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The Operation Carwash and changes in Petrobras management: Evaluating a critical episode

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Abstract

This article examines how the political and economic crisis that began in 2014 in Brazil, with the Operation Carwash as one of its prime determinants, affected the oil, gas and civil construction production chains. In particular, it highlights two interrelated processes with strong impact on those sectors: the Operation Carwash, which precipitated an intense reputational crisis for Petrobras, and the reorientation of the State enterprise's corporate strategy which, as of May 2016, turned towards short-term remuneration for shareholders. The article also examines adverse economic effects of those changes on productive organisation Brazil-wide and in some specific geographical local areas.

Key words: oil industry; Petrobras; shareholder value

Resumo

Este artigo analisa como a crise política e econômica brasileira, eclodida a partir de 2014, que teve na Operação Lava Jato um dos determinantes principais, impactou a cadeia produtiva do petróleo, gás e construção civil. Em particular, destacamos dois processos inter-relacionados com forte efeito sobre os referidos setores: a Operação Lava Jato, que gerou uma forte crise reputacional da Petrobrás; e a reorientação da estratégia corporativa da estatal a partir de maio de 2016 voltada para remuneração curto-prazista aos acionistas. O artigo avalia ainda os efeitos econômicos negativos das referidas mudanças para a organização produtiva nacional e alguns entornos geográficos específicos.

Palavras-chave: indústria do petróleo; Petrobras; valor para o acionista

JEL Classification: L52; L71; 014

1 Introduction

This article conducts an exploratory analysis of how the consequences of the 2014 Operation Carwash (*Operação Lava Jato*, in Portuguese) contributed to the crisis in Brazil, particularly as regards the oil, gas and civil construction production chain.

Accordingly, it offers a stylised reconstitution of Brazil's economic trajectory, highlighting two interrelated, underlying processes: Operation Carwash, which resulted in an intense reputational crisis for Petrobras and, from May 2016 onwards, the reorientation of the State enterprise's corporate strategy towards short-term shareholder remuneration.

Operation Carwash levelled corruption charges at important figures in State enterprises and businessmen connected with major construction companies. Given the prominence of Petrobras and Brazil's leading construction companies, many of which had businesses abroad, it thus unleashed a direct legal onslaught on the core of Brazilian national capitalism. After all, oil, gas and civil construction are among the few sectors of industry in Brazil where domestic capital predominates. This led to an acute paralysis of decision-making in the areas involved and inevitably affected both Brazil's economy and the correlation of political forces in play.

Meanwhile, the reorientation of Petrobras's corporate priorities was made possible by a new political coalition captained by president Michel Temer (former vice-president to Mrs Roussef), which came to power in the Executive branch of the government after an alliance was formed including even opposition parliamentarians defeated in the 2014 elections. With the economy and its popularity in severe crisis, the Workers' Party (*Partido dos Trabalhadores*, PT) was displaced after 13 years in government and, under Brazil's new president, it was announced that Petrobras would be repositioning and redesigning its own strategic role in Brazil's economy. This was justified rhetorically as imperative, in view of the financial crisis affecting the State enterprise caused by the previous mandate's alleged "mismanagement" and "corruption" (*Agência Brasil*, 2017).

This article assesses the adverse economic effects of those changes on domestic productive organisation nationally and in some specific geographical areas, as well as interrelations affecting the oil, gas and civil construction industries – a trio that had been a driving force behind employment and income generation under the PT governments.

Methodologically, the *empirical data and information sources* used were both *primary* (from Petrobras itself, the construction companies' annual reports and those of government statistics bureaus) and *secondary*, in the form of a variety of studies, press articles and so on.

The article is divided into four sections in addition to this Introduction. *Section 2* maps Petrobras's past trajectory and interrelations with the civil construction industry from 2003 to 2013. That stylised reconstitution, up to immediately prior to the crisis, will facilitate the comparative analysis. *Section 3* reconstitutes the chronology of Operation Carwash from when it was launched in mid-2014, when it had major impact on Brazil's political system and of course on Petrobras, both resulting in a reputational crisis and disorganising the structure and relations of its main projects and those of its domestic suppliers: Brazil's major engineering firms. *Section 4* then examiners the changes in Petrobras's management strategy, mapping the new priorities and how these fit with a neoliberal ideological paradigm unlike that of the previous government. *Section 5* closes by offering some final remarks.

2 The trajectory of Petrobras from 2003 to 2013

After a period of relative lethargy in Petrobras' activism during the neoliberal 1990s, the arrival of Lula and the PT to the presidency in the 2002 elections restored its historical role and dynamism (Pinto, 2020a: p.147)[1]. In that regard, between 2003 and 2013,

[1] Pinto (2020a) reports that, although Petrobras was not privatised in the 1990s, important alterations did occur in its corporate strategy and in oil and gas industry regulatory frameworks during that period: direct State control was partly diluted with the creation of the National Oil Agency (*Agência Nacional do Petróleo*, ANP) under Article 8 of Law No. 9478, which also ended the Petrobras monopoly of exploration, production, refining and processing, allegedly in order to attract Brazilian and foreign private capital to the industry.

Petrobras investments in oil and gas production, exploration and refinery capacity expanded exponentially: nominal investments increased steadily in the period to reach a historical peak of US$ 48.1 billion (Petrobras, 2015). In 2009, Petrobras had also reached the milestone of contributing directly (spillovers aside) 12.0% to Gross Fixed Capital Formation and 2.3% to Brazil's Gross Domestic Production (GDP).

In many respects, the PT governments were responsible for the resurgence of an "energy nationalism", expressed in new changes in the oil industry regulatory framework. These were designed to: (i) expand the economic surplus (via oil and gas industry revenues) so as to fund the government's social spending; (ii) increase industrial goods and service output by public procurements through Petrobras itself and through spillovers deriving from the formation of production chains with local suppliers; and (iii) expand Petrobras's public investments both in production and extraction and in petroleum product refining (Pinto, 2020a; Azevedo, 2021).

That "energy nationalism" and those company-centred industrialist goals were embodied in Petrobras's Strategic Plans, beginning in 2006. The 2007-2011 Business Plan (and those that followed) explicitly stressed refinery capacity, vertical integration and Petrobras's national development role, all of which were to be strengthened by using local content requirements as an industrial policy instrument (Petrobras, 2006)[2].

