's changes in LCR policy were developed in tandem with changes at Petrobrás. After Brazilian businesses had long criticized the government for not considering the interests of the national industry and national development, Lula's government pushed for a clear LC commitment as part of Petrobrás's business model. Consequently, the company's board mandated that it adopt LCR in all its procurement activities. A clear example of this change was the inclusion of LCR in the Program for Modernization and Expansion of the Fleet (PROMEF). Operated by the Petrobrás subsidiary Transpetro, the program used funds from the Naval Transport Promotion Fund (FNMM) to procure new oil tankers mainly from Brazilian shipyards. All new ships were required to have at least 65 percent national content, representing an important incentive for the reestablishment of the domestic shipbuilding industry.[53] Consequently, Petrobrás's orders boosted activity at Brazilian shipyards, where the number of jobs rapidly increased from 4,000 in 2001 to almost 85,000 in 2014.[54]

As mentioned earlier, President Lula emphasized the potential of the shipbuilding industry in generating jobs since the 2002 campaign. However, Lula's efforts to rebuild the industry did not represent a straightforward victory of the Rio de Janeiro regional coalition of shipyard owners and politicians. Lula gradually began to view the shipbuilding industry as a central pillar of a broader development strategy that would benefit other Brazilian regions and strengthen important national groups.[55] This view became more concrete after Transpetro's first round of procurement conducted in 2005. While the Rio de Janeiro shipyards were the obvious favorites to win the orders, the company decided to award the construction of 10 out of 26 ships to the so-called "virtual shipyard" Atlântico Sul located in the state of Pernambuco. This decision was controversial because Atlântico Sul was not an existing shipyard, but a consortium whose shareholders included important Brazilian construction firms and the South Korean firm Samsung. The consortium would only build the shipyard if it received contracts. Despite heavy criticism from politicians and shipyard leaders in Rio de Janeiro,[56] the decision initiated a wave of investments in new shipyards along the Brazilian coast, as Transpetro would continue to offer contracts to incoming players.

The discovery of huge offshore oil fields along the southeastern coast of Brazil seemed to vindicate this view about the shipbuilding industry's key role in developing the country. Officially announced in 2007, these oil fields were estimated to have 25 billion barrels in recoverable reserves. Combined with record high oil prices at the time, the discovery of the "Pre-Salt" (as the area is called in Brazil) enabled Lula's government to structure an ambitious expansion plan for the shipbuilding industry, as the country now had enough resources to explore for a generation. As a result, the government promoted changes in the rules for the "Pre-Salt" area, making Petrobrás the sole operator for the fields in the area in order to secure the company's participation in any consortium for the area. Lula's government also brokered the creation of a drilling company called Sete Brasil. Controlled by Brazilian financial institutions and pension funds, Sete Brasil would commission and operate twenty-eight drilling ships planned by Petrobrás to explore the Pre-Salt area. This new set of orders would create additional demand at Brazilian shipyards and the opportunity to build highly sophisticated vessels.

The Rousseff government and the shortcomings of LCR

The booming O&G industry and the renaissance of the shipbuilding industry during Lula's government could be perceived as a success of LCR's new policy format. The victory of Dilma

Rousseff in the presidential election of 2010 – one of the key architects of the new LCR policies – reassured supporters of the continuity of this inward-oriented developmental strategy. This optimism was justified by the astonishing growth of the Brazilian shipbuilding industry (Brazil was the fourth-largest shipbuilding nation by 2013) and Petrobras's staggering investment plans (a four-year investment plan in 2014 totaling an astonishing US$220 billion).

Despite Rousseff's faith in LCR as a silver bullet for industrial development, structural challenges became evident. In particular, two dynamics had increasingly exposed the Lula/Rousseff LCR model's limitations. First, there were growing worries about oil companies' inability to meet their contractual LCR obligations. Through the end of 2014, ANP had fined almost 40 percent of all exploration projects coming from concession rounds with more stringent LCR. Petrobrás, as the main operator, received forty-seven of the ninety-one fines for not meeting LCR targets. Dissatisfied with Petrobrás's performance, Rousseff appointed Maria da Graça Foster as the company's CEO in 2012. As an engineer who made her career within Petrobrás and worked closely with Rousseff while she was at the MME, Graça Foster received a clear mandate to improve the company's LC performance.

