

The NDB and the Ecological Transition: Decoupling Development Finance from Core Currency Hegemony?

Beatriz Mattos and Enzo Godinho

Abstract:

This paper investigates the role of the New Development Bank (NDB) in challenging global financial hierarchies while fostering an ecological transition. The NDB, established by the BRICS nations, has a mechanism of providing development finance in local currency, which could reduce dependency on core currencies like the USD and EUR, offering an alternative for peripheral economies to finance sustainable development. Given the institutionalization of the green economy agenda and the rise of green finance, the paper raises elements to assess whether the NDB effectively contributes to the ecological transition through its investment strategy.

Our analysis builds on structuralist and dependency theories, identifying three interlinked hierarchies—productive, currency, and environmental—that shape global financial asymmetries. We examine the NDB's project portfolio from 2016 to 2024, and particularly the interplay between the projects' area of operation, currency of funding, and country of implementation. The findings indicate that, while the NDB has made strides in funding sustainable infrastructure, its operations remain largely embedded within dominant currency systems. Only China and, to a lesser extent, South Africa have successfully leveraged national currencies, whereas other BRICS and partner countries remain reliant on core currencies.

Despite its strategic goal of increasing local currency lending, the NDB's ability to disrupt financial subordination remains limited. The bank's commitment to green finance is evident, yet many projects still operate within traditional resource-intensive models, raising concerns about the depth of its ecological transformation. Ultimately, while the NDB represents an important step toward a multipolar financial system, its potential to drive systemic change hinges on further institutional reforms, political commitment and expanded local currency financing - which is in line with the funding trends observed in the last years of NDB's operations.

1. Introduction

Over the last few years, the climate crisis has become of key interest to the international debate, as its acceleration manifested globally. Most of the global agendas seeking to overcome it identify massive investments (Magalhães, 2021) or ‘green’ growth goals as the solution (Brand et al., 2021; Brand & Lang, 2019), promoting structural transformations in economic systems. On the one hand, the shift towards a ‘green economy’ has been pushing forward the energetic transition (e.g., the expansion of clean energy sources, such as wind and solar) and the development of new technologies (e.g., CCS) and infrastructures (e.g., low-carbon mobility). On the other hand, the financial sphere has pushed toward the trade of commodified and financialized forms of nature (e.g., biodiversity offsets, carbon credits, ecosystem services) and the expansion of new financial instruments markets (Moreno, 2013; Spash, 2015, 2017), under the guise of “green finance” initiatives.

This process unfolds within core-periphery structural asymmetries (Porcile & Torres, 2024; Althouse et al., 2023; Dorninger et al., 2021; Hickel et al., 2022; Horner et al., 2018; Palludeto & Abouchedid, 2016, among others). The biggest part of international investments implies the use of the Core's currencies and the reinforcement of neoliberal reforms on debtor states – as a condition to access markets and prove financial stability (Althouse & Svartzman, 2022; Svartzman & Althouse, 2022). Extensive literature¹ examines how Western-dominated Bretton Woods institutions (e.g., IMF & World Bank), traditional international development banks (e.g. IDB) (Acosta, 2013), and international state apparatuses (Brand & Wissen, 2018, 2021) interact to create legal and conceptual frameworks to operationalize ‘structural development’ transformations. However, they broadly fail to accommodate peripheral countries’ interests (Carvalho et al., 2015; Qobo and Soko, 2015).

As a response to this prioritization (Biswas, 2015), the BRICS countries pushed for reforms in global financial systems, advocating for a new financial architecture that could reflect the bloc’s prominent economic rise and challenges. Peripheral countries face not only restrictions to autonomous development—marked by structural dependency relations (Porcile & Torres, 2024)—

¹ Babb & Kentikelenis (2018), Botta (2016), Botta (2018), Chorev (2018), Bracking (2009), Carvalho (2016), Libânio (2020), Stockhammer (2016), Thirkell-White (2006).

but also significant “investment gaps” (Qobo & Soko, 2015; Suchodolski & Demeulemeester, 2018), particularly in adaptation and mitigation efforts. This process led to the creation of the New Development Bank (NDB), promoting intra-BRICS financial cooperation, particularly in renewable energy and infrastructure projects (Copper, 2017; De Conti et al., 2019). The emergence of institutions that offer alternative pathways to potentialize peripheral countries efforts to promote an ecological transition, while overcoming the productive, monetary and ecological structural hierarchies, is a key issue, albeit broadly unaddressed.

For this reason, the present research investigates the role of the NDB in moving away from the current global currency hierarchy (Palludeto & Abouchedid, 2016), while fostering an ecological transition. Given the considerable number of projects developed by the NDB since 2016 and the lack of a publicly available database, information detailing the nature of the NDB’s project portfolio was collected and organized. This enabled an assessment of the bank's financing activities in terms of scale and area of operation over its years of existence (2016-2024). Additionally, the extent to which operations have been conducted outside the dominant currency nexus was examined by analysing the share and distribution of projects carried out with core and periphery currencies. Finally, the extent to which the institution’s original goals—outlined in the NDB’s general strategy (2017-2021; 2022-2026)—are reflected in the performance and outcomes of these projects was evaluated, particularly in relation to the goals of local currency borrowing and sustainable development initiatives.