There were also plans to expand domestic distillation capacity by building the new refineries Clara Camarão (Rio Grande do Norte), Abreu e Lima (Pernambuco), Premium I (Maranhão) and Premium II (Ceará) and in the Comperj Petrochemical Complex (Rio de Janeiro) (Azevedo, 2021). This was intended both to increase supply of petroleum products and thus avert domestic production bottlenecks and to generate demand for various branches of Brazilian industry, especially the capital goods industry, besides

[2] Petrobras's other goals in that plan included increasing its capacity in biomass, petrochemicals, fertilizers and biodiesel (Petrobras, 2006; Pinto, 2020a).

stimulating technological development in deep-water exploration activities (Pinto, 2020a)[3].

Those investments were also made possible by rising commodity prices: the barrel of Brent oil climbed from US$ 25.75 in late July 2002 to US$ 117.79 in March 2012, favouring Petrobras's net profits and subsequently its reinvestments (Azevedo, 2021). In this way, investment *by* and *in* Petrobras not only maintained production in fields that were already active, but facilitated the development of the exploration programme which led, in 2007, to the discovery of vast oil and gas reserves in the pre-salt layer, thus opening a new – and still more outstanding – chapter in the Petrobras story (Rossi *et al*., 2015).

In view of that discovery, the Lula (and later Dilma) governments acted to foster integration among the production, refining and distribution systems, both upstream and downstream. That integration was made possible by arrangements with the National Congress in 2010 to approve a new oil and gas regulatory framework, extending the State's share of industry revenues and providing Petrobras, institutionally, with strategic control over technologies and know-how (Azevedo, 2021).

Following the pre-salt discovery, oil development and exploration projects were expanded, as were investments demanding civil works, materials, equipment and private services supplied by domestic firms, leveraging still further local production clusters (LPCs) and related chains (Rossi *et al*., 2015; Pinto, 2020a)[4]. This synergy was achieved through the National Oil and Gas Industry Mobilisation Programme (*Programa Nacional de Mobilização da Indústria de Petróleo e Gás Natural*, PROMINP), which was launched

[3] In addition to this, the preference for building several of these refineries in the Northeast region is attributed to higher market growth rates there and a more imbalanced relation between installed capacity and demand for petroleum products (Azevedo, 2021).

[4] Rossi *et al*. (2015) defined LPCs by the meshing of three spheres or dimensions: institutional or technological innovation, interaction among social actors and the strong local dimension that defines them and gives them their name; these foster relations of cooperation and learning. Their action focuses on: (i) finding regional and local vocations for supplying goods and services; (ii) boosting technological complexity by requiring accumulated knowledge; (iii) expanding demand in sectors with high growth potential; promoting goods and equipment with base technology and produced on a large scale; and (iv) obtain geographical competitive advantages, and others.

in March 2003 to benefit Petrobras's supplier firms by raising minimum local content requirements in goods and service procurement[5].

Under the influence of PROMINP, the development of Petrobras's local vendors was encouraged by the LPCs mentioned above, which produced direct effects and positive economic externalities. Rossi *et al.* (2015) estimate that, from 2005 to August 2014, projects under the programme accounted for total investments of US$ 140 million and developed more than 130 highly qualified suppliers, as well as micro and small businesses, with the support of those states that signed related agreements with Petrobras and SEBRAE[6]. At the same time, Petrobras's corporate local vendor registry gained 5,000 new vendor companies, accounting for around R$ 6 billion in business.

In that way, this policy associated with Petrobras's strategy for the oil and gas industry enabled the company to expand its average local content between 2002 and 2013 from 39% to 73% in production and from 54% to 84% in development. By stimulating local producers, this resulted in greater employment and income generation, with that demand, in turn, feeding back into their investment and technological capacity-building (Pinto, 2020a).

Early in 2013, another round of PROMINP projects was launched, providing for new LPCs and dialoguing with other actors and institutions, including SEBRAE, the National Confederation of Industry (*Confederação Nacional da Indústria*, CNI), the National Economic and Social Development Bank (*Banco de Desenvolvimento Econômico e Social*, BNDES), the Ministry of Industry, Foreign Trade and Services (*Ministério da Indústria, Comércio Exterior e Serviços*, MDIC), the National Oil Industry Organisation

[5] The PROMINP, with the permission of the National Petroleum Agency (*Agência Nacional do Petróleo*, ANP), was also intended to install technological innovation and labour qualification projects, so that supplier firms could properly meet Petrobras's needs. Azevedo (2021) reported that, through partanerships wth a variety of government departments and entrepreneurs, Petrobras deployed R$ 536 million to train some 300,000 staff and workers.

[6] Brazilian Micro and Small Business Support Service (*Serviço Brasileiro de Apoio às Micro e Pequenas Empresas*).

(*Organização Nacional da Indústria do Petróleo*, ONIP) and others (*Valor Econômico*, 2012).

These new LPCs were designed to induce and intensify economic activities in vitally important territorial clusters, harnessing the benefits of geographical advantages for companies, the public sector, research institutions and other economic and social actors. The concentration of productive linkages would thus facilitate technological innovation, economies of scale and optimisation of infrastructure (Rossi *et al*., 2015). The territories chosen for the new round of the PROMIMP were:

- Ipatinga and surrounding area, in the Vale do Aço metalworking hub (Minas Gerais);

- Ipojuca and surrounding area, in the Suape Industrial and Port Complex and the Atlântico Sul and Vard Promar shipyards, and the Abreu e Lima Refinery (RNEST) and the Suape Petrochemical complex (Pernambuco);

- Itaboraí and surrounding area, where the Comperj is sited (Rio de Janeiro);

- Maragogipe and surrounding area, where the industrial zone grounded in the naval and offshore exploration sectors was developed, including the Aratu Industrial and Port Centre, the Enseada and São Roque de Paraguaçu shipyards and the Landulpho Alves Refinery (RLAM) (Bahia);

- Rio Grande and surrounding area, particularly in naval shipyards (Rio Grande do Sul).

These territories, where promising industrial hubs contemplated by new LPCs were now developing, would shortly witness a context diametrically opposed to what had been envisaged when those initiatives were launched. The whole flourishing trajectory described so far, Petrobras's multiple projects and growing leadership at the head of burgeoning domestic capitalism, was to encounter decline and reversal from 2014 onwards. Operation Carwash would shake the economic foundations of Brazil's production regime, as well as the national political system itself[7]. That and its effects will now be discussed in Section 3.