The second issue was the shipyards' weak performance. Shipyards were not only struggling with the steep learning curve involved in creating an industry from scratch. They also faced problems achieving the detailed list of LC specifications for different components involved in the production of drilling rigs, platforms, and FPSOs. Conflicts between shipyards and equipment suppliers became common, as shipyards have tended to import many inputs to reduce costs and production time. Such disagreements led the president of ABIMAQ (the machinery and equipment association) to criticize shipyards and Petrobrás for not complying with LCR's policy goal of promoting national industry.[57]

For Petrobrás, LCR soon became a straitjacket. Although it has been the main agent responsible for implementing the policy, the company's major goal was increasing oil production. The government's prioritization of national suppliers had become a clear impediment, as many projects suffered delays and went over the budget. In May 2013, Petrobrás filed a complaint to ANP that local industry was unable to meet the LCR set for the eleventh bidding round. Ignoring Petrobrás's complaints, the government announced that the minimum LCR would continue at the same levels for the current and future concession rounds.

The next round of salvos came from Petrobrás in early 2014, when it announced a decision to send three FPSO vessels being refurbished by the Brazilian shipyard Engevix to China for completion.[58] In July 2014, the company also allowed the Brazilian Schahin-Modec consortium to build FPSOs in other countries, arguing that Brazilian shipyards did not have the capacity to take the order. ANP responded by saying that it expected Petrobrás to fulfill its contractual LC commitment for these vessels. The public imbroglio led Petrobrás to reconsider its decision and announce that it would comply with its contractual commitment.

The unfolding of the "Car Wash" corruption scandal since late 2014 has led to further criticism of LCR. The complex corruption scheme—involving Petrobrás directors, construction companies, shipyards, and politicians from PT and coalition parties—has dealt a strong blow to the LCR model. First, the scandal vindicated criticisms about how protectionist policies generate incentives for rent-seeking and corruption. Second, the scandal directly involved many construction companies that control shipyards, leading to a suspension of credit from official banks and bringing many projects to a halt. Consequently, Petrobrás has been transferring ongoing projects to foreign shipyards in order to have them finished on time.[59]

Despite the growing criticism and the crisis in the O&G sector, President Rousseff continued to support the LCR model she helped design. Taking advantage of the centralized policymaking process for the sector, she dismissed rumors about changes in the LCR policy. President Rousseff was emphatic during a speech in 2015: "The LCR policy cannot be put aside. The LCR policy is the center of our strategy to recover the investment capacity of this country."[60]

After Rousseff's impeachment and removal from office in August 2016, the government led by Michel Temer has relaxed the previous LCR model and reoriented it toward an outward-oriented development perspective. First, it passed a law removing Petrobrás's obligation to be the operator in the Pre-Salt area. Secondly, it simplified the list of segments under LCR requirements and reduced the minimum LCR percentages in new bidding rounds. In an illustration of our argument, the new government has taken advantage of Brazil's centralized policymaking structure to implement LCR that were more aligned with an outward-oriented development perspective.[61]

Conclusion

The trajectory of LCR in the developing world shows that countries still have room for heterodox industrial policies and ambitious developmental strategies – particularly when dealing with the exploitation of natural resources. Consequently, exploring existing comparative advantages through OEIP is not the only game in town. Countries like Brazil that are not signatories of WTO's government procurement agreement still have space to experiment in areas where government procurement can make a difference. Broader developmental ambitions are still possible, but under more constrained conditions imposed by WTO.

The fate of LCR also shows that political leaders play important roles in managing coalitions of interests and exploring policy alternatives. Looking beyond Brazil, voters are increasingly challenging politicians and policymakers to articulate their views on industrial policy. While the debate about inward-oriented and outward-oriented development perspectives has mostly taken place in developing countries during recent decades, the recent rise of populist politicians in Western countries shows that conflicts about industrialization strategies are returning to the political forefront. For example, one can see a clear inward-looking emphasis in U.S. President Donald Trump's promises to bringing manufacturing jobs back to America.

