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Industrial policy and state-making: Brazil's attempt at oil-based industrial development

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ABSTRACT

This paper examines the changing strategies of developmental states using Brazil's oil-based industrial policy as a case study. We analyse the relationship between the state, Petrobras and industrial elites in the context of Brazil's renewed emphasis on sector-specific industrial development strategy. Taking stock and re-examining the developmental state model, we suggest that developmental states are inherently political, particularly their bureaucracy and state-owned enterprises (SOEs), and that money politics is intricately woven into state-guided high growth regimes. Given the difficulty of privatisation as a solution to SOE (mis)governance, the challenge for Brazil is to mediate extreme political interventions that have eroded Petrobras' autonomy in the past and to sustain institutional capacity to direct rents towards investment and innovation.

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Introduction

Petrobras was a victim of the [Lava Jato] criminal scheme – in not one moment was it a beneficiary.

Pedro Parente, Petrobras CEO¹

The *Lava Jato* (Car Wash) scandal that embroiled Petrobras, Brazil's state-controlled energy firm, into the centre of political corruption marked the gradual unravelling of state interventionist policies in Brazil. What became a crisis of Brazilian state capitalism has tentatively put an end to Lula da Silva and his Workers' Party (PT) deepening of state capitalism as a development strategy. As the crisis deepened, and more politicians, state bureaucrats and private companies become implicated by the investigation, questions have arisen whether Brazil's developmental state has turned into predatory capitalism. These moments of crises are interesting times, which compel scholars and policy-makers to partake their assessments over

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the policies, politics and institutions that generate successful industrial policy, and the associated costs that have to be borne with as an outcome of these development strategies.

In this context, our paper takes a step back to assess what state capitalism entails from a sectoral perspective. In evaluating Brazil's developmental state model and its effectiveness in managing economic globalisation, we focus on the PT government's attempts at crafting sectoral linkages and reviving the capital goods industries through the oil and gas (O&G) sector – a strategy reflective of some familiar instruments characterising the state-led high growth regimes of East Asia. It is undoubtedly the case that Brazil's model of development centred on state intervention, achieving key features of Northeast Asian developmental states. However, in contrast to Northeast Asia, Brazil lacked the coherence and social cohesion found in classic developmental states and failed to promote an overall re-orientation of the economy towards high value-added manufacturing.² For these reasons, Schneider suggests that Brazil's economic performance as a developmental state is medium, at best, since the country's political elites are coherent in terms of ideology and political intent (or developmental role) as well as capacity to direct policies (or developmental structures), leading to several successes in creating competitive sectors, such as in aerospace and O&G. However, the state falls short in terms of sustaining industrial growth and in creating innovation systems.³

Our substantive contribution to this special issue rests on advancing a critical appraisal of the successes and shortcomings of Brazil's sectoral policies as a means to promote industrial growth. Our argument is as follows. Firstly, we claim that developmental states are motivated by political as opposed to economic rationale in pursuit of state-guided high growth regimes. Hence, the unravelling of Brazil's developmental strategy is partly a consequence of how state-owned enterprises (SOEs) are intrinsically embedded in political interventions by national elites, leading to constrained choices over an SOE's ability to make productive investments that would lead to innovation and competitiveness in the economy. Secondly, by focussing on the O&G sector as a case study, our paper argues that developmental states can design resource-intensive development strategies provided that a clear vision exists as regards how the national government will meet the high capital requirements and intensive technological innovation systems necessary to push for structural transformation through natural resources. Historically, the O&G industry is subject to heavy state regulation and characterised by state ownership through public enterprises. In Brazil, Petrobras played a central role in sectoral development and, through its particular relationship with the government, grew to become a major global energy player. Hence, the O&G sector is today one of the main drivers of the Brazilian economy; its contribution to national GDP increased substantially from 3% in 2000 to 13% in 2014.⁴ Echoing Ovadia and Wolf in this volume, scholars need to look beyond traditional sectors if we are to seek for emerging developmental strategies outside of the East Asian region. Brazil is an exemplar of a developmental state that has successfully industrialised in the recent past, but is also attempting to make important strides to seek new comparative advantages and promote alternative ways of doing industrial policy. Our paper, then, offers an initial evaluation as regards the gains and shortcomings of its strategy.

What we know about developmental states

The idea of government intervention in developing countries has a long intellectual history that privileged the state as the prime entrepreneur in the context of uneven development.⁵ However, the necessary empirical evidence supporting the viability of state intervention did

not come until the successful industrialisation of East Asian countries. The concept of the 'developmental state' emerged, and became 'a shorthand for the seamless web of political, bureaucratic, and moneyed influences that structure economic life in capitalist Northeast Asia'.⁶ But as global market integration narrows the spaces for national industrialisation, the purpose and significance of state action in directing growth-enhancing sectors in a new international context requires asking what sort of intervention enhances productivity and generates structural transformation, how this intervention occurs and for what purpose.⁷

Historically, states have intervened in many ways to initiate economic development. In order to enhance productivity and initiate structural transformation, states used a variety of direct and indirect instruments. Such instruments ranged from subsidies, tariffs, incentives and direct credit to monetary policies, to name a few.⁸ Driven by the need and intent to industrialise, they sought to expand the size of their domestic markets through political centralisation, creation of domestic demand through backward linkages and improvement in labour productivity and supply by removing barriers to mobility as well as development of human capital.⁹ These policy objectives were achieved through the mobilisation of resources aimed at promoting the import and adaptation of foreign technology. In other words, states implemented a series of interdependent policies aimed at responding to the multiple bottlenecks of late development.

