

REVITALIZING INDUSTRIAL POLICY: THE 'NEW INDUSTRY BRAZIL' STRATEGY AND IMPLEMENTATION CHALLENGES

6.1 Políticas Industriais e Comerciais

JEL: O25

Jackson De Toni, Alexandre Gomide, and Luís Felipe Giesteira¹

¹ JDT is Analyst of Innovation and Productivity at Brazilian Agency of Industrial Development (ABDI, in portuguese); AAG is a tenured researcher at Institute for Applied Economic Research (IPEA, in portuguese) and currently director of advanced studies at National School of Public Administration (ENAP, in portuguese); LFG is a Specialist in Public Policy and Public Management, a career of Brazilian Federal Government, currently working as director of technologically complex industries at Ministry of Development, Industry, Trade and Services (MDIC, in portuguese).

Abstract

This article examines the challenges and opportunities associated with revitalizing Brazil's industrial policy within the country's new mission-oriented approach framework. As Brazil embarks on a path of "neoliberalization," this study explores how the government aims to reindustrialize through innovation, technological advancement, and ecological transformation. The paper critically analyzes the institutional and organizational barriers that impede effective policy implementation, including the fragmented political landscape, weakened state capacities, and the complex coordination required among various government bodies. Drawing on theoretical insights and historical context, the article argues that while Brazil's new industrial policy holds promise, its success depends on overcoming significant governance challenges and aligning macroeconomic policies with industrial objectives. The study concludes with policy recommendations designed to enhance state capacity and ensure the effective implementation of Brazil's industrial strategies in an increasingly uncertain global environment.

Key-words: Industrial Policy; State Capacity; Neo-industrialization; Mission-Oriented Policy; Governance; Brazilian Economy

Introduction

Brazil has a longstanding history of industrial policy (IP) dating back to the early 19th century, beginning with the "Industrial Privileges" system, a precursor to modern patent mechanisms. Although comprehensive data from before the 1920s is scarce, the consensus is that the country made limited progress in industrialization during this period. However, after the 1930s, Brazil experienced profound political and institutional transformations that catalyzed substantial economic growth, particularly during import substitution industrialization (ISI) between 1955 and 1985. Initially, Brazil's industrialization was driven by a series of isolated and uncoordinated initiatives, but over time, state-led efforts became more deliberate and systematic, incorporating extensive planning frameworks.

While unable to deliver widespread social benefits, this state-directed industrialization process propelled Brazil to the forefront of global economic growth. During this period, Brazil consistently ranked among the top five fastest-growing economies, largely due to its manufacturing sector's expansion whose composition also progressively became more based on medium-high technologically intensive industries such as chemical, machinery and transport equipment (Baer, 2001; Suzigan & Villela, 2009).

Between 1990 and 2003, it took a different path, embracing economic liberalization and deregulation and focusing on macroeconomic stability. While industrial policies were not completely abandoned, they became much less ambitious and more localized, focusing

on small businesses and sectors where the country had a comparative advantage, such as agriculture and livestock.

Brazil revived its industrial policy in the early 2000s with the rise of center-left governments. The first major initiative was the "Industrial, Technological, and Foreign Trade Policy" (PITCE) in 2004, which aimed to promote innovation, enhance technological capabilities, and integrate Brazilian industries into global value chains. In 2008, the "Productive Development Policy" (PDP) built on PITCE by expanding its focus and emphasizing better governance and institutional support. The "Plano Brasil Maior" (PBM), introduced during Dilma Rousseff's administration, further sought to expand Brazil's industrial base through targeted investment and innovation support.

These policies showed some positive indicators. Between 2003 and 2015, spending on education, incentives for R&D, and direct spending on science and technology, along with BNDES (National Economic and Social Development Bank) disbursements, grew significantly in real terms, by 158%, 172%, 118%, and 105%, respectively. New legal frameworks, like the Innovation Law (2004) and the "Law of Good" (2006), aimed to integrate education, research, and production systems more effectively.

However, the practical outcomes were less impressive. Technological progress, such as patent filings, lagged despite advancements in science and education indicators. Successes in competitiveness and innovation were limited to niche areas like biotechnology, business software, and military aircraft. Overall productivity, which initially responded well to the new policies, stagnated after 2011. Paradoxically, despite active industrial policies, the manufacturing sector's share in GDP and exports declined, especially post-2011. Some scholars argue that Brazil's post-1990 experience represents a case of premature deindustrialization, a trend that persisted despite significant policy efforts between 2004 and 2014 (Palma, 2018; Oreiro, 2021).

Following the return of the center-left to the Presidency in 2022, the "New Industrial Brazil" program (NIB), conceptualized in 2023, was officially announced by President Lula in January 2024. Although recent Brazilian IPs have not been attained as successful cases, the initiative benefited from the global trend of reviving industrial policies in response to significant international events such as the COVID-19 pandemic and recent geopolitical tensions. These events have reshaped industrial policy frameworks worldwide, leading to a renewed emphasis on state activism to develop resilient and innovative industrial sectors.

This new mood reached Brazil in a peculiar way, enveloped in the concept of "neo-industrialization," which meant either resuming manufacturing growth as a priority and directing it to societal and environmental challenges. Soon, this strategy was linked to the MOIP model. While it contributed to giving neo-industrialization either theoretical

foundations or broader political legitimacy, it spotlighted the necessity of coordinated efforts across multiple sectors and stakeholders (Mazzucato, 2018).

Aiming the more general debate on the necessary conditions for the effective implementation of the policy required by the mission-oriented design, this article explores the revitalization of Brazil's industrial policy through this mission-oriented approach, emphasizing the need for enhanced state capacity and effective governance structures to manage the complexities of this transformation.

The main research question is how Brazil's fragmented institutional and political landscape, coupled with weak state capacities, impacts the implementation of the NIB program. The article argues that while the mission-oriented approach has significant potential to drive Brazil's industrial and economic transformation, its success hinges on addressing deep-rooted institutional challenges, fostering political consensus, and ensuring robust coordination between macroeconomic and industrial policies. In particular, it will address the demands for new mechanisms and arrangements for intra-governmental coordination and relationships with the private sector, the necessary enforcement instruments in a democratic environment, the need to build broad and persistent support political coalitions, and the new monitoring and evaluation tools needed to achieve the established missions.