Beyond this introduction, the paper is structured as follows. Section 2 examines the emergence of the green finance agenda within the broader green economy project, discussing its conceptualizations, policy frameworks, and critiques. Section 3 explores the structural global asymmetries—productive, currency, and environmental hierarchies—that shape the greening of finance and reinforce global imbalances. Section 4 focuses on the NDB as an alternative financial institution, exploring its institutional emergence within the BRICS, its innovations and shortcomings in addressing green finance and currency hierarchy challenges, and its sustainable development strategy. Section 5 presents an empirical analysis of the NDB’s project portfolio, focusing on its areas of operation and currency use, as well as the methodological approach to it. Section 6 presents the results, while Section 7 discusses them, followed by the conclusion in Section 8.

2. Green finance: emergence, conceptualizations and critics

The institutionalization of ‘green economy’ agendas and climate change mitigation and adaptation imperatives (Klingler et al., 2024), expressed in the ‘net zero’ climate agreements assumed by national states and private actors in international summits, has been shaping economic policies globally – as exemplified by the European Green New Deal, the US Inflation Reduction Act, Japan’s Green Growth Strategy and others. Overall, the green economy agenda is conceptualized as a “new growth strategy”, in which the goal is to decouple growth from resource use and GHG emissions, to both tackle the climate crisis and sustain the economic status-quo (Brand & Lang, 2019).

On the one hand, the agenda states the need to *mitigate* the causes of climate change and environmental damage by promoting the decarbonization of the economies – for instance, by means of completing an energetic transition (i.e. changing fossil-intensive energy matrixes and incorporating energy-efficient technologies). On the other, there is a need to *adapt* to the possible impacts emerging from a changing climate and its tipping points – for instance, by means of adjusting infrastructures to make them more resilient to physical damage from extreme climate events or adapting loss and damage insurance frameworks for climate-disaster risks.

Within this broad agenda of transformation, ‘green finance’ has been gaining momentum as a core element to promote the necessary adaptation and mitigation actions². Although there is no consensus, or precise term specification, ‘green finance’ has been broadly conceptualized as an aggregate of innovative financial markets and instruments that incorporate climate- and nature-related risks and considerations into financial decision-making, regulations and practices, to ultimately increase the resilience of financial systems. Within a mainstream paradigm, it is understood that there is a need to price environmental externalities to steer markets’ decision-making, thereby incentivizing the promotion of mechanisms as carbon markets, taxes, biodiversity offsets, and others (Magalhães, 2021; Spash, 2015). In this framing, the role of the state is conceptualized as necessary for the provision of subsidies, de-risking mechanisms and other forms

² The underlying conceptualization of finance, in this sense, is that it is a means of transformation of the economies, that currently is being mostly oriented towards the reproduction of fossil-intensive activities, but that otherwise would be a crucial mechanism for shifting capital towards sustainable activities and away from environmentally damaging ones.

of financial support to attract and foster private capital to these relatively risky ‘green’ assets and operations (Santos, 2023). This dynamic is part of what Gabor (2021) terms the “Wall Street Consensus,” where public-private partnerships (PPPs) and blended finance mechanisms are elaborated to socialize losses while privatizing profits.

In contrast to the neoliberal paradigm, a reformist approach to ‘green finance’ is grounded on economic foundations that emphasize the central role of the state by means of expanding public investment and coordinating policies across fiscal, industrial, and financial spheres. This approach aligns with the concept of “environmental state”, which provides patient, long-term and large-scale public investment guided by missions (Duit, 2016; Mazzucato, 2015). A key element of this heterodox approach is that the capacity to address environmental problems finds its constraints not necessarily in traditional notions of financial scarcity, but rather on the prevailing economic austerity imperatives. Therefore, this paradigm poses the need to advance beyond market-based solutions but assumes the consensus of a need to “bridge the investment gap” between current investment efforts and the financing required for addressing the climate crisis – a bridge that would be achieved by means of public investment, mobilization of private capital and adaptation in financial systems (Haas et al., 2022).

In other words, there is a clear convergence between mainstream and heterodox economic proposals on the necessity of significant green investments to address the infrastructural gap that hinders decarbonization efforts (Magalhães, 2021).