In the literature on developmental states, there are three important elements that have been identified as *necessary preconditions* for successful industrialisation: (1) a high degree of administrative capacity of the professional bureaucracy – or state capacity (developmental structures) – combined with relative political autonomy from rent-seeking interests to carry out a development programme; (2) the presence of a developmental vision or guiding ideology that proffers coherence in policy paradigm (developmental role);¹⁰ and (3) the presence of a governing coalition between states and industrial elites bound by discipline and mutual interdependence – a relationship that is crucial for the exchange of information, effective policy implementation and the creation of a shared developmental vision.¹¹ In contrast to the regulatory state often associated with Anglo-Saxon capitalism, where bureaucratic administrative capacity is focussed on rules and procedures, the bureaucracy in developmental states uses administrative discretion to establish economic goals and set targets – in other words, guide business through a number of instruments, such as preferential credit and subsidies.¹²

However, the DS literature has oftentimes come across as almost prescriptive and have been criticised for having unrealistic expectations about the actual workings of states outside East Asia.¹³ In exploring the case study of Brazil, we highlight some of the assumptions of the theory that require further elaboration. Even when states bear the key characteristics that constitute a developmental state, the nature of domestic political coalitions and the historical conditions that shaped national firms and their relationship with governments co-vary across space and time. For example, South Korea is more successful than Taiwan and Singapore in mobilising financial resources for industrialisation because the Korean state was more disciplined with capital and labour.¹⁴ Conversely, in the case of Brazil, the developmental state is not as cohesive as its East Asian counterparts and, given its economic size and territorial space, is historically fraught with political challenges of state centralisation.¹⁵

Brazil and a reappraisal of the developmental state

We draw out three elements of the theory to explain the changing Brazilian DS model. Firstly, we emphasise the *political* nature of state-building. Although 'pockets of state efficiency'

and insulated bureaucrats were fundamental in crafting cohesive development plans, such bureaucracies are neither truly depoliticised nor completely technocratic. In Japan, MITI's bureaucratic autonomy was constrained and its decisions often followed the electoral strategy of the ruling party; in Taiwan, in turn, party bosses often shifted bureaucrats across top government agencies and ministries.¹⁶ While bureaucratic selection in East Asian developmental states was based on merit, promotions were based on seniority and performance was assessed according to rule compliance.¹⁷ For Haggard, it is 'misleading to think that bureaucrats enjoyed independence' in East Asian authoritarian regimes. Instead, bureaucracies are rightly 'interpreted as instruments of authoritarian rulers, reformed not to ensure their independence but to assure their loyalty to the leadership'.¹⁸ The point is not that bureaucracies in East Asian developmental states were never autonomous and insulated; instead, bureaucracies are not completely depoliticised as direction, vision and political will are generated outside.¹⁹ Hence, when we examine Brazil and its network of technocrats found in the ministries, government agencies and SOEs, we need to be aware that their autonomy is bounded within a state rationale guided by party politics, developmentalist visions and competing political objectives. The technocratic capacity of bureaucrats to design and implement industrial planning is, therefore, a necessary but insufficient condition in producing public goods, such as sound macro-economic management and pro-business policies.

Secondly, state–business relations are typically understood as the alliance between politicians, bureaucrats and industrial elites. Through the creation of intermediary institutions and informal channels, developmental states provide the platform to facilitate exchange of information, implement policies that support business interests and create a shared developmental vision between economic and political elites. Bearing this in mind, links to society and informal and formal networks were established to create a stable channel of communication and information exchanges between private and public sectors. For example, in Japan, upon retirement bureaucrats took employment in the private sector.²⁰ The same practice can be found in South Korea and Taiwan. These permeable ties between the public and private are constitutive of the process of embedding states within societies. Thus, the foundation of successful developmental states lies on the capacity of states to discipline businesses as well as on an alliance between state and businesses – or what Johnson refers as a 'consensus' between industrialists and policy elites.²¹ This agreement, or developmental coalition, is more than a generic relationship between states and social forces. In Evans' term, it is the reconstitution of state agents and business actors in a relationship built upon the 'embedded autonomy' of the state.²²