To do that, a mixed-methods approach is adopted, combining qualitative analysis of policy documents with a historical-institutional perspective. It draws on primary sources, such as government reports, speeches, and strategic plans, as well as secondary sources, including academic literature and expert commentary.

The article is organized into three main sections, followed by a conclusion and recommendations. Section one reviews the theoretical foundations of industrial policy, examining its evolution and addressing both traditional criticisms and recent support for state-led strategies. Section two analyzes the NIB program, detailing its goals and institutional frameworks and assessing its design to address economic and institutional challenges. Section three explores the challenges of implementing the NIB, focusing on governance, inter-agency coordination, and alignment with macroeconomic policies while discussing the political and institutional obstacles that may hinder its success. The conclusion reflects on the broader implications for Brazil's economic future, emphasizing the need for strong governance and strategic alignment to realize the NIB's transformative potential.

1. The Evolution and Challenges of Industrial Policy in a New Global Landscape

Even though capitalist countries have been practicing industrial policies for a long time – maybe as long as capitalism itself – the strictly academic theorization in it is far more

recent. Furthermore, during the 30 years dominant neoliberal consensus the subject turned into a niche one – almost a “policy that shall not be named”. But in the last 15 years or so, a renewed expressive literature on IP has come to life. Among their more remarkable features are the use of advanced econometric methods and the struggle to integrate typically Political Science debates and Economic Policy Analysis. Part of it is worth considering to this text objectives.

In a straight definition, IPs are government initiatives explicitly aimed at transforming the structure of economic activities to achieve specific public goals, such as fostering innovation, productivity, economic growth, climate transition, job creation, regional development, exports, or import substitution (Juhász et al., 2023). In developing countries, they are often termed productive development or structural transformation policies to address a broader range of developmental challenges beyond mere industrialization.

Nevertheless, IP has evolved in response to the new economy's demands, addressing challenges such as digitalization, the green transition, the middle-class squeeze, and geopolitical imperatives. While manufacturing remains central to government initiatives, its objectives have expanded to include promoting advanced sectors, creating local supply chains, and addressing the “good jobs” challenge. According to Rodrik (2008), IP can help mitigate populism by creating “good jobs” in regions facing economic decline.

Objections to IP revolve around information shortcomings and political capture. The former suggests that governments may lack the necessary information to make correct decisions based on market failures; the latter warns of the potential for industrial policy to be influenced by self-interested lobbying. Nevertheless, recent literature has provided rigorous evidence of the effectiveness of industrial policies, offering a more positive outlook on their impact (citation). New empirical techniques using contemporary econometric methods have expanded the understanding of industrial policy effects. These studies show that industrial policies can effectively stimulate activities when tailored to specific production or investment incentives and institutional contexts. Historical evidence from successful industrial policy experiences in countries like South Korea, Taiwan, and Singapore demonstrates the positive impact of targeted interventions in fostering industrialization and economic growth.

Rodrik (2022) contends that IP, akin to other policy domains like education, health, social insurance, infrastructure, and stabilization, is theoretically sound but needs clear empirical evidence of its effectiveness. These areas grapple with market failures, stakeholder pressures, and information asymmetries, making it challenging to pinpoint successful interventions. As a result, debates often revolve around identifying the most efficient approaches rather than questioning the necessity of government intervention.

Extensive research underscores the importance of determining effective strategies tailored to specific contexts. Thus, the discourse should shift from debating whether governments should engage in industrial policy to exploring how best to implement it for optimal outcomes.

Some authors argue that IP has a compelling economic rationale (Rodrik and Hausmann, 2003). It involves addressing market failures that hinder optimal resource allocation and economic growth. These failures include information asymmetries, externalities, imperfect competition, and coordination problems. IP seeks to overcome these market imperfections by intervening strategically and promoting efficient outcomes. Additionally, it is seen as a tool for fostering industrialization, technological progress, innovation, and structural transformation.

Therefore, industrial policy is now part of a broader economic strategy addressing societal and environmental challenges (Aiginger & Rodrik, 2020). Modern industrial policy must adapt beyond manufacturing to foster cross-sector collaboration and align with broader policy objectives. The challenge lies in crafting forward-looking policies that address market failures and shape new markets to tackle pressing social and environmental issues, focusing on goals like climate action, health, poverty-fighting, job creation, and reducing social inequality (Mazzucato, 2018). In other words, IP is no longer viewed in isolation but as part of a broader economic strategy that addresses societal challenges.

Traditional industrial policies have been structured around two main components: horizontal and vertical policies (Mazzucato & Kattel, 2018). Horizontal policies target broad aspects applicable across various industries, such as skills development, infrastructure improvement, and education enhancement, aiming to create an environment conducive to economic growth. Vertical policies, in contrast, are sector-specific, targeting particular industries like transportation, healthcare, energy, or specific technologies to support their growth and competitiveness through targeted interventions and incentives.

The shift towards addressing grand challenges requires reevaluating these traditional frameworks. Cross-sectoral and holistic approaches are increasingly recognized as essential, making the conventional distinction between horizontal and vertical policies less effective. Policymakers are moving away from siloed sectoral approaches towards more integrated and collaborative strategies to address multifaceted societal challenges.

Mission-oriented policies (MOPs) represent an innovative approach to industrial policy. This approach sets specific societal or economic goals, or "missions," and mobilizes resources toward achieving these objectives. Unlike traditional policies focusing on sector-specific or general economic development, MOPs address particular challenges and opportunities with clear, ambitious directions. They create public value by addressing

societal needs and promoting innovation through collaboration among government agencies, research institutions, businesses, and civil society. These policies typically have a long-term vision and emphasize the state's role in creating markets and shaping economic activities toward specific goals. By steering innovation and investment towards mission-related objectives, MOPs can catalyze new industries, technologies, and business models, contributing to societal well-being and sustainable development.