3 Operation Carwash and its economic impacts

In 2014, interrupting the upward trajectory that had held since the previous decade, Petrobras was to face a "perfect storm", which would affect not only the company, but the whole oil and gas industry, as well as the civil construction, naval and other industries (Ordoñez & Rosa, 2018; Paula & Moura, 2019). Before examining the chronology of the operation and its unfolding, there are three important points to be highlighted as regards the state oil enterprise, which were bringing its financial situation under stress, even before – and, to a large extent, just as – the episode began.

The first point was the exchange rate depreciation that occurred under the first Dilma government: the nominal exchange rate jumped from R$ 1.67 (reals) per US dollar in 2011 to R$ 2.35 in 2014, then reached R$ 3.33 in 2015 (World Bank, 2021). The devaluation of the real, added to still high oil prices until mid-2014, affected the oil and petroleum products market. From Petrobras's standpoint, that devaluation increased importation costs and made servicing company debt more expensive in reals, particularly after 2012 (Azevedo, 2021)[8].

The second point was the dizzying plunge in oil prices: the barrel fell from US$ 110 in June 2014 to US$ 47 in January 2015 and US$ 30.8 by January 2016. That had violent adverse impact on the company's revenue and profitability (Santos & Moura, 2019).

The third point was that, between 2011 and 2014, the Dilma Rousseff government, faced with increasingly rapidly rising prices, also used Petrobras as an instrument to attenuate

[7] For an analysis of Operation Carwash's effects on the political landscape, the party system and the 2016 and 2018 elections, see Kerche & Tanscheit (2021).

[8] Azevedo (2021) also notes that 2012 was the first time since 1999 that Petrobras had posted a loss as a result of the impacts of exchange variations.

inflation[9]. Accordingly, Petrobras practiced a deliberate policy of repressing its domestic prices, waiving short-term revenues resulting from domestic petroleum product sales (Pinto, 2020a).

In short, a double whammy from plummeting oil prices and exchange devaluation caused a major drain on revenues and greater company indebtedness, at a time when gains were being eroded by weak domestic petroleum and diesel prices together with substantially larger investments in refineries to contemplate the output from the pre-salt fields. Petrobras was making enormous investments, in a medium- and long-term wager, precisely when it needed more self-financing or retained earnings (Pinto, 2020a; Azevedo, 2021)[10].

The foregoing resulted in Petrobras suffering losses of R$ 26.6 billion in the 4th quarter of 2014. These were its largest in nearly thirty years, but would be surpassed in the 4th quarter of 2015 with losses of R$ 36.9 billion, the worst in its entire history (Petrobras, 2016; El País, 2016).

Returning to Carwash, the operation was formally set in motion in 2014 by the State's witness agreements signed in June by former Petrobras director, Paulo Roberto Costa, and the illegal money broker, Alberto Yousseff, with the Federal Public Attorney's Office (*Ministério Público Federal*, MPF)[11]. Finally, on 23 October, one week before the second round of voting in the presidential election, the Federal Police leaked Yousseff's statement, in which he denounced a massive web of corruption involving commissions

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[9] In 2011 the Extended Consumer Price Index (*Índice de Preços ao Consumidor Amplo*, IPCA), one of the indicators used to measure inflation, recorded growth of 6.5%, the upper limit of Brazil's inflation target range. Throughout the first Dilma government, inflation was pressured and oscillating just below the ceiling (IBGE, 2021).

[10] On this point, Pinto (2020a) stressed that the ratio of retained earnings to total investment fell from 56% in 2006 to 25% in 2014.

[11] Public Attorney Deltan Dallagnol regarded the plea bargains as the prime "driver" deployed to move the inquiries forward (*O Globo*, 2015a).

on contracts between Petrobras and large construction companies and former presidents Lula and Dilma were directly implicated.

The operation continued with new phases of judicial investigations by the MPF and Federal Police for fraud in tenders between Petrobras or other State enterprises and Brazil's major construction companies, in exchange for commissions and election campaign funding. Those investigations implicated not only major leading businesses, including Odebrecht, Camargo Corrêa, Andrade Gutierrez, OAS and Queiroz Galvão, but also political actors from Brazil's main political parties, including the Party of the Brazilian Democratic Movement (*Partido do Movimento Democrático Brasileiro*, PMDB), the Party of Brazilian Social Democracy (*Partido da Socialdemocracia Brasileira*, PSDB), the Progressive Party (*Partido Progressista*, PP) and, of course, the PT (Campos, 2019).

Carwash severely disrupted the oil, gas and civil construction production chain, blocking what had been an important vector of investments and job creation during the PT governments. Given the components of the context described above, the operation completed the "perfect storm" affecting Petrobras by imputing to it a *reputational crisis* that led to *adjustments in corporate governance and less margin for manoeuvre for new projects*, because its main suppliers were also in crisis and facing problems with the law (Pinto, 2020a). Accordingly, *Carwash joined the overall crisis facing Brazil, to weaken not just the country's largest State enterprise, but the whole production chain connected with it* (Campos, 2019).

Carwash was one final nail in the coffin of the virtuous trajectory enjoyed hitherto by Petrobras and the related production chain. The operation's seventh stage, codenamed Operation "Final Judgement" and carried out by the Federal Police on 14 November 2014, made it irreversible. That stage saw the arrests of 27 senior executives of the construction companies Camargo Corrêa, Engevix, Galvão Engenharia, IESA, Mendes Júnior, OAS, Queiroz Galvão and UTC (*O Globo*, 2015b). Those businessmen's arrests and the threat of their turning State's witness, implicating congressmen, senators and ministers, led to a major political standstill, a complete sweep of contracts between State enterprises and large corporations and, subsequently, to decision-making paralysis of colossal proportions (Campos, 2019).

Some of the operation's immediate economic impacts and consequences will now be examined through an analysis of indicators relating to the large construction companies, Petrobras and the labour market as a whole, including its effects on subnational regions and local production clusters (LPCs).

First, the large engineering firms: from 2014 to 2019 Odebrecht's gross revenue fell from R$ 107 billion to R$ 78 billion, its payroll dwindled from 168,000 to 35,000 and it ceased operations in 13 countries (from 27 to 14) (Odebrecht, 2015; 2020)[12]. Queiroz Galvão, meanwhile, saw its accumulated financial assets fall from R$ 15.3 billion in 2014 to R$ 2.9 billion in 2018[13]. OAS, in turn, saw its total financial assets decline from R$ 1.69 billion in 2014 to R$ 368 million in 2019 (OAS, 2020). Amid difficulties in meeting the requirements of the court-supervised recovery agreement, OAS had also embarked on a process of intensive borrowing since the operation began, which placed its very future at risk *(Folha de São Paulo*, 2019). Lastly, the financial assets of Camargo Corrêa and Andrade Gutierrez also dwindled between 2014 and 2018: from R$ 3.31 to R$ 2.27 and R$ 5.3 billion to R$ 1.91 billion, respectively (Camargo Corrêa Infraestrutura S.A., 2015; 2019)[14].