However, institutional context conditions economic development ideas' impact on industrial policy. In the Brazilian case, for example, ANP's autonomy during the Cardoso government enabled the agency to design an outward-oriented LCR policy designed to promote domestic companies' competitiveness in global value chains. Yet the presidency's concentrated control over industrial policy also allowed Lula's government to make swift changes to LCR that made it more inward-looking and focused on job creation. Under Lula, decisions about LCR were made at the ministerial level and the policy changed gradually to not only protect segments of the O&G industry but also to promote the growth of new industries such as shipbuilding. This arrangement also contributed to the resilience of LCR in face of increasing criticism from several fronts. As President Rousseff seemed to be locked into her beliefs about a certain way LCR ought to be implemented, changes in the policy were systematically postponed.

Alternatively, the unfolding of the Petrobrás "Car Wash" scandal might be used as a counterargument to the notion that ideas are an important factor in determining policy. One could argue that, in fact, vested interests inspired PT governments to expand LCR. Undoubtedly, as Robert Wade argues, processes of industrial development – even in developed countries – are often accompanied by corruption.[62] The relationships among politicians, bureaucrats, and businesspeople have always been a source of collusion and corruption, even though real economic development was also achieved. However, one can argue that there are easier ways to extract rents than embarking in ambitious large-scale development plans. More specifically, the PT has adhered to an inward-oriented development perspective since its inception in the mid-1980s. The faith in the state's ability to coordinate and promote industrial development has been a core belief of President Lula and his party fellows.

Ironically, however, from an institutional point of view, the concentrated policymaking structure in Brazil that allowed for the rapid transformation of LCR from Cardoso's outward-oriented development perspective to Lula's inward-oriented perspective also contributed the country's current corruption crisis. The lack of transparency about how the government defined important policy aspects made it easier for corruption and unrealistic requirements to take root. A more open policymaking process would not have eliminated corruption entirely, but may have reduced its scale and made actors more accountable.[63]

The trajectory of LCR policies in Brazil suggests, then, that Brazilian industrial policy for the O&G sector represents continuity amid change. Some would say that LCR has followed an ideational "path-dependency" originated by the traditional ISI policies that dominated Brazil's development before the mid-1990s. However, we show that policymakers' agency also plays a key role in the process. Actors use ideas to design and legitimize policies in novel ways, exploring loopholes in existing formal structures. Future research should focus on identifying the mechanisms by which past policy experiences mold actors' existing sets of ideas and how institutional structures contribute to this process. In the case of Brazil, learning from recent failures will be an especially important step for future developmental ambitions.

[1] *The New York Times*, July 13, 2017.

[2] Claudiana G. de Jesus and Robson D. da Silva, “Trabalhadores a Ver Navios: Reflexões sobre o Mercado de Trabalho na Indústria Naval na Região Metropolitana do Rio de Janeiro”, *Cadernos Metrópoles*, 19 (April 2017), 225-48.

[3] *Financial Times*, October 13, 2016.

[4] For a summary of the “Car-wash” investigation, see *The New York Times*, August 25, 2017.

[5] Andrew Schrank and Marcus J. Kurtz, “Credit Where Credit Is Due: Open Economy Industrial Policy and Export Diversification in Latin America and the Caribbean”, *Politics & Society*, 33 (December 2005), 671–702; Lawrence P. King and Aleksandra Sznajder, “The State-led Transition to Liberal Capitalism: Neoliberal, Organizational, World-Systems, and Social Structural Explanations of Poland’s Economic Success”, *American Journal of Sociology*, 112 (November 2006), 751–801.

[6] Cornel Ban, “Brazil’s Liberal Neo-Developmentalism: New Paradigm or Edited Orthodoxy?” *Review of International Political Economy* 20 (Mars 2013), 298–331; Kathryn Hochstetler and Alfred P. Montero, “The Renewed Developmental State: The National Development Bank and the Brazil Model”, *Journal of Development Studies*, 49 (November 2013), 1484–99.

[7] Mark Blyth, “The Transformation of the Swedish Model: Economic Ideas, Distributional Conflict, and Institutional Change”, *World Politics* 54, (October 2001), 1-26.