Success in IP initiatives hinge on overcoming significant challenges in implementation, coordination, and governance (Aiginger & Rodrik, 2020). Implementing them is complex due to practical issues such as government capacity limitations, challenges in policy design, coordination gaps among agencies, and the need for transparency and accountability. Addressing these weaknesses and governance issues is crucial to ensuring the effectiveness of industrial policy interventions.

To achieve success, governments must design effective policies and strengthen institutional capacities. This involves promoting transparency, fostering stakeholder engagement, and establishing robust implementation and monitoring mechanisms. Policymakers face hurdles like bureaucratic inefficiencies, lack of inter-agency coordination, and potential political interference, which can hinder policy effectiveness. By prioritizing effective implementation strategies, policymakers can enhance the impact of industrial policy interventions and achieve desired economic outcomes.

Recognizing and tackling these challenges is essential for improving the effectiveness of IP measures. Governments need well-designed policies, capable institutions, and transparent, accountable implementation processes to maximize policy efficiency and impact. This approach supports economic development and facilitates structural transformation.

Juhász; Lane (2024) states that political constraints significantly influence IP effectiveness. Policymakers must navigate intricate political dynamics, including incentives, power structures, and distributional effects, which profoundly affect policy outcomes. State capacity also plays a critical role in designing, implementing, and monitoring industrial policies; inadequate institutional capacity can significantly undermine policy effectiveness.

According to Andreoni and Chang (2019), the government's role in IP implementation involves crucial conflict management and entrepreneurial leadership functions. Conflict management requires resolving divergent interests among societal groups and within government institutions, aligning policies across diverse ministries and agencies. Simultaneously, entrepreneurial leadership entails articulating a clear economic vision, organizing interests around developmental goals, and guiding economic transitions. Governments can effectively coordinate IPs, mitigate structural tensions, and provide

strategic direction for sustainable economic development by harmonizing conflicting interests and addressing institutional challenges.

In recent years, a paradigm shift in governance has redefined industrial policy, emphasizing collaborative relationships between governments, firms, and society. This kind of "collaborative governance" stresses iterative cooperation and coordination between public authorities and private sector entities (Aiginger & Rodrik, 2020). Central to this concept are three critical attributes that effective industrial policy should embody: embeddedness, incentives and disincentives, and accountability.

Embeddedness entails integrating IP within society to align with stakeholder needs and societal dynamics, ensuring relevance and impact. Incentives and disincentives, often described as "carrots and sticks," aim to shape behavior by rewarding desired outcomes, such as subsidies, while penalizing non-compliance. This aligns business actions with developmental goals. Lastly, accountability ensures transparent and efficient policy implementation, fostering trust and legitimacy by holding policymakers and stakeholders responsible for outcomes.

Juhász and Lane (2024) underscore several factors pivotal to IP effectiveness, including political constraints, policy design, time consistency, stakeholder engagement, and state capacity. State capacity, crucial for implementing and adapting policies effectively, refers to the state's ability to pursue official goals with adequate resources, expertise, and autonomy. Strong state capacity supports policy learning through rigorous evaluation and monitoring, essential for refining strategies and ensuring accountability.

Historically, state capacity has been integral to successful industrial policies, as evidenced by the developmental successes in East Asia contrasted with challenges in regions lacking robust institutional capabilities. Notably, state capacity is not fixed but evolves through deliberate investments and political decisions (Juhász et al., 2023). South Korea's experience highlights the transformative impact of sustained investments in bureaucratic capabilities on state effectiveness.

Two dimensions of state capacity critical to industrial policy emerge bureaucratic capacity for effective policy implementation, embeddedness, and informational capacity for robust engagement with the private sector. Strengthening these capacities is essential for designing and implementing policies that foster sustainable development and economic growth.

Kattel and Mazzucato (2018) further elaborate on policy capacity, integrating static capabilities for stability with dynamic capabilities for innovation. This approach combines Weberian bureaucratic perspectives with Schumpeterian notions of dynamic capabilities, emphasizing agility and resilience in responding to evolving challenges. It advocates for

proactive governance that learns from past experiences, innovates with new solutions, and continually enhances policy effectiveness.

The evolving landscape of industrial policy underscores the importance of collaborative governance, state capacity, and dynamic policy capabilities. By integrating these elements, governments can effectively navigate complexities, drive innovation, and achieve sustainable development goals in a rapidly changing global economy.

From a distinct approach, Kapczynski and Michaels (2024) face an intriguing paradox: although failures of neoliberal economic models have led to increased inequality and weakened industrial bases and prosperity – thus possibly eroding the legitimacy of democracy – there is first sight evidence that high performance IPs are restricted to autocratic, highly centralized regimes.

The authors emphasize that effective industrial policy requires a capable state with the expertise and resources to implement complex economic strategies. In order to do that, building state capacity while maintaining democratic oversight is paramount. The risks of bureaucratic capture and corruption must be counterbalanced with democratic controls, such as legislative oversight and public accountability. Notwithstanding, implementing a democratic industrial policy, particularly in the face of global economic pressures and entrenched interests, is hard.

The authors argue that international cooperation and coordination are necessary to address these challenges, as well as robust domestic institutions that can adapt to changing economic conditions. They also discuss the importance of learning from past mistakes, particularly the pitfalls of overly centralized or undemocratic approaches to industrial policy. Although not an easy task, integrating democratic principles into industrial policy, highlighting the need for a more inclusive and accountable approach to economic governance, is a fundamental challenge of the 21st century, without which climate change, technological disruption, and social inequality cannot be addressed.

2. The Mission-Oriented Brazilian Industrial Policy: Raising, Deployment, and First Implementation Issues

As mentioned above, the resuming of IPs in Brazil between 2004 and 2014, although bringing some localized successes, was not capable of reverting the process of premature deindustrialization that started in the early 1990s. Nevertheless, the victory of the coalition led by Lula in 2022 soon announced that, if rearranged in some features, such as a more precise definition of priorities and a less commitment to less technologically active industries, the new government would insist on this direction. At its very dawn, it became known as the “neo-industrialization” project. A few months later, this expression has become almost synonymous with mission-oriented industrial policy.