Valor Econômico newspaper (2019) reported that, between 2015 and 2018, Brazil's largest construction firms – and thus major users of labour and responsible for projects pivotal to overcoming development bottlenecks – saw their net revenues shrink by 85%. In the engineering and construction industry, total revenues had stood at R$ 140 billion in 2013, but by 2016 had fallen substantially, by 62.15%, to approximately their 2006 level of a mere R$ 53 billion (*O Empreiteiro*, as in Campos, 2019).

[12] That is, in the Odebrecht corporation alone, the crisis caused by the operation led to the loss of 133,000 jobs in 5 years.

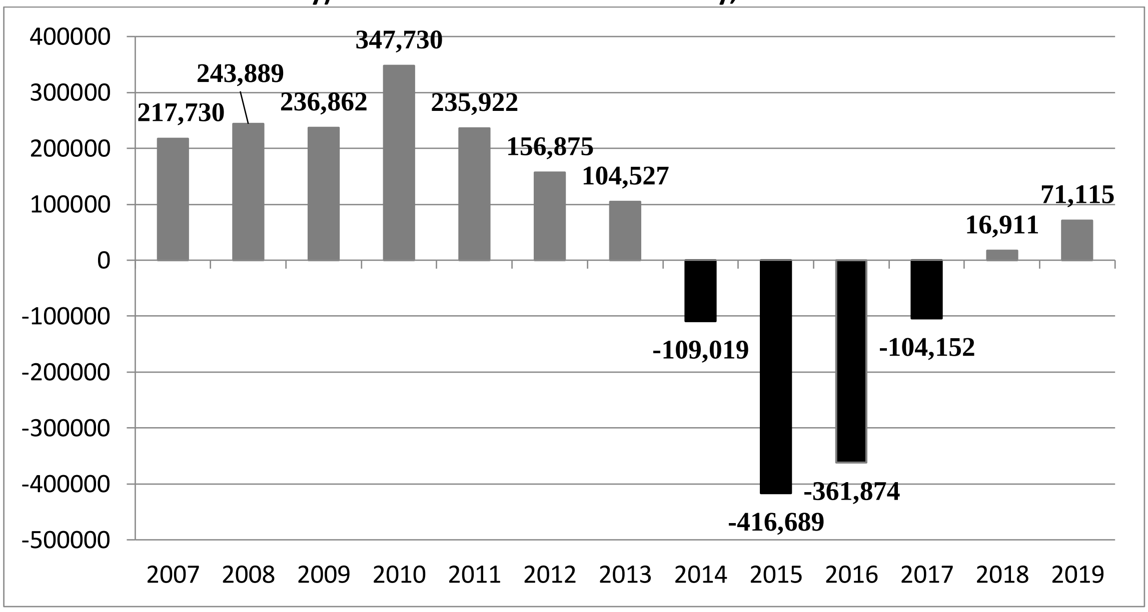
[13] Queiroz Galvão's annual reports can be consulted at https://construtoraqueirozgalvao.com.br/sutentabilidade/relatorios-anuais/.

[14] Andrade Gutierrez's financial statements corroborating those indicators for the company can be found at https://andradegutierrez.com.br/CentralBalancos.aspx.

In addition to this, the companies also found themselves financially weakened not only by the cancellations of numerous ongoing or forthcoming projects, but also by the fines they had to pay when the bribery network was revealed at home and abroad. In 2017, Odebrecht alone, for example, was sentenced by a United States court on the basis of the Foreign Corrupt Practices Act to pay US$ 2.6 billion on bribery and corruption charges (DW, 2017).

It can thus be seen that the large construction companies were severely prejudiced by the crisis brought on in the industry by Operation Carwash, and were the most visible face of the massive destruction of employment positions in construction, as can be seen in Figure 1.

Figure 1. Annual balance between hiring and dismissals of workers (formal employment only) in the civil construction industry, 2007-2019



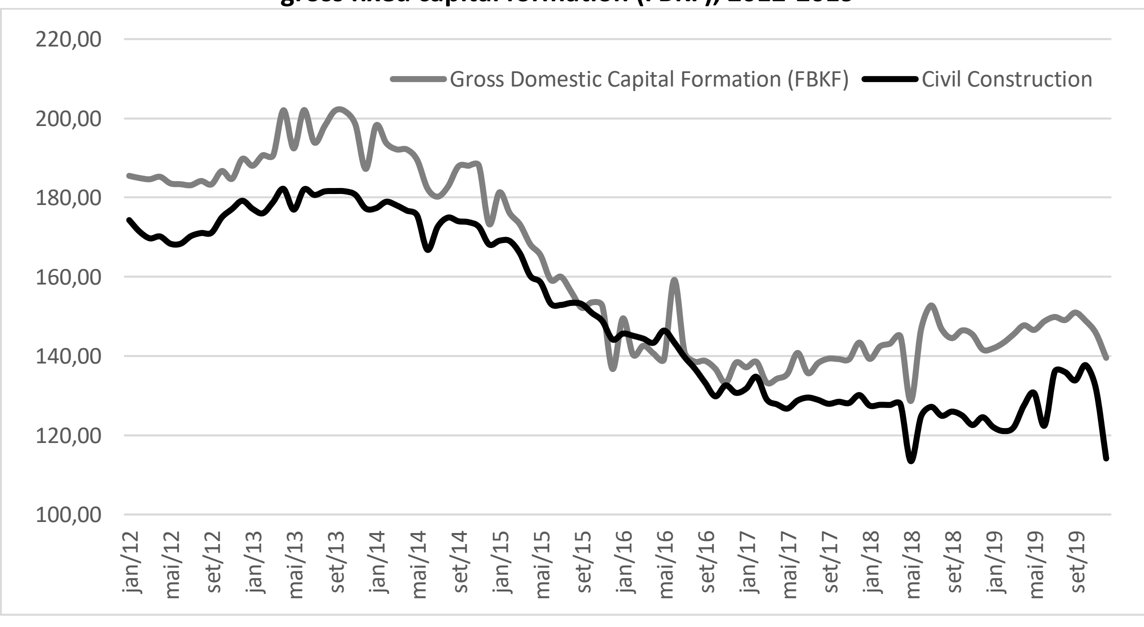
Source: CAGED.