Yet another way of understanding East Asian state–business relations is through the lens of crony capitalism, wherein state–business alliance is about how money, corruption and rent-seeking were controlled by and through state institutions. Johnson admitted the existence of extensive 'structural corruption' (*koso oshoku*) in the Japanese model, in which politicians receive funds from people seeking favours and that they have obligations to respond to these requests.²³ While some have dismissed this as an 'Asian way' of doing business, political corruption is integral to decision-making and was, in fact, a *precondition* for rapid growth in East Asia.²⁴ Prior to initiating the macroeconomic policy regimes associated with rapid growth, the conservative leaders in Japan and South Korea had to find ways to deal with potentially paralysing political battles within the right wing while the ruling Kuomintang (KMT) in Taiwan faced a potentially serious threat from an increasingly alienated majority,

many of whom did not fully accept the KMT as a legitimate government. As Wederman sums up, the right turned to machine politics to create stable ruling coalitions, which enabled the bureaucracy to implement an industrial policy that transferred rents from state coffers to the private sector. Politicians served to buffer the technocrats from society and elections became the mechanism to buy-in political support through a network of local politicians and business actors. On the one hand, businesses offered financial resources in order for conservative political leaders to build stable coalitions by 'binding together what would otherwise have been a series of rival and often hostile factions'.²⁵ On the other hand, government control and policy stability provided the ruling coalition with the capacity to harness state policies aimed at repaying the 'big bosses' in *chaebols* and *keiretsu* while also investing on public and private goods.²⁶ To put it simply, state–business alliance is effectively a stable, recurring system of redistribution between public and private channels, which meets the mutual obligations of business and the state, leading to a political coalition able to forge a developmental vision and deliver these objectives through developmental structures within the state apparatus.

However, not all close relations between states and businesses lead to positive outcomes; depending on the context, they may degenerate into particularistic predation.²⁷ An unbalanced relationship may result in penetration and capture, as in the Philippines, or loss of state effectiveness, as in Korea, where reforms led to the fragmentation of the state and strengthening of business groups.²⁸ In the context of Evan's intermediate states, of which Brazil and India are examples, an unbalanced relationship could lead to clientelism, 'inability to construct joint projects with potential industrial elites' or inconsistency, as 'joint projects may be possible in certain sectors or certain periods but degenerate into clientelism or isolated autonomy in other sectors or other periods'.²⁹ The key, as Kang outlines, is a relationship built on a *coherent state and concentrated business* ('mutual hostages'), as opposed to dispersed business groups, which would compete for rents, or a fractured state that is incapable of disciplining the industrial elites.³⁰ In other words, only when neither the state nor business can overpower each other would a developmental alliance work and lead to industrial growth.

Finally, as Nem Singh and Chen argue, state ownership particularly in strategic industries has been relatively undertheorised in relation to the workings of the developmental state. Most DS scholarship focusses on the balance between the state and privately-owned businesses in terms of building an autonomous and equal partnership as the micro-foundation of state-guided high-growth system.³¹ However, catching up in the industrialisation race is not a homogeneous or linear process; instead it is a process involving some segments of the economy through specific sectors to harness spill-over effects beyond the industry as well as to establish consumption, fiscal and production linkages over time.³² The capacity to deliver rapid growth and move into higher value-added activities are not inevitable processes. Both require institutional coordination and state planning and, historically, this was achieved by developmental states through SOEs. In fact, political leaders in East Asia partially relied on state ownership as a means to maximise rents in strategic sectors, either through monopoly or through control over assets via state-backed financing.³³ However, certain states, such as Brazil and China, are far more reliant on SOEs for the development of strategic industries. Throughout Brazil's developmental history, investment in strategic industries was mostly done through direct investments by SOEs or state-owned banks.³⁴ In the next section, we examine Brazil's DS model, its highly politicised nature and the place of state-owned

companies in strategic industries as political elites push for new methods of gaining comparative advantage in the new global economy.

Brazil's oil-based industrial policy, 2003–2016

The O&G industry is of critical importance to the Brazilian economy. In addition to its strategic importance, the discovery of pre-salt oil reserves off the coastline of Rio de Janeiro by Petrobras was momentous for the country. To start, the discovery reflected the *raison d'être* of Petrobras since 1952: to find oil reserves and reduce Brazil's energy dependence. When the PT government came to power, the O&G industry became the focal point of a new development strategy aimed at promoting technological innovation within the O&G supply chain while building sectoral linkages. This strategy became possible only through the integral role of Petrobras in the transformation of the sector. The state enterprise held a monopoly for 45 years and slowly developed the supply chain. Along the way, the SOE found its niche in deep-sea exploration and production technology. Petrobras developed its extensive knowledge of the domestic market, geological expertise of Brazilian onshore and offshore reserves and, through the import substitution (IS) model, had direct political influence in shaping O&G policy. This was consequential to Petrobras' high levels of independence from the state, which meant the firm became 'a state within a state'.³⁵

However, the changes towards more open markets in the world economy made it hard for policy elites to sustain the developmental state model.³⁶ Typical policy instruments, such as subsidies, tax rebates and protectionism, were slowly abandoned during the 1990s. In the O&G industry, the role of the Brazilian state shifted from *direct producer* with monopoly control towards a *regulator*. The Cardoso government (1995–2003) argued that private investment was crucial to bring economic dynamism to the sector. The 1997 Petroleum Law was then passed, with the principal objective of introducing market competition and breaking the state's monopoly. Through the establishment of a regulatory agency, the National Agency of Petroleum, Natural Gas and Biofuels (ANP), Cardoso sought to break tradition from the DS model and the political power of Petrobras.³⁷ Yet amidst major changes in Brazil's petroleum law, Petrobras has remained the dominant player, exercising control across different segments of the market (see Table 1).