Brazil's interest in Mariana Mazzucato's approach is not new at all. Still in 2015 a report, she and Caetano Penna were commissioned to undertake a report on the reform of the Brazilian National System of Innovation (NSI), which proposed a set of missions. This concept resonated with “islands of excellence” within Brazil's public bureaucracy landscape. The ongoing debate on the country's need for reindustrialization, centered on energy transition, digitalization, and innovation, further solidified the perception of the organization of eventual new innovation and industrial policies in missions.

Therefore, although the new administration did not extensively consult civil society, the selected missions reflected a long-standing debate, whose first step was the Mazzucato and Penna report. It was also evident in the government's plan and various civil society proposals, such as the “Industry Resumption Plan” presented by the National Confederation of Industry in September 2022. The final six missions resulted from a progressive debate process initiated in February 2023 and later confirmed by the National Council for Industrial Development (CNDI).

The NIB program, launched in January 2024, is a comprehensive effort to align Brazil's government plans, social expectations, and ministerial priorities under the leadership of Lula. It aims to promote neo-industrialization by making Brazilian industry more innovative, digital, green, productive, and export-oriented. Aligned with the "Novo PAC" (the new growth acceleration plan, focused on infrastructure investments) and the Ecological Transformation Plan, NIB's key goals include enhancing innovation and digitalization to boost competitiveness, reducing carbon emissions to combat climate change while creating better jobs, improving product quality and cost efficiency to restore industrial competitiveness, and strengthening Brazil's position in global markets through high-value exports. The initiative sets specific targets for various strategic areas, such as sustainable agro-industrial chains, resilient health-industrial complexes, sustainable infrastructure, digital transformation of industries, bio-economy, and technologies critical to national sovereignty and defense, with objectives set for 2026 and 2033 across these sectors.

The governance of NIB is centered around the National Council of Industrial Development (CNDI), which comprises 21 representatives from relevant ministries and agencies, along with 21 representatives from civil society, including three from trade unions besides sectoral business associations. Below the CNDI, an executive committee led by the Secretariat of Industrial Development (SDIC) includes only government agencies directly involved in science, technology, and industrial policies. This committee is responsible for drafting legal acts for the CNDI to present or recommend to the President.

The CNDI oversees various working groups that address cross-cutting issues such as regional development and business facilitation. When multilateral dialogues gain

momentum, new working groups with specific tasks may be formed. One crucial working group focuses on investment financing, led by SDIC, BNDES, and FINEP, which sets priorities and creates shared instruments to mitigate Brazil's high interest rates, typically above 6% annually in real terms. This branch of NIB is known as the "Plan More Production" (P+P), led by BNDES.

Monitoring responsibilities fall to the Brazilian Industrial Development Agency (ABDI), a more flexible public-private entity. Additional forums are to be established following identifying priority supply chains, which were selected and detailed through a cooperative task force involving MDIC, BNDES, FINEP, ABDI, CNI, and FIESP². These were then submitted to ministries that lead federal procurement and investment, such as health, defense, agriculture, and energy.

A method combining the economic complexity approach with technological capabilities and input-output matrices was employed to determine the priority supply chains. These include sectors such as drones and sensors, agricultural machinery, semiconductors, industrial robots, biological medicines, vaccines, new energy sources, and advanced defense technologies like launching vehicles and satellites. For each prioritized supply chain, a dedicated working group will address specific challenges, mainly focusing on technological upgrading.

The initial versions of the “Nova Indústria Brasil” (NIB) initiative proposed an extensive set of actions consistent with its ambitious goals. However, the high interest rates and the rapid growth of pensions and other social transfers in recent years make it unlikely that significant financial resources typically associated with transformative missions will be mobilized soon. Even subsidies, like those currently being used for advanced batteries and chips in countries such as Germany, the USA, China, and Korea, appear beyond the reach of the current Brazilian government.

Despite this, estimates suggest that investment in industrial policy (IP) in Brazil could exceed 5% of GDP in five years. To fully understand NIB, it is crucial to distinguish between it as a general plan and the “actually existing industrial policy” (AEIP). AEIP can be divided into two parts. The first represents the inertia within the established framework of sectoral benefits distributed by the Brazilian state, which operates largely independently of the governing coalition. In 2023, according to the Brazilian National Revenue Agency (RFB), total tax expenditures reached R\$ 598 billion, nearly 5.5% of GDP. Although these benefits are often related to IP, they tend to favor agriculture and services over manufacturing, with a net effect likely regressive across sectors.

² Ministry of Development, Industry, Commerce and Services, Financing Agency for Studies and Projects (federal government), Brazilian Agency for Industrial Development, National Confederation of Industry (industrial union) and Federation of Industries of the State of São Paulo (industrial union)

The government also provides other sectoral benefits that are not classified as tax expenditures. For example, the Safra Plan, aimed at agriculture, is expected to channel R\$ 400 billion in financing to the sector in 2024 alone, exceeding the anticipated funding for the entire NIB over four years. A comparison often made is between the budgets of Embrapa, the leading state R&D center dedicated to agribusiness, which stands at approximately R\$ 4.2 billion, and Embrapii³, its industry equivalent, which has a budget of R\$ 677 million.

On the other hand, AEIP includes a range of related measures but has yet to be predefined within the NIB framework. These measures will likely alter the balance of incentives in the existing IP over the coming years, with their full impact possibly becoming apparent only after some time. These measures encompass various programs and actions linked to different missions, including green taxes on manufactured products, incentives for the digitalization of small manufacturing firms, tax exemptions along the semiconductor supply chain, local content requirements for public investments, and tax credits for producing low-carbon hydrogen.

Additionally, the P+P Plan ("Plan More Production") operates mainly under the governance of agencies directly related to NIB. Sometimes, the P+P Plan is referred to as NIB itself, especially considering the substantial funds it mobilizes—recently updated from R\$300 billion to R\$342 billion. While this is considered a significant stimulus for entrepreneurs' investment, it is worth noting that these funds are primarily loan-based, which are generally less potent than direct investments, tax reliefs, subsidies, and procurement in driving industrial transformation.