The numbers are significant, and even more so in that they relate to a single industry *and take no account of other adverse externalities of the crisis*. Between January 2014 and January 2017 alone, the North region showed a negative balance of 117,616 jobs in civil construction (11.54% of the total); the Northeast region lost 260,181 jobs (25.53%); the South, 59,225 (5.81%); the Mid-west, 95,388 (9.36%); and the Southeast, the worst affected of all, 486,355 jobs (47.73%). All this in just civil construction. In Brazil overall, at the height of that period (January 2014 to January 2017), the average monthly job creation rate was -23,956: i.e., it was as if that industry were losing nearly 24,000 jobs per month uninterruptedly over three years (CAGED *as in* CBIC, 2021).

While there were 7.845 million workers in the civil construction industry in 2013, by 2019 that figure had fallen to 6.701 million, a 14.6% contraction in payroll. To begin with, the sector was one of the strongest anchors holding back unemployment. Considering the negative balances in formal employment in Brazil as a whole and in all activities, and then specifically in civil construction, the latter accounted for a significant share: 27.1% in 2015 and 27.3% in 2016 (CAGED *as in* CBIC, 2021).

There was also a strong correlation between the performance of civil construction and gross fixed capital formation in Brazil, especially during the period of acute economic slowdown in 2015 and 2016 (Figure 2). Although, of course, correlation does not necessarily mean causality, it is reasonable to say that the weakening of the civil construction industry, which was strongly impacted by Operation Carwash, contributed considerably to that outcome and to the economic recession of 2015-2016.

Figure 2. Seasonally adjusted monthly growth indices for the civil construction industry and gross fixed capital formation (FBKF), 2012-2019



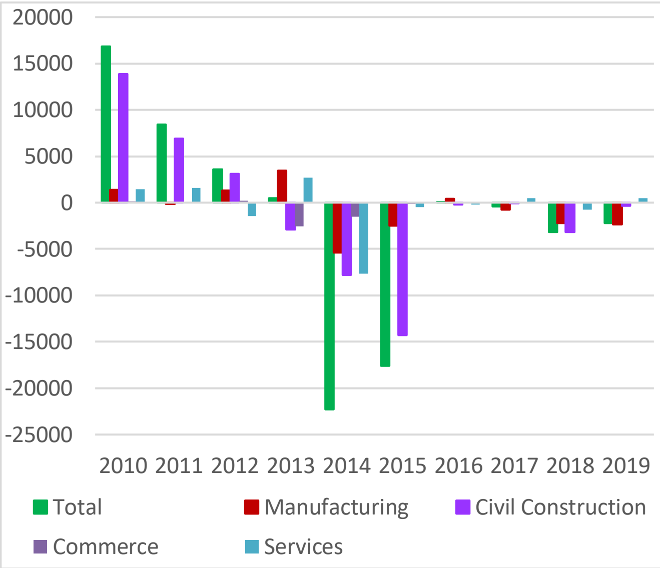
Source: IPEA, *Ipeadata*.

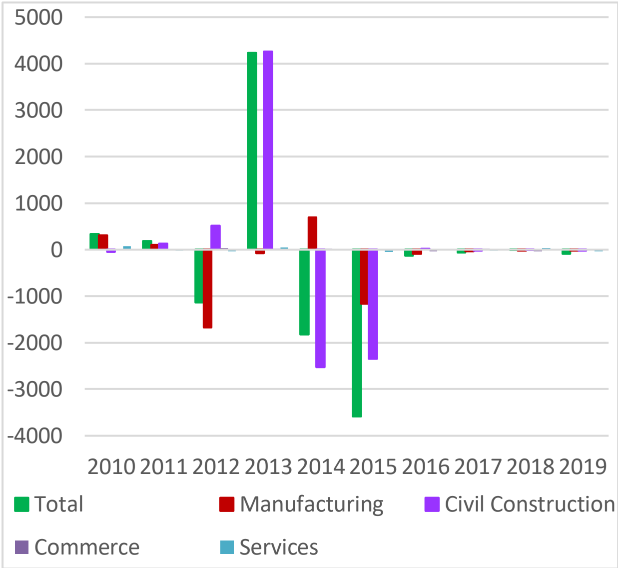
The production chains envisaged by the PROMINP LPCs and the joint projects between Petrobras and local region suppliers suffered the effects of the decision-making paralysis in Petrobras and in the construction companies, which – coming at the same time as contracts were being cancelled and Petrobras's financial situation was worsening – brought an end to the great majority of the development projects in those industrial clusters.

In fact, despite its great potential to mobilise the goods and service industry in Brazil with a view to boosting demand for infrastructures such as construction and naval engineering, the new round of the PROMINP stalled in 2014, following the developments from Operation Carwash and the worsening financial crisis in Petrobras. As can be seen from Figures 3, 4 and 5, in the five locations mentioned in Section 2 (chosen for the development of territorial clusters), the balance between hiring and layoffs worsened abruptly, particularly from 2014 to 2016, pointing to the magnitude of the recession and destruction of productive fabric those localities were undergoing. Except for the municipality of Rio Grande, all those localities, to a greater or lesser extent, suffered the impact of the civil construction industry's contraction.

As a result, all the high expectations for achieving public-private synergies via LPCs, driven at their epicentre by Petrobras and the Brazilian State itself, were obliterated by the massive shock to the production chain delivered by Operation Carwash. In the municipalities examined above, which were the precursor territories for those clusters (Rossi *et al.*, 2015), shrinkage in the processing industry and in civil construction was so great that, in 2015 and 2016, it represented almost all the jobs lost in formal employment in all those clusters.