However, there are several shortcomings and problematics involved with these conceptualizations of a transition through green finance, particularly when it comes to the transformational potentials and the reinforcement of global imbalances associated with it. Magalhães (2021) critically assesses this widespread consensus for significant ‘green investments’ – under the guise of a Green Investment Paradigm (GIP) – pointing that it often disregards the multi-scale depth of the ecological contradictions, for instance by assuming that certain technologies and infrastructures can be intrinsically sustainable. By treating ‘green investments’ as virtual cash flows without material impacts on ecosystems, the GIP reinforces the notion that large-scale infrastructure investments are essential for an ecological transition. This perspective aligns

with the emerging global investment consensus, which promotes large-scale infrastructure projects as a means to transform infrastructure into a new asset class (Tricarico & Sol, 2016).

The literature also points out that proposals to restructure the international financial architecture typically approach the ecological crisis and global inequalities as separate phenomena, without addressing issues of subordinated positions in the international monetary and financial system – or the underlying productive and ecological hierarchies that endorse it (Althouse & Svartzman, 2022). In this sense, the ‘gap’ often mentioned in discussions of sustainability—whether in financing, resource access, or emissions reductions—is considered here not as a temporary state to be overcome but as a functional condition of capitalism. This means that, on the one hand, proposals to finance ‘green’ forms of growth have the potential to overlook and reinforce fundamental causes of unsustainable patterns and increase global core-periphery imbalances (Althouse et al., 2023; Dorninger et al., 2021; Hickel et al., 2022; Horner et al., 2018), since the architecture of green financing is inserted within monetary, productive and ecological hierarchies (Althouse & Svartzman, 2022). Therefore, a transformative approach to green finance entails addressing structural global asymmetries (Oman et al., 2024; Svartzman & Althouse, 2022), that will be discussed in the following section.

3. Structural global asymmetries shaping the greening of finance: productive, currency, and environmental hierarchies

The theoretical framework which bridges a transformative approach of green finance to our hypothesis comes from Latin American structuralism and dependency theory. This approach understands that “underdevelopment is not a stage, but a condition of the development process of capitalist economies” (Furtado, 1965). In this context, capitalism needs hierarchies to function, which are embedded in structural differentiations of the capitalist world-system. The core and the periphery thus coexist and reinforce their conditions, while simultaneously generating development at the expense of underdevelopment (Frank, 1966).

3.1 Production hierarchy

The global capitalist economy has an intrinsically bipolar structure that interacts asymmetrically, and generates a pattern of specialization (Prebisch, 1949). Accordingly, the colonization process generated a global core specialized in the production and export of

manufactured goods, which have higher technology, higher productivity, and, consequently, higher economic growth. These allowed more homogeneous labor productivity across diversified economic structures and organized labor unions, which permitted the growth of real wages *vis-à-vis* productivity gains (Furtado, 1961). In opposition, the periphery specialized in the production and export of low-productivity, low- technology primary goods. Accordingly, this commodity-driven productive structure gave rise to a superstructure with powerful rentiers, who do not invest in capital formation and innovation, but rather use their economic surplus to mimic consumption patterns of the core (Porcile & Torres, 2024).

According to Porcile and Torres (2024), the hierarchy of production relies thus in the deterioration of the terms of exchange through the differences in the income elasticities of the exports, the differences in wage-bargaining and its consequences to wage stagnation *pari passu* productivity increases, the differences in technological progress, weak institutions (as a consequence of core-periphery and colonization dynamics), and differences in economic cycles. In this context, the periphery has several negative consequences to the functioning of their economies, i.e., balance of payments crisis, domestic inflation, constraining the importation of capital goods (and technological catching-up). These serve as impediments for the peripheral economic development through industrialization and reiterates the core-periphery dynamics.

3.2 Currency hierarchy

Furthermore, using the same theoretical framework, several authors built upon the classic Latin American Structuralism and dependency theory to conceptualize currency hierarchy³ and international financial subordination⁴. This literature analyses the differences in the monetary dimensions of currencies, as well as their qualitative differences in the context of a financialized capitalism. The phenomenon of financialization, in this sense, serves a systemic standard of capital accumulation, implying a hyper valuation of liquid forms of wealth, and thus an exacerbation of the liquidity preference, which systemically shapes the *modus operandi* of financial actors towards a compulsion to short-term returns (Oliveira & De Conti, 2022).

³ Currency hierarchy: Carneiro (1999), De Conti (2011), Fritz et al. (2018), Kaltenbrunner (2015), Oliveira & De Conti (2022), Ponsot (2016), Prates (2002)

⁴ International Financial Subordination: Alami et al. (2022), Bonnizzi et al (2020), Bonnizzi et al. (2022)

In this context, **currency hierarchies** are based on the idea that “different national currencies are not equally capable of being, at the international level, what money traditionally needs to be: a unit of account, a means of payment and a store of value” (Palludeto & Abouchedid, 2016, p. 62). Within the uneven landscape of financialized globalization, the dollar sits at the top of the currency hierarchy, followed by other core-currencies (e.g. Euro, Yen, Swiss Francs), while currencies issued by peripheral countries sit at the bottom of this hierarchy. Accordingly, the fact that different national currencies have asymmetric capacities imposes extra challenges for their economies and monetary supervisors. As a consequence, central banks attempt to reduce exchange-rate volatility by actively managing currencies and setting the interest rates at a higher-level, implying higher borrowing costs, reducing productive investments, and ultimately sending revenues abroad. It is important to notice that the average peripheral country spends five times more on debt repayments than addressing the climate crisis (see Woolfenden & Kushal, 2022).