The distinction between policy interventions (PIs) by missions and by sectors may lead to misconceptions. While a PI by mission is novel, it does not necessarily conflict with sector-based implementation. The chosen niches align with the technological and industrial challenges necessary to achieve the established missions sustainably, based on productive and technological capacities that are progressively accessible to Brazil. The success in addressing the concrete challenges defined by each mission largely depends on advancing in these specific niches. Although there may be room for improvement in future iterations, whether in selecting niches, the availability of instruments, the macroeconomic environment or the institutional arrangements, the core concept remains sound.

³ EMBRAPII (Brazilian Company of Research and Industrial Innovation) is a Social Organization by the Federal Public Power, which, since 2013, supports technological research institutions fostering the Brazilian industry innovation, linked with the Ministry of Science, Technology, Innovation and Communications – MCTIC and the Ministry of Education.

The NIB's coordination is still developing the institutional model for monitoring these segments. The trend is towards reviving the old "sectoral chambers," possibly in an adapted form with greater participation of ICTs and the relevant ministries. However, a significant challenge is the current structure, which may need to be more compatible with the task, particularly given the need for bureaucratic autonomy. Ideally, the Secretariat of Industrial Development (SDIC) would be the most suitable body for coordination, but this remains to be determined under the existing framework.

Another challenge is the limited representation of the productive sector and unions within these niches, which could exacerbate existing issues, such as the strong rejection of industrial policies by the mainstream press and the relative fragility of the immediate beneficiaries.

Regarding the instruments, the primary NIB tools have been loans with favorable conditions or grants for R&D. The most effective approach is prioritizing projects that significantly impact their respective value chains, with lower guarantee requirements or reduced co-participation from the companies involved. Additional instruments include leveraging modest state purchasing power through preference margins or requiring national content where possible for prioritized sectors. In specific areas like defense (including space programs), security, and health, targeted instruments can direct demand effectively, such as technological orders, special bidding terms, and partnerships for local innovation in health.

The emerging approach in NIB suggests an innovative and coherent method for turning mission-oriented policies into practical solutions for significant social challenges, particularly in semi-industrialized countries like Brazil, which lag behind the technological frontier in many science-based sectors.

The challenges faced by Brazil's "New Industry Brazil" (NIB) program underscore the importance of robust governance and state capacity, as discussed in Section 1. The NIB's mission-oriented approach aligns with the evolved role of industrial policy, yet its implementation reveals the complexities of applying it in specific contexts. The issues of coordination, financial constraints, and political consensus highlight the need to address the governance and institutional challenges emphasized earlier. Ultimately, the success of NIB hinges on effectively navigating these obstacles, reaffirming the critical link between theory and practical application in industrial policy.

3. Managing Institutional and Coordination Challenges in Brazil's New Mission-oriented Industrial Policy

The "New Industry Brazil" (NIB) program, despite its ambitious objectives to foster technological innovation, ecological sustainability, and comprehensive reindustrialization,

faces significant challenges rooted in Brazil's complex institutional and governance landscape. As outlined in the previous sections, the mission-oriented approach adopted by NIB reflects global shifts in industrial policy, emphasizing cross-sector collaboration and strategic alignment with broader societal goals (Mazzucato, 2018). However, translating these theoretical frameworks into practical action within Brazil's fragmented political environment and weakened state capacities presents considerable difficulties, raising questions about the feasibility of such an ambitious policy agenda.

One of the central issues in implementing the NIB program is the challenge of making collective decisions within a democracy characterized by high political polarization and low accountability (Cavalcante & Gomide, 2018). Diverse interest coalitions mark Brazil's political landscape, each with priorities and agendas. This fragmentation complicates building consensus around long-term industrial strategies, especially those requiring significant state intervention and reallocation of resources. The NIB program, which seeks to promote innovation and sustainability across various sectors, necessitates a level of interministerial and interagency coordination that has historically been difficult to achieve in Brazil (Stumm et al., 2019).

The first macro process to understand is the dilemma of planning and coordinating public policies, particularly the relationship between industrial and macroeconomic policies. Brazil's economic history has demonstrated that macroeconomic stability is crucial for industrial growth. However, the tools used to achieve this stability—such as high interest rates and a strong currency—often conflict with industrial policy goals (Marconi & Rocha, 2012). For instance, the Central Bank's reliance on high interest rates to control inflation increases the cost of credit, making it more difficult for industries to invest in innovation and expansion (Maddison, 2013). This disconnect between industrial and macroeconomic policies has been a longstanding issue in Brazil, and the NIB program must navigate this tension to succeed.

A second critical issue is the mechanisms of public and private cooperation. Effective industrial policy requires coordination within the government and strong partnerships with the private sector (Bouckaert et al., 2010). However, Brazil's history of public-private collaboration has been mixed, with many initiatives suffering from a lack of trust and commitment from both sides. The NIB program, focusing on innovation and sustainability, demands a new model of public-private partnership that goes beyond traditional sectoral approaches and embraces a more integrated, mission-oriented framework (Ferraz et al., 2013). Achieving this will require overcoming significant institutional barriers and fostering a culture of collaboration that is often lacking in Brazil.

The NIB's governance structure, centered around the National Council of Industrial Development (CNDI), is designed to facilitate this coordination and collaboration.

However, the effectiveness of this structure is contingent on several factors, including the political will to enforce decisions, the capacity of participating agencies to implement policies, and the ability to manage the competing interests of different stakeholders (De Toni, 2013). The CNDI's role in overseeing various working groups and ensuring that their efforts are aligned with the broader goals of NIB is critical, but this requires a level of bureaucratic autonomy and efficiency that has often been absent in Brazil's public administration (Bouckaert et al., 2010).

The coordination challenges are further exacerbated by Brazil's complex federal structure, which grants significant autonomy to states and municipalities. This decentralization can lead to discrepancies in policy implementation across different regions, with some areas benefiting more than others from national industrial policies. The NIB program must address these regional disparities to ensure its benefits are felt nationwide rather than concentrated in a few economically advanced areas (Cavalcante & Gomide, 2018). This requires a more nuanced approach to federalism, one that balances the need for national coherence with the flexibility to adapt policies to local conditions.