While sectoral policy under Cardoso aimed to introduce private investment in the O&G industry, Lula da Silva (2003–2011) sought to deepen state capitalism, particularly during his second term. To this end, he sought approval of a new legislation, which was realised upon the passage of Law 12.351/2010. The law altered the nature of contracts in the Brazilian O&G sector from a concession contract towards a production-sharing arrangement. Under this new institutional design, the state retains subsoil rights while it also permits private firms to operate in the development of oil fields as service contractors. The Brazilian state reaps the high rewards, as risks of non-discovery in the oilfields are low. The legislation also established a 30% minimum participation share-rule reserved for Petrobras; consortia and joint ventures with international oil companies (IOCs) were allowed under the rules of the 1997 Petroleum Law.

Broadly speaking, da Silva's oil regulatory framework was an attempt at re-industrialisation, which coalesced around state intervention to *strategically* guide national industrial growth. There were two key components in this approach: first, heavy state investment in infrastructure in oil and related sectors to generate new demand in the domestic market;

Table 1. Petroleum and natural gas production in Brazil by operator, 2015.

	Petroleum (in Barrels)		Natural Gas (in Cubic Millimetres)	
TOTAL	889,667,381		35,126,447	
Petrobras	822,051,381.5	92%	33,115,158.6	94%
Statoil Brasil	26,459,293.4	3%	36,773.1	0%
Shell Brasil	23,460,667.4	3%	265,679.3	1%
Chevron Frade	8,500,306.9	1%	92,041.3	0%
OGX	4,900,627.0	1%	15,407	0%
Others	4,295,104.8	0%	1,601,387.7	5%

Note: ANP, *ANP Annuário 2016*, 82 (adapted).

and second, the utilisation of local content requirements to consolidate a local supply-chain while fostering linkages between oil and the wider economy. Lula da Silva sought to take advantage of Petrobras' technological advantage in offshore drilling technology by investing heavily in the O&G sector.³⁸ In 2007, the government aggressively earmarked funding for infrastructure projects with the objective of creating jobs through public spending. At the back of windfall profits from a commodity boom, da Silva launched a two-phase major infrastructure programme – the Growth Acceleration Program (PAC). An initial US\$349 billion (2007–2010) was invested through PAC 1, followed by PAC 2 with an estimated spending of US\$526 billion between 2011 and 2014.³⁹ Public expenditure rose from 0.5% in the 1990s to 5% of the GDP in 2007–2010.⁴⁰ Investment under PAC was divided into three categories: (a) logistical infrastructure; (b) energy infrastructure, which includes generation and transmission of electricity, as well as the production, exploration and shipping of petroleum, natural gas and renewable fuels; and (c) social and urban infrastructure.⁴¹ The energy infrastructure projects were concentrated in O&G aimed at exploring the pre-salt oilfields, to which the direct beneficiary was Petrobras.

The second aspect of the government's sectoral policy was focussed on local content requirements. Although it is often assumed that a radical break towards a new form of developmentalism was achieved under Lula da Silva, oil policy is an example of institutional continuity. Although Cardoso de-emphasised industrial policy, seeking to promote macro-economic stability, privatisation and deregulation, several of his policies might be considered as de facto sector-specific industrial policies. An example of this approach is the establishment of local content (LC) rules and the procurement policy under the ANP in 1999.

Through local content rules, the Brazilian state sought to expand the capacity of the domestic supply chain.⁴² This approach to sectoral development is intimately linked to the evolution of Petrobras. The company has a long history of supporting domestic suppliers. During the IS period, its policy of favouring domestic producers was strategically used to develop the capital goods sector. Petrobras successfully created a network of local suppliers, as it worked in enhancing the quality standards of inputs of Brazilian firms into the supply chain. Local content policies were widely used and Petrobras' purchases peaked at 80% in the 1980s. However, local content dropped substantially, falling to about 40% during the 1990s. The policy was then re-established in response to growing business concerns regarding the competitiveness and capacity of the domestic industry to meet the challenges of an open economy. Since 1999, companies taking part in O&G exploration are required to acquire local goods and services. Contracts signed between the ANP and oil firms also required that firms give preference to Brazilian suppliers in cases where prices, quality, and delivery were equivalent to those of international suppliers.⁴³

Under Cardoso, there was no minimum or maximum levels of local content; during da Silva's government, LC became obligatory. In 2003, the government imposed a minimum share. In 2005, the ANP introduced a measure of local content, which established a minimum and a maximum level and a certification process through an independent organisation accredited by the regulatory agency. The results were apparent (see Table 2); the average of LC increased from 33.5% in exploration and 42.25% in development phases in the first four rounds to 79.6% and 85.3% respectively in the following bid rounds.