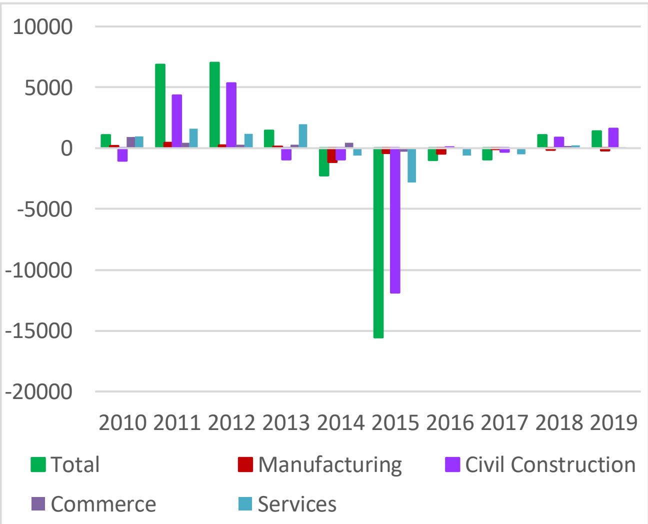
Figure 3. Annual balance between hiring and layoffs of workers (formal employment only) in the Municipality of Ipojuca, Pernambuco (left) and Maragogipe, Bahia (right), 2010-2019

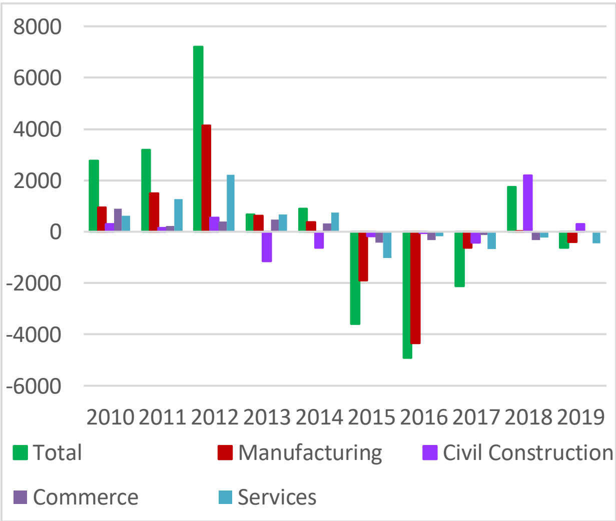




Source: the authors from MTE, 2021.

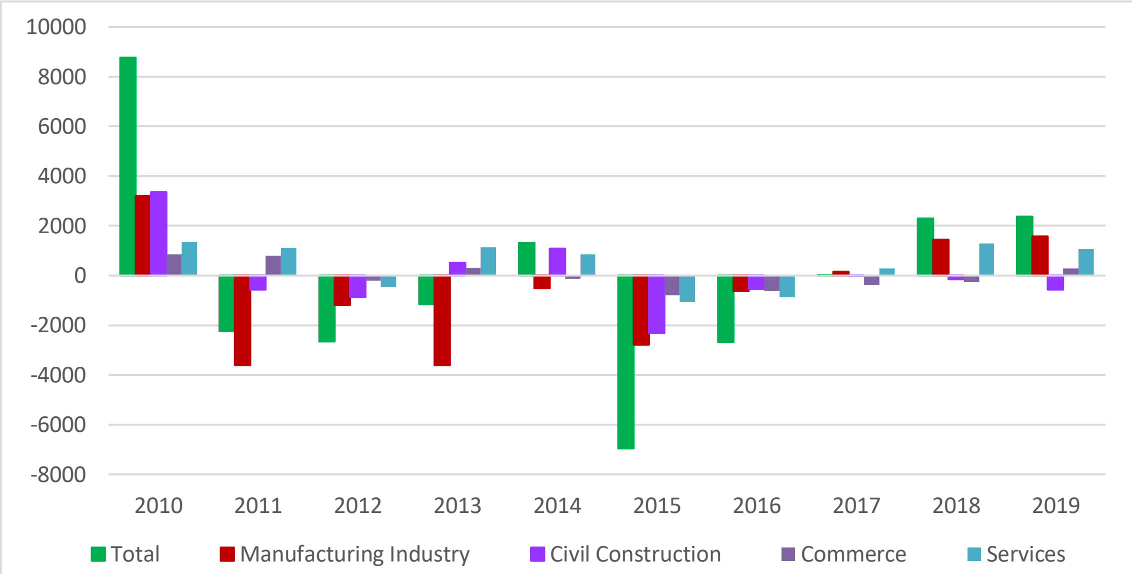
Figure 4. Annual balance between hiring and layoffs of workers (formal employment only) in the Municipality of Itaboraí (COMPERJ), Rio de Janeiro (left) and the Municipality of Rio Grande, Rio Grande (right), 2010-2019





Source: the authors from MTE, 2021.

Figure 5 – Annual balance between hiring and layoffs of workers (formal employment only) in the Municipality of Ipatinga, Minas Gerais, 2010-2019



Source: the authors from MTE, 2021.

4 Reorientation of Petrobras's corporate strategy post-impeachment

Section 3 discussed how Operation Carwash severely impacted the heavy construction industry, through its largest companies, and also harmed Petrobras itself, through the scrutiny of its contracts and a reputational crisis, precisely as its financial situation entered a turbulent cycle of expenditures on new refineries and exploration, price constraints and falling oil prices in 2014. This section will examine how that delicate financial situation, accentuated as consequence of the operation, ultimately provided the narrative for the new governments of neoliberal orientation, beginning with Temer's, to set the State enterprise on a drastically different strategic course.

In May 2016, after the impeachment that resulted in Dilma's removal, the then vice-president, Michel Temer, came to power with a new coalition and a radical reorientation of numerous of the PT government's characteristic policies. That coalition – which included former opposition parties, such as the PSDB, recently defeated in the 2014 elections – adopted a more orthodox, liberal approach to the economy. This was clear from its strong commitment to fiscal adjustment and measures to dismantle State capabilities and the fabric of social protection, such as the draft constitutional amendment to restrict public spending (PEC 241⁄55) and the labour and social security reforms, the latter finally sanctioned in 2019, under the Bolsonaro government (Santos & Moura, 2019).

The Temer government completely abandoned the previous conception of Petrobras as a means to leverage and drive industrial policy and national development through the oil, gas and infrastructure chain. Instead, it focussed on the entrepreneurial dimension rather than its social aspect and prioritised financial deleveraging over productive goals, in addition to bringing about important changes in the industry's regulatory framework in favour of foreign firms. The result was the definitive epilogue to the energy nationalism of the PT governments (Costa, 2019).

In line with financial deleveraging, the dismantling of the industrial chain with Petrobras at its centre also involved modifications to the local content policies, which drastically reduced the requirement for domestic suppliers and threatened earlier gains by the industry as regards standards of excellence in technological development (Azevedo, 2019). Specifically in the pre-salt production blocks, for instance, between 2013 and 2018, average local content fell from 37% to 27% in exploration and from 55% to 35% in development (Pinto, 2020a).