The low degree of liquidity of peripheral currencies means that peripheral countries have strong difficulties to borrow in their domestic currency. This happens mainly due to limitations in their balance-of-payments, public debt management, and the perception that their assets and investments usually are risk-intense – due to the lack of trust attributed to their currencies (Althouse & Svartzman, 2022; Svartzman & Althouse, 2022). This means that international investors demand a risk-premium that pressures the maintenance of high interest also to succeed in attracting foreign capital. As a result, peripheral countries commit the “original sin” described by Eichengreen and Hausmann (1999), borrowing in foreign currency at higher interest rates, which leads to currency mismatches, profit repatriation (Tahir et al., 2022), and capital flight.

Furthermore, the interest rate differentials between core and periphery are particularly attractive for agents seeking financial profits from the exchange between these two rates (Musthaq, 2021), which makes peripheral economies particularly vulnerable to market volatility, speculative attacks, and financial instability. These dynamic positions the Periphery as “business cycle takers” in contrast to the “business cycle makers” in the Core (Ocampo, 2017). In this sense, monetary and financial subordination in a context of high capital mobility subject peripheral countries to constantly react to external pressures from the Core (e.g. US domestic monetary policy), leaving little or no room to set key prices in the economy or to elaborate independent monetary policy, as

it demands high foreign exchange reserves accumulation and resources for sterilisation operations (Musthaq, 2021).

3.3 Environmental hierarchy

The last hierarchy discussed in this paper is the hierarchy of environmental transformation conceptualized by Althouse and Svartzman (2022). It goes in line with the previously discussed production and monetary hierarchies as it builds upon their framework and contributes to the understanding of the contemporary ecological dimension of the global capitalist system. The process of industrial specialization led the periphery to depend on low value-added industries, which usually rely on pollution- and resource-intensive extractivist activities. In this context, the periphery serves as a “pool” for “cheap” resources and a “sink” for pollution (Moore, 2016). For this reason, Althouse and Svartzman (2022) discuss an ecologically unequal exchange, defined as the asymmetric transfer of resources and labor from the periphery to the core. Capitalism, thus, relies on the constant search for cheap resources, energy, and labor (Moore, 2016; Patnaik & Patnaik, 2016), once high-priced commodities pose an existential threat to the core’s stability and imperial mode of living (Brand & Wissen, 2021) as it undermines the profitability and competitiveness of their firms.

On a similar vein, Hickel et al. (2024) shows that peripheral workers contribute to 90% of the labor in the world economy but receive only 21% of the global income. Moreover, Dorniger et al. (2021) shows that value added per ton of exports is now eleven times higher in high income countries. In this sense, core products exchange for ever-increasing amounts of peripheral resources over time, generating a social-economic polarization within the world-system (Hickel et al., 2024). Non-financial firms in the core therefore increase profits through the process of offshoring and outsourcing to the periphery in the context of global value chains, increasing the peripheral pressure to extract resources (Althouse et al., 2023). These multinational enterprises outsource pollution evermore through the creation of “pollution chains” (Duan & Jiang, 2021).

4. The New Development Bank: emergence, challenges and strategy

In this context, the emergence of financial institutions rooted within the Global South are relevant for offering alternative financing sources that can address some of the challenges derived from the structural hierarchies’ constraints. The existence of South-South financing, potentially

outside the dollar hegemony nexus, might help core economies reduce their reliance on funding that pressures their balance of payments and foreign exchange reserves. It could also alleviate pressure on their development models, provided these financial institutions develop operations that go beyond the limitations of the “de-risking” framework proposed by the WSC (Larsen, 2024).

This section will explore for what reasons the NDB can be regarded as one of these emergent institutions, both because of the nature of the political and historical context of its emergence – that is, within one of the most relevant contemporary Global South nation blocs (i.e. BRICS) – and because of what the bank proposes to achieve in a strategic dimension, as seen in NDB’s general strategy documents and their project portfolio (refer to the portfolio analysis in section 6).

4.1 Institutional emergence within the BRICS bloc

The concept of the BRIC was introduced by Jim O’Neill, then chief economist at Goldman Sachs, in the *Dreaming with the BRICs: The Path to 2050* (2003) report. The main aspects outlined in the report were the BRIC’s rapid economic growth, the dynamicity of their development trajectories, and their demographic trends. In 2010, South Africa joined the BRIC, evolving the acronym to the commonly known BRICS. The concept was thus appropriated by the leaders of the countries and a platform for cooperation was founded, creating forums for collective action and cooperation which gave voice to their economic weight on the global stage (Qobo & Soko, 2015). Especially during the beginning of the 2000’s, the BRICS attracted global attention. This attention was due to their vivid economic growth trends when compared to the recessions and stagnation observed in developed countries. Some projections suggested that the BRICS combined economic growth would surpass that of the G7 (Mehra & Azharuddin, 2023; Carvalho et al., 2015).