The PT government saw the potential to use local inputs as a way to hasten the development of the local supply chain and develop linkages between the O&G sector and other productive sectors of the economy. The strategy, therefore, was to consolidate and further the vertical integration of the O&G supply chain in Brazil, using Petrobras as the main driver. Given the size of Petrobras and the importance and contribution of the oil sector to domestic GDP, the establishment of a procurement policy, which gives priority to domestic suppliers, has the potential to significantly impact the supply chain and productive structure of the Brazilian industry. For instance, in the pre-salt area, Petrobras alone was expected to invest US\$128 billion in exploration and production between 2012 and 2015.⁴⁴ In 2014, the government further estimated that until 2020, US\$400 billion would be invested in equipment, services, maintenance and production expansion.⁴⁵ This would, in theory, facilitate an increase in domestic demand of machinery and equipment, trade and services, as well as oil tankers, support ships and marine services.

The pre-salt exploration and expansion of the O&G industry also opened the possibility for sectoral linkages. An effect of the 1997 Petroleum Law was the revitalisation of the shipbuilding industry. In the 1970s, Brazil's shipbuilding industry ranked among the largest in the world. Since the late 1970s, however, the industry experienced a drastic decline.⁴⁶ At the height of liberalisation, the industry decline was intensified as domestic shipyards were exposed to increased global competition. Unable to compete, most firms went bankrupt and employment fell from over 39,000 in 1979 to only 1880 in 1998.⁴⁷

The 1997 Petroleum Law enabled competition (although limited), which in turn yielded to gradual recovery in outputs, and brought forth new demands for drill rigs, support vessels and marine services. The industry was further boosted by Petrobras' programme of modernisation and expansion of its fleet (PROMEF). Part of PAC, the programme called for investment in support vessels, platforms and related services that were expected to reach R\$135 billion (approximately US\$41.5 billion at current exchange rates) until 2020.⁴⁸ In other words, Petrobras was fundamental to the recovery of the shipbuilding industry by retaining its role as the largest contractor of vessels and marine support services in the country. In terms of investment, Petrobras, through its subsidiary Transpetro, shored up purchases and volume of orders that reached up to 80% of sectoral investment.⁴⁹

The local content policy was further extended to the sector and used as the main instrument for the development of local suppliers. The basic rules for local content were no different in the shipbuilding sector as shipbuilders, equipment manufacturers and service providers were required to fulfil LC requirements. According to SINAVAL – the organisation that represents Brazilian shipyards – in 2011, the local industry aimed to supply over 70% of the inputs required for the construction of tankers and over 64% of the inputs for FPSOs.⁵⁰ Petrobras demand for new vessels was expected to assure work in Brazilian shipyards up to 2020.⁵¹ As a result of the LC policy and incentives to revitalise the shipbuilding industry, employment in the sector increased significantly – reaching over 82,000 in 2014⁵² – as

Table 2. Bidding rounds and percentage of local content, 1999–2015.

	R1	R2	R3	R4	R5	R6	R7	R9	R10	R11	R12	R13
Bidding Rounds	1999	2000	2001	2002	2003	2004	2005	2007	2008	2013	2013	2015
Local Content (%)												
Exploration Phase	25.0	42.0	28.0	39.0	78.8	85.7	74.0	68.9	79.0	61.5	72.6	73.1
Development Phase	27.0	48.0	40.0	54.0	85.6	88.8	81.0	76.5	84.0	75.6	84.5	79.5

Note: Percentages are averages per round. ANP, *ANP Annuário 2016*.

investment, mostly from Petrobras, in upstream segments of the pre-salt area fuelled new demands for ships. However, despite these positive results, there were important shortcomings in the design of PT's sectoral policy, which hindered the effectiveness of the strategy. These are discussed in detail below.

The decline of state-guided growth regimes: Brazil amidst a crisis

During the period marked by the commodity boom, Brazil experienced decent growth rates, an expansion of the middle classes and subsequent increase in consumption and a return to an interventionist state. However, flaws in policy design and the exacerbation of politicisation that consolidated a state-managed rent-seeking system have contributed to what is now a political and economic crisis. In this section, we examine the factors that contributed to the failure of state intervention as a development strategy in Brazil.

Inherent flaws in institutional design of the Brazilian DS

State intervention is an expensive, highly politicised process that requires cohesiveness both in developmental vision and structures. Therefore, any state intervention must be justified by the *objectives of the economic and development policy*. The Brazilian LC policy, however, lacked strategic direction. It failed to take into consideration long-term goals, namely value-creation and diversification of the economy. From the beginning, the 'policy's general objectives were quickly imposed without focused targets' or 'advanced metrics or indicators that could accurately measure its results'.⁵³ There was no consideration of which segments of the domestic industry had better chances of competing internationally and, therefore, could benefit most of extended protection. It also failed to appreciate the realities and actual production capacity of the domestic industry.⁵⁴ By establishing high local content requirements, it created a demand for equipment and services beyond the supply's chain production capacity. Investments in the Brazilian O&G sector increased rapidly, from US\$10 billion in 2006 to US\$40 billion in 2013. Domestic firms did not have the time and capabilities to adjust to the sudden growth, since to fill the demand of the industry would require substantial investments.⁵⁵ The LC requirements became impossible to achieve, which then led to delays, fines and higher prices. In 2013, Petrobras complained to ANP that the local industry could not meet LC requirements to proceed with exploration and development of oil fields auctioned in Round 11. It also announced that it was moving the work on the conversion of four tankers into FPSOs to China because Brazilian shipyards could not keep up with the required construction schedules.⁵⁶ Crucially, the lack of international competitiveness of the domestic industry became manifest as prices of domestically produced equipment could be nearly 70% more expensive than its foreign competitors.⁵⁷ In other words, domestic content became costly and highly controversial.