[8] Viven A. Schmidt, “Discursive Institutionalism: The Explanatory Power of Ideas and Discourse”, *Annual Review of Political Science* 11 (June 2008), 303-326.

[9]Alberto Melo, “Industrial Policy in Latin America and the Caribbean at the Turn of the Century”, Working Paper no. 459, Inter-American Development Bank (2001).

[10] For a broader comparative analysis about the failures of the Latin American ISI model in comparison to the successful export-led industrialization of East Asian countries, see Gary Gereffi and Donald L. Wyman (eds.), *Manufacturing Miracles – Paths of Industrialization in Latin America and East Asia* (Princeton: Princeton University Press, 1990).

[11] Schrank and Kurtz, 686.

[12] Marcus J. Kurtz and Sarah M. Brooks, “Embedding Neoliberal Reform in Latin America”, *World Politics*, 60 (January 2008), 231–80.

[13] Wilson Peres, “Industrial Policies in Latin America,” Working Paper 48 (2011), World Institute for Development Economics Research, United Nations University.

[14] Aldo Musacchio and Sérgio G. Lazzarini, *Reinventing State Capitalism* (Cambridge, MA: Harvard University Press, 2014).

[15] Helge Ryggvik, "A Short History of the Norwegian Oil Industry: From Protected National Champions to Internationally Competitive Multinationals", *Business History Review*, 89 (Spring 2015), 3–41.

[16] Gary C. Hufbauer and Jeffrey Scott, *Local Content Requirements: A Global Problem* (Washington, DC: Peterson Institute for International Economics, 2013).

[17] Another part of the argument is that there is no discrimination between national and foreign-owned companies. Under Brazilian law, a company is considered local if it is registered in the country, no matter the origin of its controllers.

[18] Kenneth C. Shadlen, "The Politics of Patents and Drugs in Brazil and Mexico: The Industrial Bases of Health Policies", *Comparative Politics,* 42 (October 2009), 41–58; Silvana Tordo, Michael Warner, Osmel E. Manzano, and Yahya Anouti, *Local Content Policies in the Oil and Gas Sector* (Washington, DC: World Bank, 2013).

[19] Hochstetler and Montero, 2013, 1487.

[20] Kathryn Sikkink, *Ideas and Institutions: Developmentalism in Argentina and Brazil* (Ithaca: Cornell University Press, 1991).

[21] Martin B. Carstensen, "Paradigm Man vs. The Bricoleur: Bricolage as alternative vision of agency in ideational change", *European Political Science Review*, 3 (February 2011), 147-67; Cornel Ban, *Ruling Ideas: How Global Neoliberalism Goes Local?* (Oxford: Oxford University Press, 2016), ch.1.

[22] Blyth, 2001

[23] Schmidt, 2008

[24] David Vogel, *Trading Up: Consumer and Environmental Regulation in a Global Economy* (Cambridge: Harvard University Press, 1995).

[25] Carstensen, 2011; Ban, 2016.

[26] Lee J. Alston and Bernardo Mueller, "Pork for Policy: Executive and Legislative Exchange in Brazil", *Journal of Law, Economics, and Organizations*, 22 (April 2006): 87–114.

[27] Ben Ross Schneider, *Business Politics and the State in 20th Century Latin America* (Cambridge: Cambridge University Press, 2004).

[28] Peter R. Kingstone, *Crafting Coalitions for Reform: Business Preferences, Political Institutions, and Neoliberal Reform in Brazil* (University Park: Penn State Press, 2010): 51–2.

[29] Hochstetler and Montero, 2013.

[30] Sikkink, 142–3.

[31] Laura Randall, *The Political Economy of Brazilian Oil* (Santa Barbara, CA: Praeger Publishers, 1993).

[32] Presidência da República, "Decreto-lei no. 1703" (October 18, 1979). Accessed June 6, 2015. http://www.planalto.gov.br/CCiViL_03/Decreto-Lei/1965-1988/del1703.htm. For the prioritization of oil production by the Brazilian government, see República Federativa do Brasil, *III Plano Nacional de Desenvolvimento 1980–85* (Brasília: Secretaria de Planejamento, 1980).