In this context, the BRICS started advocating for a significant reform of the global financial architecture, which could reflect their increasing economic growth and create opportunities for developing countries. On the same line, this advocacy stems from the dissatisfaction towards Western-led Bretton Woods financial institutions, which the process of the sharing of power and voting rights is inherently sluggish and/or denied (Qobo & Soko, 2015; Biswas, 2015). In this sense, the BRICS are unsatisfied with the International Monetary Fund (IMF) and the World Bank (WB), based on the unproportional space and relevance given to their accelerated economic growth

and that the agenda defended by these institutions are based strictly on the developed countries' interests, which marginalizes the needs of developing countries (Carvalho et al., 2015).

Therefore, the NDB was created in response to the frustration of the slow pace of reforms in the Bretton Woods institutions, particularly after the 2008 global financial crisis. After being conceptualized and elaborated through several BRICS summits, the bank became officially operational in 2016, aiming to serve as a platform for financing infrastructure and sustainable development projects (Molinari & Ceballos, 2024). Against this background, the emergence of the NDB symbolizes at the same time an economic and political shift (Biswas, 2015; Copper, 2017; Suchodolski & Demeulemeester, 2018). The NDB, therefore, is an institution whose agency can represent an important opportunity for enhancing intra-BRICS financial cooperation and addressing global monetary financial system's asymmetries (De Conti et al., 2019). The focus of the portfolio of the NDB is strongly related to projects of infrastructure, renewable energy, and sustainable development, which focus on the specific challenges and needs of global south developing countries (Copper, 2017; Mehra and Azharuddin, 2023), particularly in the context of an ecological transition.

4.2 The bank's innovations and shortcomings

The NDB has a strong potential to benefit its members and represents the willingness of the BRICS to project their economic preponderance and geopolitical influence. The prioritization of sustainable development infrastructure investments addresses important challenges common to several developing countries, especially when it comes to the general infrastructure investment bottleneck, often overlooked by Western-led multilateral financial institutions (De Conti et al., 2019).

In a similar vein, the NDB not only seeks to increase the power representativeness of the BRICS, but also to tackle the "investment gap" faced by developing countries, that is not fully addressed by the current multilateral development banks (Copper, 2017; Qobo & Soko, 2015; Suchodolski & Demeulemeester, 2018). In this context, the NDB enlarges the global financial architecture whilst boosting BRICS coordination and defending low- and medium-income countries against the backdrop of the instabilities derived from the Bretton Woods system (Carvalho et al., 2015).

Another fundamental aspect of the NDB is the absence of conditionalities to their project funding. In this sense, this tailored assistance respects the national sovereignty of and the territorial integrity of any state (NDB, 2022) by the non-interference in their political affairs and the imposition of conditions regarding economic policies or social standards, showing unconformity towards traditional borrowing mechanisms of the current international financial institutions (Suchodolski & Demeulemeester, 2018; De Conti et al., 2019; Duggan et al., 2022). In opposition, the IMF and WB still link their financial support to conditionalities, which goes in line with a neoliberal economic policy agenda of austerity that has harmful consequences for peripheral countries⁵.

The NDB has also a role in stimulating intra-BRICS commercial and financial transactions, fostering intra-group trade in their national currencies (De Conti et al., 2019). In the medium- and long-run this has the potential to increase the usage of BRICS's currencies, having beneficial impacts on their liquidity and stability. Therefore, the BRICS have an enhancing possibility of increasing debt in their sovereign currencies, which results in increased global power and influence (De Conti et al., 2019). This process facilitates financial de-dollarization through the promotion of the use of local currencies, thereby potentially reducing the U.S. dollar dependency and enhancing the member's financial sovereignty (De Conti et al., 2019)

Lastly, another essential innovation present in the NDB is the lending in local currency mechanism, which allows beneficiaries to further shift away from the dollar and increase their debt in local currency. This innovation is extremely important for developing countries as they have "weaker" currencies with lower liquidity premiums that face severe foreign exchange risks (Carvalho et al., 2015; Suchodolski & Demeulemeester, 2018). Furthermore, promoting indebtedness in local currencies fosters the development of local currency bond markets, addressing the challenge of mitigating currency mismatches from external borrowing while simultaneously meeting the substantial long-term financing needs often observed in developing countries (Dafe et al., 2018).

⁵ Babb & Kentikelenis (2018), Botta (2016), Botta (2018), Chorev (2018), Bracking (2009), Carvalho (2016), Libânio (2020), Stockhammer (2016), Thirkell-White (2006).