Another significant challenge is the need for effective monitoring and evaluation mechanisms. With its ambitious goals and broad scope, the NIB program requires rigorous oversight to achieve its intended outcomes (Mazzucato & Kattel, 2018). However, Brazil's track record in this area is mixed, with many industrial policies suffering from a lack of transparency and accountability. Establishing the Brazilian Industrial Development Agency (ABDI) as a monitoring body is a step in the right direction. However, its effectiveness will depend on its ability to operate independently and without political interference (Suzigan & Furtado, 2006). The success of the NIB program will hinge on the government's commitment to holding all stakeholders accountable for their contributions to the program's goals.

Financial constraints also pose a significant hurdle to implementing the NIB program. The rapid growth of pensions and other social transfers in recent years has put pressure on Brazil's fiscal resources, limiting the government's ability to invest in industrial policy (Couto & Rodrigues, 2022). While the NIB program proposes ambitious targets for investment in innovation and sustainability, the reality is that Brazil's fiscal space is constrained, and the government may struggle to mobilize the necessary resources. State loans and tax incentives as primary instruments for funding the NIB program may not be sufficient to drive the level of industrial transformation that the program envisions (Ferraz et al., 2013).

Moreover, the political landscape presents additional obstacles. The Lula administration, while committed to reindustrialization, faces resistance from various quarters, including

political actors linked to the neoliberal ideological camp who criticize the resumption of state activism (Lacerda & Severian, 2023). Within the government, there are also disagreements about the effectiveness of the proposed industrial policies, with some factions questioning the feasibility of the NIB program's goals based on missions (Stumm et al., 2019). The political coalition supporting the government is diverse, comprising parties with varying and sometimes opposing views on the role industrial policy. This diversity complicates the decision-making process and increases the likelihood of policy fragmentation and inconsistency (Schneider, 1999).

The challenges of coordination and governance are not limited to the national level. Brazil's position in the global economy also presents significant hurdles. The increasing complexity of global value chains, the rise of new technologies, and the geopolitical tensions that have emerged in recent years all create an environment of uncertainty that complicates the implementation of industrial policy (Hiratuka & Sarti, 2018). The NIB program must navigate these global challenges while addressing the domestic issues that have historically hindered Brazil's industrial growth.

In this context, the importance of robust state capacities cannot be overstated. The ability to implement complex and ambitious policies like NIB depends on the strength of the bureaucracy, the effectiveness of governance structures, and the government's capacity to coordinate across different levels of administration (Bouckaert et al., 2010). However, Brazil's public sector has been weakened by years of fiscal austerity, political instability, and a lack of investment in human resources (De Toni, 2013). Rebuilding these capacities will be essential if the NIB program is to achieve its goals.

The emergence of cooperative networks based on solid ground, political capital, and permanent communication is improbable in the current environment, given the absence of effective instruments of intergovernmental coordination (Cavalcante & Gomide, 2018). The conditions of uncertainty that involve industrial policy, based heavily on incentives for voluntary adherence, the dominant politically competitive and unstable environment, and the great inequality in the distribution of power resources among the actors that make up its institutional ecosystem, contribute to the low effectiveness of instruments (Aiginger & Rodrik, 2020).

Given these challenges, the NIB program must prioritize the development of new governance structures capable of coordinating complex policy initiatives across multiple sectors and levels of government (De Toni, 2018). This includes establishing clear decision-making rules, organizing collective action, and stabilizing hierarchical relationships. The conditions for implementing an innovative industrial policy based on missions are more sophisticated and complex than those present in other industrial

policies, necessitating a higher degree of reflection and cognitive elaboration (Mazzucato, 2021).

Ultimately, the success of the NIB program will depend on the government's ability to navigate these political and institutional challenges. This will require a concerted effort to strengthen state capacities, build political consensus, and foster genuine collaboration between the public and private sectors (Schneider, 1999). Without these efforts, the ambitious goals of the NIB program may remain out of reach, and Brazil's potential to play a leading role in the global economy may go unrealized (Arbix et al., 2017).

The political and institutional landscape that currently shapes Brazil's industrial policy efforts is emblematic of the broader challenges that mission-oriented policies face in peripheral nations. Brazil's path to reindustrialization, emphasizing innovation and sustainability, is fraught with complexities that demand more than just political will; they require rethinking the structures underpinning policy implementation and governance. The NIB, therefore, is a test of Brazil's industrial strategy and a litmus test for the country's ability to adapt to and thrive in a rapidly evolving global economic environment.

The implementation dilemmas of "New Industry Brazil" are more severe and create more demanding challenges in state capacities, innovation, and political leadership. The success of the NIB program hinges on effectively addressing these challenges, reaffirming the critical link between theory and practical application in industrial policy (Juhász & Lane, 2024). The program's ability to achieve its reindustrialization, innovation, and sustainability goals will depend on the government's capacity to overcome the obstacles identified in this section and build the robust governance structures needed to support a mission-oriented industrial policy (De Toni, 2018).

Conclusion and recommendations

The debate surrounding industrial policy is contentious due to its inherent requirement for governments and societies to prioritize goals, missions, or production chains, thus deciding how to allocate limited national resources. These decisions are not solely based on technical criteria or objective rationality; they also involve political and institutional judgments that are conflictuous by nature. Consequently, industrial policy demands a coordinated and systemic approach that integrates short—and long-term objectives while aligning with macroeconomic strategies.

Brazil's potential to play a pivotal role in reconfiguring global value chains hinges on a sophisticated strategy that makes informed choices and bold bets on the future of its economy, one of the largest in the world. However, this requires the maturation of significant political agreements over time. However, many of Brazil's political and

economic elites have moved away from supporting industrial policy, instead focusing on natural comparative advantages or the profitability of rentier financial capital. As a result, industrial policy that goes beyond correcting market failures remains elusive as a stable and predictable strategy, especially in Brazil's adverse political and institutional environment.