[33] Many Brazilian shipyards made risky financial investments with funds from SUNAMAN and went bankrupt after the government decided to stop granting new loans during the 1980s. See Alcides Goularti Filho, "Presença e Ausência do Estado na Trajetória da Indústria da Construção Naval Brasileira: 1959–1989", *Nova Economia*, 24 (May 2014), 445–470.

[34] Interview with the authors, Rio de Janeiro, November 14, 2014. For more details, see also Tyler Priest, "Petrobras in the History of Offshore Oil", in Ben Ross Schneider (ed.) *New Order and Progress – Development and Democracy in Brazil* (New York: Oxford University Press, 2016), 53-77.

[35] Eloi Fernández y Fernández and Oswaldo Pedrosa, "A Petrobras e o Conteúdo Nacional", *Brasil Energia* (October 1, 2003).

[36] Peter R. Kingstone and Aldo F. Ponce, "From Cardoso to Lula: The Triumph of Pragmatism in Brazil" in K. Weyland, R. L. Madrid, and W. Hunter, eds., *Leftist Governments in Latin America* (Cambridge: Cambridge University Press, 2010).

[37] The leader of this task force was Garotinho's secretary of energy, Wagner Victer. Victer was a former Petrobrás engineer and worked in some of the pioneering offshore platform building projects during the 1980s.

[38] Bahia was Brazil's main producer of onshore oil, but also had prospects of new offshore discoveries at the time.

[39] Bernardo Mueller and Carlos Pereira, "Credibility and the Design of Regulatory Agencies in Brazil", *Brazilian Journal of Political Economy*, 22 (July 2002), 65-88.

[40] Interview with the authors, Rio de Janeiro, November 7, 2014.

[41] As explained by the first ONIP's General Director. Skype interview with the authors, April 23, 2015.

[42] Liana Melo, "Bate-boca em alto-mar", *IstoÉ – Independente*, no. 1717 (August 23, 2002).

[43] Ibid.

[44] As explained by Wagner Victer. Interview with the authors, Rio de Janeiro, March 24, 2014.

[45] *Folha de São Paulo*, March 31, 2003.

[46] This was a demand from other suppliers who did not want to be in an unfavorable position in comparison to engineering companies.

[47] It is important to note that, depite PT's roots in labor unions, no labor organization was included in Prominp's directive board. One main reason was the severe weakening of labor unions during the crisis of the shipbuilding industry during the previous decade.

[48] These certificates are mainly provided by business associations and based on companies' self-declarations that products are made in Brazil.

[49] As explained by a senior officer at the Ministry of Mines and Energy. Interview with the authors, Brasília, April 1, 2014.

[50] One clear example was MME's prospects of gradually increasing LCR for different segments in future rounds as the industry would have time to adjust for higher requirements.

[51] Interview with the authors, Rio de Janeiro, March 26, 2014.

[52] Ibid.

[53] The PROMEF has invested around US$5 billion since 2004 and has procured 49 oil tankers.

[54] Jesus and Da Silva, 2017.

[55] During several interviews and speeches, President Lula argued for the necessity to "spread out" the shipyard industry across the country, particularly in the poorer Northeast region. See, for example, "Café com o Presidente", *Rádio Nacional*, October 10, 2005. Accessed at January 30, 2017. Transcript available at http://www.biblioteca.presidencia.gov.br/presidencia/ex-presidentes/luiz-inacio-lula-da-silva/programa-cafe-com-o-presidente-1/2005/10-10-2005.pdf/view

[56] See for instance, *Jornal do Brasil,* July 7, 2005.

[57] *Estadão*, April 20, 2014.

[58] Ibid.

[59] *Folha de São Paulo*, July 26, 2015.

[60] *Estadão*, May 14, 2015.

[61] Pedro Parente, current Petrobrás' CEO, is one of the main voices representing this perspective. See, "Parente afirma que nova política de conteúdo local deve ser comemorada", EBC-Agência Brasil, March 22, 2017.

[62] Robert Wade, *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization* (Princeton: Princeton University Press, 1990).

[63] Surprisingly, despite the widespread corruption arrangements uncovered by the "Car Wash" investigation, there have been no cases involving ANP employees or directors regarding the implementation and control of LCR.