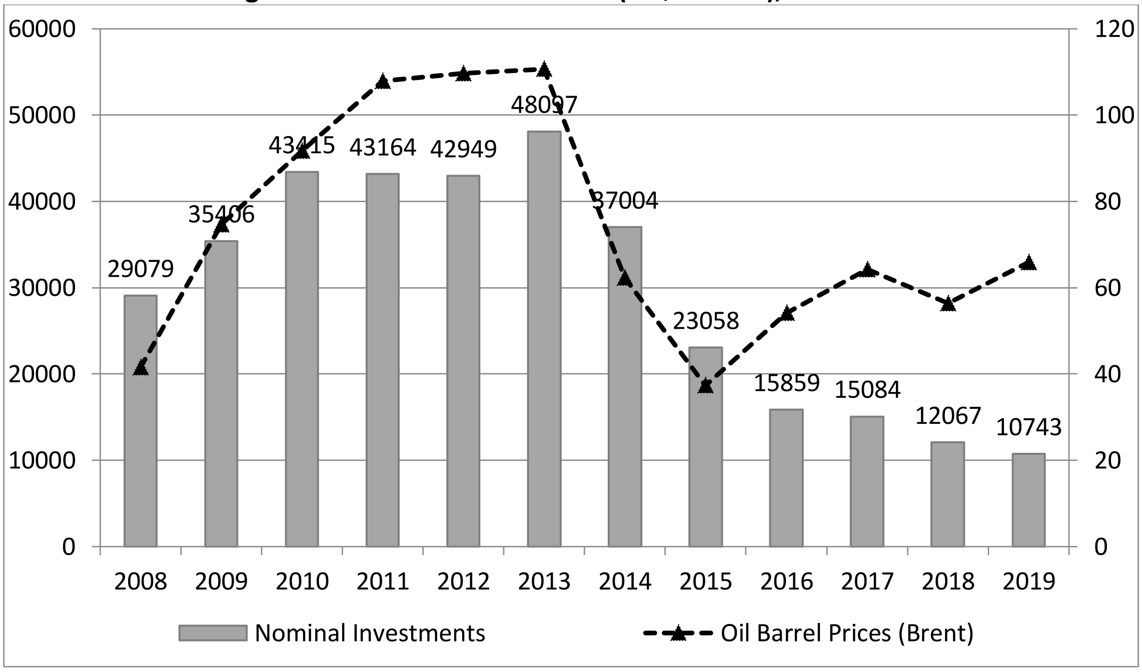
Under Pedro Parente, who took office as CEO of the State enterprise in late May 2016, the new management signed a priority commitment to reduce Petrobras's debt under the 2017-2021 Strategic Plan and Business and Management Plan, which was to be achieved by deleveraging investments of the order of US$ 21 billion[15]. Petrobras also aimed to achieve greater profitability by repositioning itself on the oil and gas market, focussing more on production and exploration and abdicating from the "costs" arising from refinery

[15] That Petrobras strategic plan can be consulted at https://pt.slideshare.net/petrobrasri/plano-estratgico-e-plano-de-negcios-e-gesto-20172021.

capacity (i.e., in the midstream and downstream portions of the energy chain), and related distribution and transport networks (Costa, 2019; Leão & Pinto, 2019)[16].

On 29 November 2016, a new regulatory framework was introduced by Law No. 13.365, depriving Petrobras of the status of sole operator of the pre-salt reserves and clearing the way for foreign firms. Although oil prices recovered slightly after 2015, the company's investments continued to decline steadily, as in Figure 6.

Figure 6. Petrobras investments (US$ million), 2008-2019



Source: the authors, based on PETROBRAS; INDEX MUNDI.

Pinto & Dweck (2019) note that, between 2016 and 2017 alone, investments were reduced by R$ 23 billion in production and R$ 4 billion in refining, at the same time as 605,000 and 104,000 jobs were destroyed in those two segments, respectively. The corruption cases served as rhetoric for the withdrawal of Petrobras's status as sole operator of the pre-salt fields and for Petrobras itself to be dismantled by privatising its subsidiary

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[16] Despite this claim to focus on production and exploration, Petrobras nonetheless shed its participations in the Pampo and Enchova clusters, in the Campos Basin; in the Lagoa Parda cluster, in the Espírito Santo Basini; and in the Ponta do Mel and Redonda fields in the Potiguar Basin (Azevedo, 2021).

Liquigás to the Ultra Group, and its refineries and gas pipeline networks to the Canadian group, Brookfield, and to the French group, Engie (*O Globo*, 2019).

That denationalisation was not restricted to Petrobras alone: amid the financial crisis precipitated by Operation Carwash, Odebrecht also had to divest itself of its petrochemical subsidiary, Braskem (where it held a 38.3% share), responsible for 78% of the Odebrecht group's net revenue in 2018 and Camargo Corrêa sold off its subsidiary CPFL Energia to the Chinese State Grid (Campos, 2019). Given all this, it was no coincidence that foreign oil companies made considerable inroads into the oil and gas industry in Brazil as a consequence of those regulatory changes and the new strategic guidelines proposed for Petrobras by the federal government.

At the heart of Petrobras's new strategy under Parente, its new policy of pricing in parity with the international market, although benefiting and pleasing to minority shareholders with prospects of short-term returns on the financial market, had (among other things) the adverse consequence of higher social costs from more frequent fuel and bottled gas price increases (Campos, 2019; Nozaki & Leão, 2019).

As regards the disinvestment programme and prioritisation of exploration and production to the detriment of refinery capacity, that change rapidly accentuated the deverticalisation of Petrobras's corporate structure, as well as its external vulnerability. The company began to export more crude oil onto the international market to be refined abroad and reimported as processed fuel. This left both Petrobras and Brazil more exposed to exogenous variables, including the exchange rate and external demand, which could lead to risks of further disruption (Pinto, 2020a). While, in 2013, Petrobras supplied 90% of the domestic market, by 2018 that figure had fallen to 76%, as fuel imports expanded and domestic production declined (Campos, 2019).

The sale and dismantling of refinery capacity rested on the neoliberal rhetoric that privatisations, by fostering a fuel market more open to competition from other players, would supposedly lead to lower petroleum product prices. However, many of the refineries and related logistics infrastructures were installed at strategic sites so as to minimise investment costs and maximise economies of scale. In that regard, as shown by Pinto (2020b), those refineries were also natural regional monopolies and, even after privatisation, will continue to practice monopoly pricing, which will increase costs to end-consumers. That is to say, as the refineries will be sold off together with the terminals and pipelines they are connected to, competition will be impossible in their geographical areas of influence. Accordingly, the government is not only privatising the refinery units, but handing over the regional markets along with them (Leão e Pinto, 2019; Abadie, 2020).