Despite the already discussed increasing economic performance of the BRICS countries and the creation of the NDB as an institution that advocates for their interests, there is little evidence that this process can completely overhaul the contemporary Western-dominated global financial architecture and rebuild it with different governance arrangement (Qobo & Soko, 2015). On the one hand, the creation of the NDB serves the purpose of increasing the members' voices and influence. On the other hand, the BRICS are not completely supplanting the existing institutions, in the sense that they still take part on them and dialogue with the process of globalization, realize market reforms to facilitate openness, and take part on international trade (Qobo & Soko, 2015).

One of the biggest constraints faced by the NDB is the several exchange reserve constraints faced by developing countries. In this context, the NDB falls short of a decisive role in the prevention and resolution of crisis, once their members are often impacted by severe volatility in international capital flows, and its challenges to the countries' stability (Biswas, 2015). Similarly, the NDB shows some degree of fragility when it comes to its credit score rating, especially when compared to its counterparts. For instance, the Asian Infrastructure Investment Bank (AIIB), created by China in a similar period, has a better rating mainly because of the difference in the risk associated with the BRICS members. In this sense, it is important to note that China outside the context of the BRICS has a smaller associated risk, which results in a comparatively better credit score of the AIIB in comparison to the NDB (Carvalho et al., 2015).

4.3 The NDB's sustainability strategy

The New Development Bank (NDB) has articulated its approach to sustainability through three foundational documents: (i) its inaugural General Strategy (2017–2021) (NDB, 2017a), (ii) an Environment and Social Framework, and (iii) a Sustainable Financing Policy Framework governing the issuance of green financial instruments. The General Strategy emphasizes member equality in corporate governance, sustainable infrastructure as a core focus, and the innovative intention to issue green bonds denominated in BRICS national currencies (Cooper, 2017). Together, these initiatives highlight the NDB's dual commitment to sustainability and Global South inclusivity.

Sustainable infrastructure investment is placed at the core of the operation of the NDB, as the General Strategy command that at least two-thirds of financing commitments are dedicated to this area. They define sustainable infrastructure as “infrastructure that incorporates economic, environmental, and social criteria in its design, building, and operation”, which shows an inclination towards sustainability framework to their projects (NDB, 2017a). This strategy goes in line with the objective of the NDB as a leader in developing countries’ sustainable infrastructure investment. Alongside, it incorporates product innovation in the context of green bonds denominated in BRICS national currencies (i.e., Chinese Panda Bonds), highlighting the NDB’s commitment towards the creation of a robust, green funding mechanism, apart from the core currencies-nexus.

The second document, the Environmental and Social Framework (NDB, 2017b), is structured into two parts. Part 1 outlines the bank’s Environmental and Social Policy guidelines for project operations, while Part 2 establishes Environmental and Social Standards, defining requirements for stakeholders engaged in the bank's activities. A key feature of this framework is its reliance on country-specific safeguard systems to implement projects, categorizing them into three risk levels A, B, and C—based on their environmental and socioeconomic impacts, with Category A being the riskiest. This framework ensures a balanced approach to risk management and sustainability.

The third document, the Sustainable Financing Policy Framework (NDB, 2020), outlines the bank’s guidelines for promoting sustainable infrastructure projects through green financial instruments. It is divided into two sections: (i) the objectives of the NDB's green strategy and (ii) an overview of eligible sectors for green and social bonds, along with impact indicators to assess specific projects. This framework represents a significant improvement by establishing more precise mechanisms to measure impact. However, its reliance on a de-risking paradigm limits its ability to address the broader risks associated with green finance, such as its potential to reinforce currency and ecological hierarchies.

As identified in the mentioned documents, the NDB broadly claims to support mitigation and adaptation to climate change and the transition to low-carbon economies, both by means of adjusting its governance, orienting its investments and cross-cutting its operations with climate

risk-related considerations and sustainability criteria. For its 2022-2026 strategy, the NDB aims to dedicate 40% of its total volume of approvals to projects contributing to climate change mitigation and adaptation (NDB, 2022). However, the assessment of the extent to which the portfolio of projects can be ecologically transformative is beyond the scope of analysis of this paper, as that would demand an in-depth qualitative analysis of the project's goals and impacts. What can be briefly mentioned, however, is that a relevant number of the projects still operate within the traditional framing of resource-intensive and fossil-led development sectors⁶, as well as in-line with what was contested in regard to the green investment paradigm supporting the financialization of mega-infrastructure projects.

5. Project portfolio empirical analysis (methodology)

Since 2016, the NDB has been increasing its project portfolio. According to the latest General Strategy (NDB, 2022), within the wide spectrum of what entails operations of “infrastructure and sustainable development”, the projects are broadly classified in six areas⁷, namely (i) Clean energy and energy efficiency; (ii) Transport infrastructure; (iii) Water and sanitation; (iv) Environmental Protection; (v) Social infrastructure and (iv) Digital infrastructure. The NDB portfolio also classifies projects in a seventh area of (vii) Multiple Areas, although it is not specified in their general strategy what is the scope of this multiplicity.