The Brazilian parliament typically resists inclusive policy agendas, often overshadowed by clientelistic practices. The country's monetary policy, characterized by the highest interest rates, exacerbates financialization, further complicated by the Central Bank's autonomy. Moreover, critical decision-making centers within the state have historically been influenced by powerful interest groups entrenched in the administrative structure. The public bureaucracy needs more specialization for designing and implementing complex policies requiring extensive coordination. Brazil's federal administrative structure is also highly siloed, with limited engagement between civil servants and the productive sector. The political landscape, marked by intense polarization, impedes the formation of stable coalitions needed for reindustrialization. Brazil's coalition presidentialism has led to a fragmented multi-party environment, complicating the development and maintenance of long-term agendas. In this context, the global green and digital transitions—pillars of new industrial policies worldwide—risk becoming another missed opportunity for Brazil.

To enhance the effectiveness of productive development policies like “Nova Indústria Brasil,” it is crucial to align several key strategies despite the inherent risks and uncertainties. One of the most important strategies is strengthening the support coalition around industrial policy. Historically, no country has successfully overcome underdevelopment without strong socio political coalitions that support industrial policy. Complex public programs that require significant coordination resources are unlikely to succeed without robust political backing. Several factors contribute to the political influence of an idea, including the presence of charismatic political entrepreneurs, the technical quality of public bureaucracy, effective communication strategies, and the ability to seize windows of opportunity.

Another vital strategy is the redesign of policy governance. Governance structures should be reformed to become more flexible, resilient, and practical, reducing the transaction costs associated with policy coordination. Establishing a system of incentives can foster cooperative actions among government actors and between the public and private sectors. Achieving this requires influential negotiation arenas, transparent communication processes, shared authority, experimentation, and systematic monitoring and continuous improvement of projects.

Finally, it is essential to coordinate industrial policy goals with macroeconomic policy objectives. The negative coordination that leads to zero-sum games between industrial

and economic policy goals must be avoided, particularly in monetary, exchange rate, and fiscal policies. Overcoming these challenges requires skillfully navigating the complexities of political power dynamics in parliament, coordinating sectoral interests within the government, and addressing the inherent rigidities of economic policy instruments.

Brazil's mission-oriented industrial policy represents a significant shift in the country's economic strategy, as mentioned, aiming to align industrial growth with technological innovation and ecological sustainability. However, this initiative faces substantial challenges rooted in Brazil's institutional and political landscape. The fragmented political system weakened state capacities, and the complex coordination among various governmental and private stakeholders presented significant hurdles to successful implementation.

The findings of this study highlight the critical need for enhanced state capacity and more effective governance structures to manage Brazil's industrial transformation. While innovative in its goals, the current framework may need to address these underlying institutional weaknesses to achieve its objectives. The lack of coordination between macroeconomic and industrial policies and the influence of entrenched interest groups threaten to undermine the new industrial strategies.

Moreover, relying on traditional instruments like state loans and tax incentives without sufficient monitoring and evaluation mechanisms raises concerns about these policies' sustainability and long-term impact. The success of the mission-oriented approach will depend heavily on the government's ability to build consensus, reduce policy fragmentation, and foster genuine collaboration between the public and private sectors.

The broader implications suggest that Brazil's approach to reindustrialization could serve as a model for other developing nations facing similar challenges. However, for this model to be effective, it must be supported by robust institutional frameworks capable of adapting to the rapidly changing global economic environment.

The NIB program is still in its early stages, and many of the outcomes are yet to fully materialize. This study provides a snapshot of the initial challenges and potential barriers, but it cannot fully assess the long-term impacts of the program. A longitudinal study would be necessary to evaluate the program's success over time.

Future research should explore alternative governance models that enhance coordination between different sectors and levels of government and delve deeper into the role of public-private partnerships in mission-oriented policies. Additionally, longitudinal studies tracking the long-term impacts of Brazil's industrial policies, particularly concerning sustainability and technological innovation, are essential.

References

- Aiginger, K., & Rodrik, D. (2020). "Rebirth of Industrial Policy and an Agenda for the Twenty-First Century." *Journal of Industry, Competition, and Trade*, 20(2), 189-207.
- Andreoni, A., & Chang, H.-J. (2019). "The Political Economy of Industrial Policy: Structural Interdependencies, Policy Alignment and Conflict Management." *Structural Change and Economic Dynamics*, 48, 136-150.
- Araujo, E., & Feijo, C. (2023). **Industrialização e desindustrialização no Brasil: Teorias, evidências e implicação de política**. Curitiba: Editora Appris.
- Arbix, G., Salerno, M. S., Amaral, G., & Lins, L. M. (2017). Advances, mistakes and instability of innovation policies in Brazil. **Novos Estudos CEBRAP**, 36(3), 9-27.
- Baer, W. (2001). *The Brazilian Economy: Growth and Development*. Praeger Publishers.
- Bouckaert, G., Peters, B. G., & Verhoest, K. (2010). **The coordination of public sector organizations: Shifting patterns of public management**. London: Palgrave Macmillan.
- Carrara Jr., E., & Meirelles, H. (1996). **The chemical industry and the Development of Brazil 1500-1889** (Vol. 2, 968 p.). São Paulo: Metalivros.
- Cavalcante, P., & Gomide, A. (2018). Núcleo de governo no Brasil: Características e padrões de funcionamento do Poder Executivo Federal. In P. Cavalcante & A. Gomide (Eds.), **O presidente e seu núcleo de governo: A coordenação do poder executivo** (pp. XX-XX). Brasília: IPEA. Retrieved from <https://repositorio.ipea.gov.br/handle/11058/9049>
- Cline, K. D. (2000). Defining the implementation problem: Organizational management versus cooperation. **Journal of Public Administration Research and Theory**, 10(3), 551-571. Retrieved from <https://academic.oup.com/jpart/article-abstract/10/3/551/945558>
- Couto, L., & Rodrigues, J. (2022). **Governança orçamentária no Brasil**. Brasília: IPEA. Retrieved from <https://repositorio.ipea.gov.br/handle/11058/11565>
- De Negri, F., & Squeff, F. D. H. S. (2016). **Sectoral innovation systems and research infrastructure in Brazil**. Brasília: IPEA.
- De Toni, J. (2013). **Novos arranjos institucionais na política industrial do Governo Lula: A força das novas ideias e dos empreendedores políticos** (Doctoral dissertation). Universidade de Brasília, Brasília, DF. Retrieved from <http://icts.unb.br/jspui/handle/10482/14854>