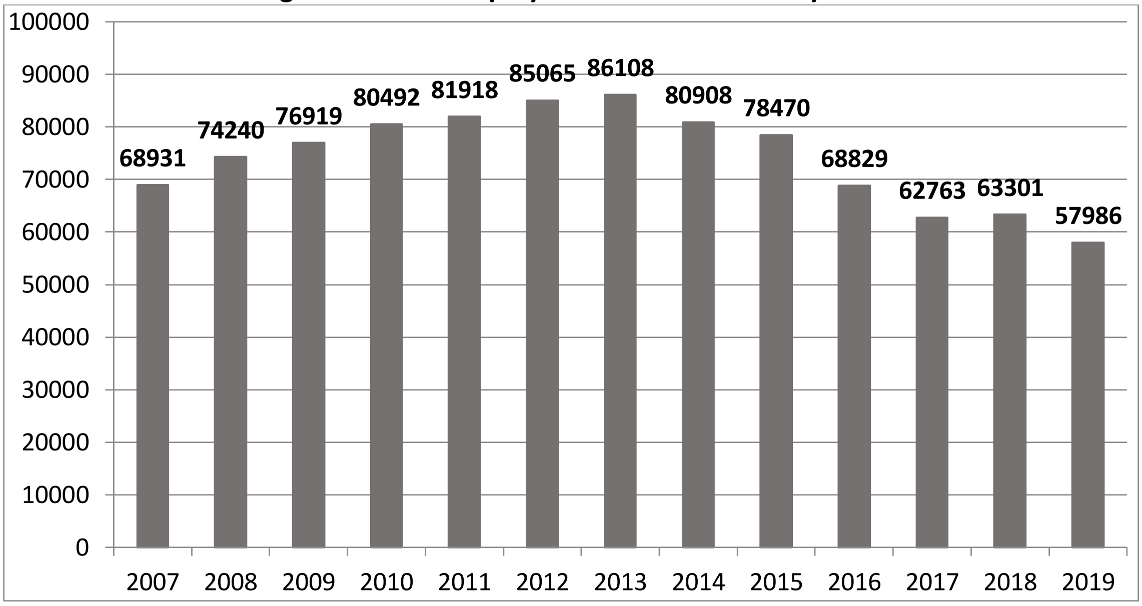
The reduction in local content requirements was yet another milepost signalling that the government was definitively abandoning Petrobras's role as a driver of production chain formation and an import substitution policy tool that radiated gains and economies of scale by investments, particularly in the naval, heavy engineering and civil construction industries (Nozaki & Leão, 2019).

From July 2017 onwards, domestic pricing policy would obey a logic of increasingly frequent, automatic adjustments, following exogenous oscillations. The ever shorter gaps between increases led (as a result of transport costs) to a drastically more expensive national price structure, which triggered strikes both by oil workers, against the price policy and scrapping of Petrobras and, in late May 2018, by truck drivers, protesting against fuel prices. This culminated in Parente's leaving Petrobras, to be replaced by Ivan Monteiro (*O Globo*, 2018a; *O Globo*, 2018b). Monteiro, who took over in June 2018, stayed on until the end of the Temer government. Although he reviewed Parente's pricing policy, he continued to abandon refinery capacity even more abruptly and aggressively than ever (Costa, 2019).

The administration of Roberto Castello Branco, beginning in January 2019, marked a return to the policy of price alignment with the international market, cost cutting, asset sales, a focus on the pre-salt reserves and increasing dividend payouts to shareholders (*Valor Econômico*, 2021).

The Bolsonaro government, therefore, brought no change in the overall process of dismantling Petrobras. In just the first year (2019), his government divested R$ 70.3 billion in assets by privatising the subsidiaries BR Distribuidora, TAG Liquigás and others, as well as nearly 50% of the company's refinery capacity and its production facilities (Abadie, 2020)[17]. In terms of the company itself, the dismantling and reduction in its nodal role in Brazil's development can also be seen in the huge staff reductions shown in Figure 7. This shows that, from 2013 to 2019, the total number of workers directly employed in the Petrobras system decreased by 32.7%, as a consequence of the dismantling, disinvestments and government voluntary redundancy policies, which caused employees with considerable accumulated knowledge, expertise and know-how to leave the company.

Figure 7. Direct employees of the Petrobras System



Source: PETROBRAS.

[17] The refineries undergoing privatisation are Abreu e Lima (RNEST), Landulpho Alves (RLAM), Presidente Getúlio Vargas (REPAR), Alberto Pasqualini (REFAP), Gabriel Passos (REGAP), Isaac Sabbá (REMAN), Lubrificantes e Derivados do Northeast (LUBNOR) and the Unidade de Industrialização do Xisto or SIX (PINTO, 2020a). Six of these, REFAP, REPAR, REGAP, RLAM and RNEST, are medium-large or large facilities (Abadie, 2020).

5 Conclusion

This article has examined how the political and economic crisis that engulfed Brazil from 2014 onwards, one of the prime determinants of which was Operation Carwash, impacted the oil, natural gas and civil construction production chain, including its geographically local effects. In particular, it highlighted two interrelated processes with strong effects on the oil, petroleum products and civil construction industries: Operation Carwash, which caused Petrobras to suffer a severe reputational crisis, and the reorientation the State enterprise's corporate strategy beginning in May 2016, which was redirected to short-term shareholder remuneration. That drastic strategy shift in areas including production, refineries and natural gas caused strong impacts on regional economies and on the multiple chains formed with local firms and producers, as shown above.

The article has tried to show that the effects of Operation Carwash ran deep, in both the oil and civil construction sectors and produced wide-ranging adverse effects on Brazil's productive structure. In particular, it pointed out how, beginning with the Temer government and continuing under the Bolsonaro government, Petrobras adopted a new corporate orientation, acting more to yield dividends to private shareholders than to further the technological sophistication and density of Brazil's productive fabric with a view to energy sovereignty.

Also, against the backdrop of the sale of half its refinery capacity, its exiting certain exploration niches of the pre-salt fields and a scenario of devastated Brazilian infrastructure firms, Petrobras went on to operate primarily in the Southeast region and lost much of its local region and national integration in Brazil.

In that context, it will be no easy task to reverse the present state of affairs; under a government with a new political and strategic orientation. Accordingly, both Petrobras and Brazil's domestic construction and engineering firms have a long way to go to recuperate their operating capacity and restore a strategy directed to national development. That will require a change from the neoliberal strategy currently in place in Brazil.

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