(i) **Clean energy and energy efficiency** projects entail the deployment of clean and renewable energy at scales or the enhancing of efficiency in conventional energy systems (e.g. power transmission, distribution, and storage) through technological innovation, specifically mentioning not financing operations involving new coal-fired capacity for power generation (NDB, 2022).

(ii) **Transport and infrastructure** projects aim for the expansion of inter-city and intra-city transport networks and infrastructure for regional connectivity and mobility (NDB, 2022).

⁶ The transport and infrastructure area of operation, as an example, has projects that focus on the financing for low-emitting and energy efficient commercial vehicles, but that still operate within the fossil-fuel nexus (e.g. Shriram Finance Sustainable Transport Project and CNG/LNG eligibility criteria's).

⁷ In the context of the COVID-19 crisis, the bank also opened a new area of operation dedicated to emergency assistance. The operations in this area were expressive in terms of the number of resources implied, but nonetheless remains a contextual area of operation, and therefore will not be fully assessed in the context of this paper.

(iii) **Water sanitation** projects entail infrastructure and resource management for the end of the expansion of access to clean drinking water and adequate sanitation (NDB, 2022).

(iv) **Environmental protection** projects broadly support conservation and restoration of ecosystems – through the promotion nature-based solutions and better management of natural resources – aiming to “reverse or reduce the negative environmental impact of socioeconomic activities”, with the end goal of contributing to decouple economic growth from environmental degradation and pollution (NDB, 2022, p. 21). In the scope of environmental protection projects, the NDB also claims to consider financing “new and emerging technologies that can mitigate the impact of already accumulated or current emissions” (NDB, 2022, p. 21), in line with what is broadly conceptualized within the green economy agenda as carbon capture and storage (CCS) technologies (NDB, 2022).

(v) **Social infrastructure** projects are destined to the building of infrastructure that facilitates social services (e.g. schools, hospitals, affordable housing, cultural heritage sites, etc.) (NDB, 2022).

(vi) **Digital infrastructure** projects focus on the expansion and modernisation of national and international backbone digital infrastructure (e.g., overland and subsea cables, landing stations, telecom towers, base stations, and associated facilities) (NDB, 2022).

In the face of the considerable number of projects developed and the lack of a complete NDB database for the portfolio, we collected and organized the publicly available information at the bank’s platforms, to understand the nuances between the projects’ areas of operation, financing currency and country of implementation. Therefore, our database was constructed through web scraping techniques, gathering for each development project (i) the country of implementation (e.g. China), (ii) the project status (i.e. approved, completed, cancelled, proposed), (iii) the area of operation (e.g. Clean Energy, Energy Efficiency), (iv) the type of operation (i.e. sovereign or non-sovereign), the (v) the financing approval date, (vi) the current limit of NDB financing – that is, the amount funded by the NDB – and (vii) the currency used for the operation (e.g. USD, EUR, RMB).

The full portfolio of projects contains 137 projects, operating in China, Brazil, India, Russia, South Africa, Bangladesh and Egypt. For the analysis, we opted to exclude the projects classified under in the scope of “COVID-19 Emergence Assistance” (N=9), as well as the projects that were cancelled (N=13), by consequence maintaining all projects completed, approved and proposed between 2016-2024. With this specific selection, the final database contains 115 projects, split between different currencies – USD (67.8%), CHF (0.9%), EUR (7%), RMB (19.1%)⁸ and ZAR (5.2%) – and areas of operation – Clean energy and energy efficiency (%); Transport infrastructure; (iii) Water and sanitation; (iv) Environmental Protection; (v) Social infrastructure, (vi) Digital infrastructure and (vii) Multiple Areas.

In order to compare the projects more equitably, all projects were first brought to the latest projects present values in their respective currencies (Dollar, Renminbi, Rand, Euros, and Swiss Franc; December 2024), using each country’s specific Current Price Index⁹ (CPI), and then converted to dollars, using the December 2024 exchange rate. This process relied upon several databases including:

1. For the CPI: National Bureau of Statistics of China (RMB), Federal Reserve Bank of St. Louis (Euro and Dollar), Department of Statistics of the Republic of South Africa (ZAR), and the Swiss Federal Statistical Office (CHF).
2. For the conversion: Federal Reserve Bank of St. Louis (RMB), the online foreign exchange rate database of Xenon Laboratories (ZAR and CHF), the European Central Bank (Euro).