The policy further failed to properly consider the capacity of the regulatory agency to monitor the sector. The ANP as a regulatory agency did not have sufficient capacity to enforce the rules given the complexity of the O&G industry and of the LC rules. In an audit carried out in 2012, the Federal Court of Auditors (TCU) concluded that the ANP lacked the structure to adequately supervise the industry. According to the report, the ANP's inspection and monitoring system were flawed since it relied solely on information declared by companies.⁵⁸ With the change in the methodology for measuring LC requirements and the adoption of

the certification system in 2005, third-party evaluation was established as a requirement. This, in turn, introduced new activities which resulted in accumulation of tasks and limited the agency's coordination capacity and performance.⁵⁹

In addition, the institutional gridlock between ministries coordinating the sectoral policy is also an indication of the weakening state cohesion in Brazil. While the Ministry for Mines and Energy (MME) and ANP are jointly responsible for the formulation and implementation of sectoral policy, these agencies were unable to design a cohesive sectoral approach given their distinctive institutional rationale, objectives and regulatory functions. Unlike in the past, where Petrobras controlled the needs and demands of the sector due to its monopoly position, the ANP faced technocratic deficits to monitor and make Petrobras compliant – a company that trained and hired professional oil engineers and geologists over the past 45 years.⁶⁰ As the first ANP Director, David Zylberstajn, puts it, 'the challenge for ANP was to establish itself as a credible regulatory body that can effectively conduct social, environmental, and commercial audits to promote fair competition in the sector'.⁶¹

Building developmental capacity and technocratic expertise in the O&G sector was challenging in a developmental state model where regulatory bodies do not have similar logics of administrative functions compared to the Anglo-Saxon liberal capitalist model. In Brazil, both ANP and MME did not have the time to develop contacts with their domestic suppliers. Thus, the state had limited understanding and capability to formulate policies that directly responded to the problems and concerns of the industry.⁶² By contrast, Petrobras' developed the local supply chain during the IS period through its capacity to transfer information between the market and the state. Furthermore, a key feature of the Brazilian DS model is the reliance on SOEs in promoting its industrial policy. The cornerstone of PT's oil-led strategy assumed that Petrobras would drive both the demands for heavy capital goods and technological learning in the sector. While such dependence worked for Brazil during the IS period, similar approach failed as Petrobras became politicised and the target of a grand rent-seeking scheme.

The creation of a state-managed rent-seeking system

Perhaps what hastened the decline of the state-guided growth regime in Brazil is the extreme politicisation of the bureaucracy combined with the consolidation of rent-seeking centralised around the PT government. The Car Wash (*Lava Jato*) scandal is the most evident example of how extensive structural corruption has led to the weakening of the Brazilian state's developmental capacity. Petrobras became entrenched in a rent-seeking scheme that involved millions of dollars in kickbacks to officials of the SOE, high-level bureaucrats and elected politicians, particularly members of the ruling PT government. The scheme lasted for at least a decade and was aimed at defrauding Petrobras on contracts upon the discovery of pre-salt oilfields. Contractors organised a cartel and paid bribes to Petrobras senior executives, segments of the bureaucracy and elected politicians. A criminal conspiracy was organised and run from within Petrobras after 2003 – a period when former president Dilma Rousseff was Minister for Mines and Energy and chairman of the company's board of directors as well as chief of staff of Lula da Silva's government. According to the Public Prosecutor's Office (MPF), the prices in the contracts offered to Petrobras were calculated and adjusted in secret meetings.⁶³ These meetings served for the contractors to agree beforehand which company would win the contract and at what price. Consequently, bribes, which varied from

1% to 5% of the total amount of contracts, were then distributed through financial agents in order to ensure that transactions would go through the state apparatus.⁶⁴ Among the directly implicated in the scandal are the CEOs and senior executives of major construction companies, such as Odebrecht Group, OAS, Queiroz Galvão, Andrade Gutierrez SA and Camargo Corrêa.⁶⁵

The damage of the scandal is particularly evident in Petrobras, which quickly eroded its reputation as a highly professional and autonomous state enterprise. Those involved sought to ensure that only members of the cartel would be invited to bid on projects. To do so, Petrobras' employees were co-opted, who then restricted the participation of outsiders, negotiated unnecessary additions to contracts, raised prices at excessive rates and leaked relevant information to favoured bidders.

The scheme, however, goes beyond Petrobras and extends to the wider political system. A second pillar of the Car Wash scheme was the involvement of financial operators who became responsible not only for intermediating the payment of bribes, but also for laundering and distributing the money to key beneficiaries in the legislature and executive branches. In 2015, the Attorney General of the Republic presented to the Federal Supreme Court 28 petitions for the opening of criminal investigations on 55 people, 49 of which were holders of *foro privilegiado* (privileged forum).⁶⁶ This is a special status granted to individuals with high positions in the public administration. In practice, these are office holders in the executive, legislative and judiciary branches of government to which only the Supreme Court has the power to prosecute. As the investigation unfolded, most people charged are related to political parties responsible for nominating and maintaining the directors of Petrobras.⁶⁷ It is estimated that over US\$2 billion were redistributed through the scheme, mostly to the benefit of the scheme's operators and to politicians, mostly from PT and its main coalition partner, the Party of the Brazilian Democratic Movement (PMDB).