De Toni, J. (2018). Agenda estratégica, planejamento e programas eleitorais: Cálculo político e pragmatismo. In P. Cavalcante & A. Gomide (Eds.), **O presidente e seu núcleo de governo: A coordenação do poder executivo** (pp. XX-XX). Brasília: IPEA. Retrieved from <https://repositorio.ipea.gov.br/handle/11058/9049>

Delgado, I. G. (2015). **Política industrial na China, na Índia e no Brasil: Legados, dilemas de coordenação e perspectivas**. Brasília: IPEA. Retrieved from https://repositorio.ipea.gov.br/bitstream/11058/3632/1/td_2059_.pdf

Ferraz, J. C., Kupfer, D., & Marques, F. S. (2013). Financing development: The case of BNDES. In J. E. Stiglitz & J. Y. Lin (Eds.), **The industrial policy revolution I: The role of government beyond ideology** (pp. 143-157). Palgrave Macmillan.

Gomide, A., Sá e Silva, M., & Leopoldi, M. (2023). **Desmonte e reconfiguração de políticas públicas (2016-2022)**. Brasília: IPEA & INCT/PPED.

Hausmann, R., & Rodrik, D. (2003). "Economic development as self-discovery." *Journal of Development Economics*, 72(2), 603-633.

Hiratuka, C., & Sarti, F. (2018). Recent performance of Brazilian industry in the context of domestic and global structural changes. In R. Carneiro, P. Baltar, & F. Sarti (Eds.), **Beyond economic policy** (pp. XX-XX). São Paulo: Editora UNESP.

Lacerda, A. C. D., & Severian, D. (2023). Industrial policy and deindustrialization in Brazil: David Kupfer's inspirations for the debate. **Revista de Economia Contemporânea**, 27, e232724.

Lane, N., & Juhász, R. (2024). "Industrial Policy and the Politics of Trade: Revisiting the Evidence." *American Economic Journal: Economic Policy*, 16(3), 1-37.

Lula. (2022). **Diretrizes do programa de reconstrução e transformação do Brasil, Lula Alckin 2023-2026, Coligação Brasil da Esperança**. Retrieved from <https://www.cartacapital.com.br/wp-content/uploads/2022/09/lula.pdf>

Maddison, A. (2013). Post-war growth in historical perspective. In **Economic progress and policy in developing countries** (pp. 17-35). Routledge.

Maia, B. A. D. A. (2020). Is there deindustrialization in Brazil? A study of the classical approach and alternative analyses between 1998 and 2014. **Economia e Sociedade**, 29(2), 549-579.

Malerba, F. (2004). Sectoral systems of innovation: Basic concepts. In F. Malerba (Ed.), **Sectoral systems of innovation: Concepts, issues and analyses of six major sectors in Europe** (pp. XX-XX). Cambridge: Cambridge University Press.

Marconi, N., & Rocha, M. (2012). Exchange rate, foreign trade and early deindustrialization: The Brazilian case. **Economia e Sociedade**, 21(3), 853-888.

Mazzucato, M. (2018). "Mission-Oriented Innovation Policies: Challenges and Opportunities." *Industrial and Corporate Change*, 27(5), 803-815.

Mazzucato, M. (2018). **Mission-oriented research & innovation in the European Union: A problem-solving approach to fuel innovation-led growth**. Luxembourg: Publications Office of the European Union. Retrieved from <https://op.europa.eu/en/publication-detail/-/publication/5b2811d1-16be-11e8-9253-01aa75ed71a1/language-en>

Mazzucato, M. (2021). **Mission economy: A moonshot guide to changing capitalism**. London: Penguin Books.

Mazzucato, M., & Kattel, R. (2018). "Creating and nurturing innovation ecosystems with mission-oriented policies." *Industrial and Corporate Change*, 27(5), 803-815.

Ostrom, E. (1990). **Governing the commons: The evolution of institutions for collective action**. Cambridge: Cambridge University Press.

Rodrik, D. (2008). "Normalizing Industrial Policy." Commission on Growth and Development, Working Paper No. 3.

Sarti, F., & Hirakuta, C. (2014). Indústria, emprego e desenvolvimento regional. **Brasil em Debate**. Retrieved from <https://brasildebate.com.br/industria-emprego-e-desenvolvimento-regional/>

Schneider, B. R. (1999). The developmental state in Brazil and Mexico. In M. Woo-Cumings (Ed.), **The developmental state** (pp. XX-XX). Ithaca, NY: Cornell University Press.

Scott, J., & Marshall, G. (Eds.). (2009). **A dictionary of sociology**. Oxford: Oxford University Press.

Shapiro, M. (2013). Ativismo estatal e industrialismo defensivo: Instrumentos e capacidades na política industrial brasileira. **Texto para Discussão** (No. 1856). Brasília: IPEA. Retrieved from https://repositorio.ipea.gov.br/bitstream/11058/2922/1/TD_1856.pdf

Stumm, M., Nunes, W., & Perissionotto, R. (2019). Ideias, instituições e coalizões: As razões do fracasso da política industrial lulista. *Revista de Economia Política*, 39(4), 736-754. Retrieved from

<https://www.scielo.br/j/rep/a/LJfpTx8XyNVsphGckxZPXcs/?format=pdf&lang=pt>

Suzigan, W., & Furtado, J. (2006). Política industrial e desenvolvimento. *Revista Brasileira de Inovação*, 5(1), 3-43. Retrieved from <https://www.scielo.br/j/rep/a/mSMT3Jw8Mv7ZFNcWqRtyNkv/?format=pdf&lang=pt>

Suzigan, W., & Villela, A. (2009). Industrial Policy in Brazil. CEPAL Review.

Vajda, M., & Stein, A. (1978). The state and socialism. *Social Research*, 45(4), 844-865.