The goal of the scheme is very telling about developmental states outside East Asia. Moneyed influence was an effective instrument to grease the political system into buying political support, sustaining electoral victories of politicians in power and consolidating a permanent coalition that would generate institutional equilibrium. On the one hand, construction companies benefitted from lucrative contracts that led them to internationalise and provided stable support to PT's developmental vision. On the other hand, kickbacks and side payments were channelled from big private firms towards public agencies and political parties – a precondition for PT to keep political power intact while promoting its expensive industrial policy. Like structural corruption, the PT sought to create a mutually-beneficial arrangement that would mitigate regional factionalism, clientelism and patronage, and fragmentation resulting from Brazil's democratic multiparty system. At the same time, this scheme is precisely the reason why state-led developmentalism in Brazil has lost its steam today.

Implications of the Brazilian case to developmental state theory

The rent-seeking scheme that began to be uncovered in the Car Wash investigation has important implications for the study of developmental states. To start, Brazil reaffirms the arguments of Kang, Wedeman and Weiss as regards the centrality of political corruption in generating political stability and in the formation of pro-growth coalitions. While industrial policy can be interpreted as the productive allocation of rents leading to state-guided

growth, the *manner* of distributing state resources is in fact mediated by money politics and collusion between states and big business. Perhaps more crucially, what Wedeman considers as developmental corruption in East Asia now appears to be more synonymous with predatory corruption given that Brazil's Car Wash scandal dramatically impacted the credibility of Petrobras and weakened the capacity of the state to discipline domestic firms. By early 2015, the new management team of Petrobras announced that the scandal had cost the company US\$17 billion, its market value was reduced by half, is burdened by a US\$100 billion debt and had to deal with a class action suit and investigations by the US Securities and Exchange Commission (SEC) and Department of Justice. This has led the company to cancel or postpone its investment plans, halting the development of the domestic oil industry.

Taking a comparative perspective, Brazil's structural corruption resembles the process upon which South Korea, Thailand and Indonesia have been crippled by rent-seeking in the face of an economic crisis. In these countries, the developmental state became synonymous with crony capitalism, and the close relationship between states and big business was suddenly blamed as the malaise of development. The same industrial policy that fuelled the expansion of strategic sectors and financed state-guided high growth system began to be perceived as the root cause of corruption and the reason for the on-going political crisis in Brazil. Hence, structural or developmental corruption and wastage of state resources are two sides of the same coin. The question is how far such state intervention and the politicisation of the state apparatus can generate political stability – a precondition for high growth – and under what conditions rent-seeking becomes predatory and damaging to growth.

Secondly, Brazil's industrial policy has produced mixed results, which is partly an outcome of the inherent flaws of its strategy and partially due to political interactions between states and SOEs. While corporate governance reforms were implemented in Brazil to transform SOEs into more efficient firms, this was ultimately not sufficient to insulate the company from being used as an instrument of rent-seeking of political elites. In significant ways, it confirms the long-standing dilemma of state capitalism: how to maintain competitive SOEs and internationally-oriented domestic firms while also avoiding excessive state interference that oftentimes reverse the benefits of development policy.

As Brazil's *Lava Jato* investigation draws to a close, the costs of state interventionist policies and its rent-seeking tendencies are becoming clear. In a sector that was largely dependent on a single SOE for its expansion, Petrobras' reduction in expenses and investment caused the supply chain to dramatically shrink in terms of production, employment and consequent reduction in consumption of goods and services, as well as tax revenues. Crucially, the effects of the scandal spread from the O&G to the construction sector – one of the key sectors directly being investigated – as well as the shipbuilding industry, which was heavily dependent on Petrobras orders. As the company reduced and halted its orders, the industry immediately lost its biggest market. The story of Brazil's developmental approach reflects the tensions inherent in this model of growth. As we argued earlier, developmental states require institutional capacity and developmental vision; their success hinges on the capability of political elites to strike a balance between state discretion over designing industrial policy on the one hand and sustaining a coalitional base without turning into rent-seeking and clientelism. For aspiring developmental states, purposive and pragmatic state action in pursuit of new strategies is important, but this approach bears costs as political interventions can oftentimes lead to rent-seeking, and worse, the creation of predatory capitalism.

Disclosure statement

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Notes

1. Leahy, "Brazil's State-Controlled Companies."
2. Schneider, "Developmental State in Brazil."
3. Schneider, "Developmental State in Brazil"; see also Evans, *Embedded Autonomy*; Kohli, *State-Directed Development*.
4. BN Americas, <http://www.brasil.gov.br/economia-e-emprego/2014/06/setor-de-petroleo-e-gas-chega-a-13-do-pib-brasileiro>.
5. Hirschman, *Strategy of Economic Development*; Nurkse, *Problems of Capital Formation*; Rosenstein-Rodan, *Problem of Industrialization*.
6. Woo-Cummings, *The Developmental State*, 1.
7. Nem Singh and Ovadia, "The Theory and Practice of Building Developmental States."
8. Adelman and Yeldan, "End of the Developmental State," 4.
9. Ibid.
10. For the distinction between developmental structures and roles, see Vu, "State Formation."
11. Amsden, *Asia's Next Giant*; Evans, *Embedded Autonomy*; Johnson, *MITI and the Japanese Miracle*; Wade, *Governing the Market*.
12. Routley, "Developmental States"; Vu, "State Formation."
13. For a reappraisal of this debate, see Chu, *The Asian Developmental State*; Williams, *The End of the Developmental State?*
14. Yeung, "Rethinking the East Asian Developmental State."
15. Chibber, *Locked in Place*.
16. Noble, *Collective Action in East Asia*.
17. Nunberg, "Civil Service Quality."
18. Haggard, "Institutions and Growth," 64.
19. Pempel, "The Developmental Regime," 144; Randall, "Political Parties," 638–9; Routley, "Developmental States," 21.
20. Johnson, *MITI and the Japanese Miracle*.
21. Johnson, *MITI and the Japanese Miracle*.
22. Evans, *Embedded Autonomy*.
23. Johnson, *MITI and the Japanese Miracle*; Vogel, *Japan Remodelled*.
24. Wedeman, *Double Paradox*, 15–16.

25. Ibid., 17–18.
26. Ibid.
27. Evans, *Embedded Autonomy*, 53.
28. Wade, “After the Crisis,” 158.
29. Evans, *Embedded Autonomy*, 60.
30. Kang, *Crony Capitalism*, 13–18.
31. Johnson, *MITI and the Japanese Miracle*, 195, 309.
32. Hirschman, *Strategy of Economic Development*.
33. On different types of rents, rent-seeking and productive distribution of assets leading to rapid growth, see Amsden, *Escape from Empire*; Amsden, *The Rise of “The Rest”*; Khan, “Rents, Efficiency and Growth”; on Malaysia, see Gomez and Jomo, *Malaysia’s Political Economy*.
34. Amsden, *Escape from Empire*; Trebat, *Brazil’s State-Owned Enterprises*.
35. For this concept, see Thurber, Hults, and Heller, “Exporting the ‘Norwegian Model.’”
36. Nem Singh and Ovidia, “The Theory and Practice of Building Developmental States.”
37. Nem Singh, *Building Developmental Capacity*.
38. Nem Singh, *States, Markets and Labour Unions*.
39. SECOM, “Brazil Announces Phase 2.”
40. Resende, “Chapter 2.1. Infrastructure,” 32.
41. Pardelli, “Appendix 1,” 54–7.
42. In a Brazilian context, local content rules refer to the percentage of domestically produced goods and services used in O&G projects.
43. Xavier Junior, “Políticas de Conteúdo Local.”
44. BNDES, “Perspectivas de Investimento.”
45. PWC, “A Indústria Brasileira.”
46. Several factors, such as low worldwide demand, low productivity, macroeconomic instability and overdependence on orders from SOEs, contributed to failing production and employment levels; Araujo, Dalcol, and Longo, “Diagnosis of Brazilian Shipbuilding.”
47. Araujo, Dalcol, and Longo, “Diagnosis of Brazilian Shipbuilding.”
48. Silva Campos Neto, “Investimentos e Financiamentos.”
49. Pires, Gomide, and Amaral, “A Ver Navios?”
50. SINAVAL, “Offshore and Shipbuilding Industries.”
51. Ibid.
52. ABENAV, “Dados do Setor,” 2016.
53. Narciso Filho, “Brazil’s Oil & Gas Local Content Policy,” 3–4.
54. Narciso Filho, “Brazil’s Oil & Gas Local Content Policy.”
55. IBP, “Proposta de Políticas Públicas,” 14–15.
56. Offshore Magazine, “Petrobras moves FPSO Conversion Work to China.” <http://www.offshore-mag.com/articles/2013/02/petrobras-moves-fps-conversion-work-to-china.html>
57. ONIP, “Agenda de Competitividade.”
58. TCU, “Relatório de Auditoria Operacional.”
59. Ibid.
60. Nem Singh, *States, Markets and Labour Unions*.
61. Author’s interview with David Zylberstajn, Rio de Janeiro, August 2010. See also Nem Singh, *States, Markets and Labour Unions*, for complete discussion of this point.
62. CNI, “A Indústria e o Brasil.”
63. MPF, “Caso Lava Jato.”
64. Ibid.
65. Ibid.
66. Ibid.
67. Ibid. Among those implicated by the scandal were prominent business people and politicians, such as Senator Delcídio do Amaral of the PT, the president of the Senate, Renan Calheiros; the speaker of the House, Eduardo Cunha; and Lula da Silva’s former ministers of finance, Antonio Palocci and Guido Mantega; and former Minister for Mines and Energy, Edison Lobão, among others. Later, Lula da Silva, himself was ensnared by the investigation and convicted. The fallout of the scandal also cost Dilma Rouseff the presidency and plunged the country into one of the worst recessions in history.

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