6. Results

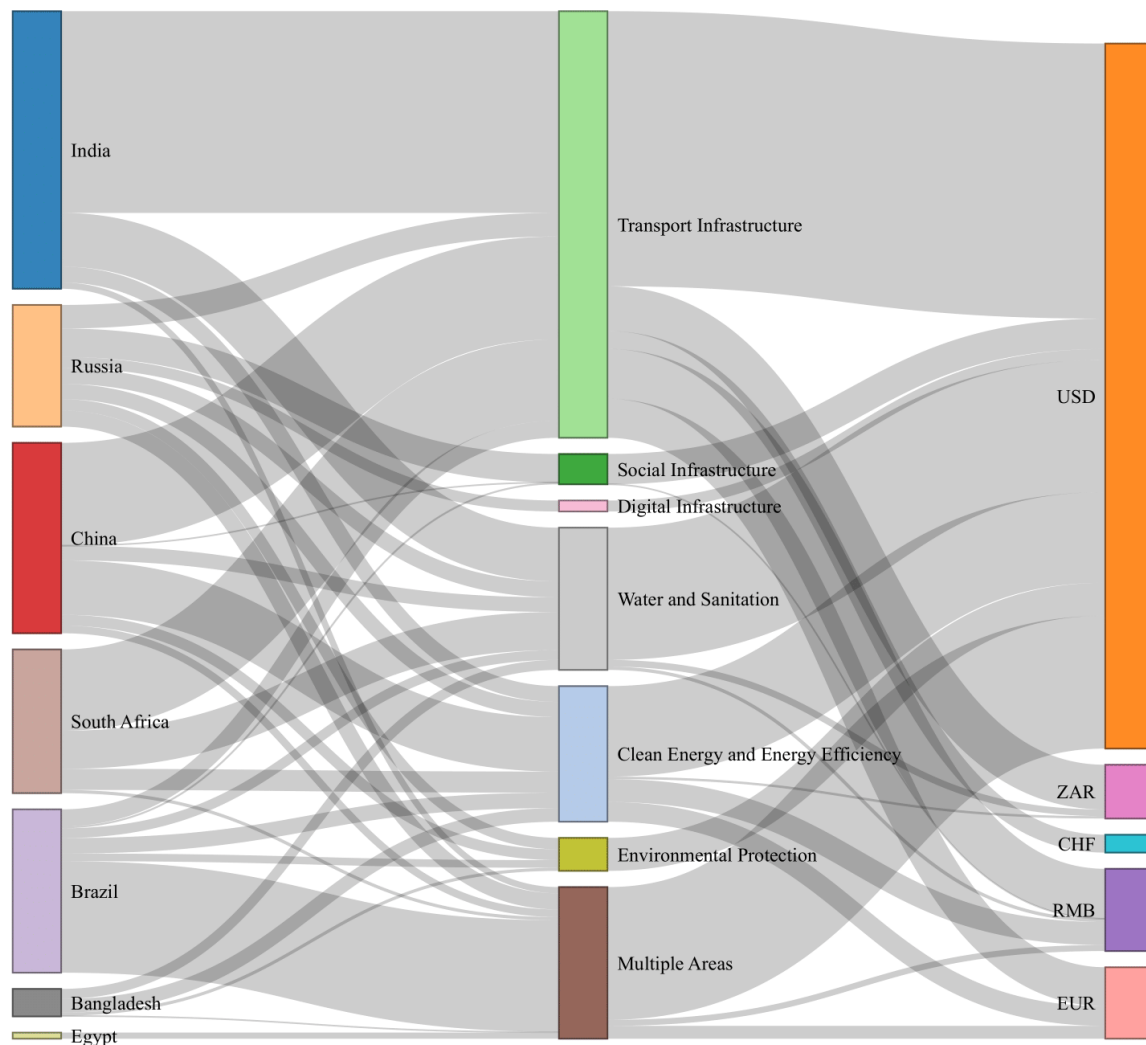
The left side of the diagram (**Figure 1**) give an overview of interrelations between the project’s host country and the area of implementation. It is clear that the original BRICS countries are more represented in the portfolio then other countries, and that broadly the biggest volume of investments is concentrated in transport infrastructure (45.85%). Although no country has

⁸ We substituted two projects identified with CNY to RMB, as they can be used interchangeably, and it would provide a clearer vision of the projects related to Chinese currency.

⁹ In the case of the Euro, a harmonized index of consumer prices for 19 countries in the Euro area was used

implemented projects in less than one area of operation (apart from Egypt, that has only one proposed project), there are some concentrations. While Russia has the most diverse structure of areas of operation, all other countries have areas of operation that overpower other areas within their own portfolio. While China and Brazil are both diversified, China stands out for the prominence of the volume destined to transport infrastructure (54.04%) and energy (28.59%), while Brazil is clearly focused in the multiple areas category (68.27%). The largest part of the volume of money invested in India is within transport infrastructure (72.67%) and, to a lesser extent, water and sanitation (19.36%), while in South Africa the relevance of transport infrastructure (56.59%) is followed by both water and sanitation (26.52%) and clean energy operations (14.66%).

Figure 1 – Sankey Diagram of volume and distribution of the project portfolio (adjusted in current USD), by country of implementation, operation area, and currency (2016-2024)

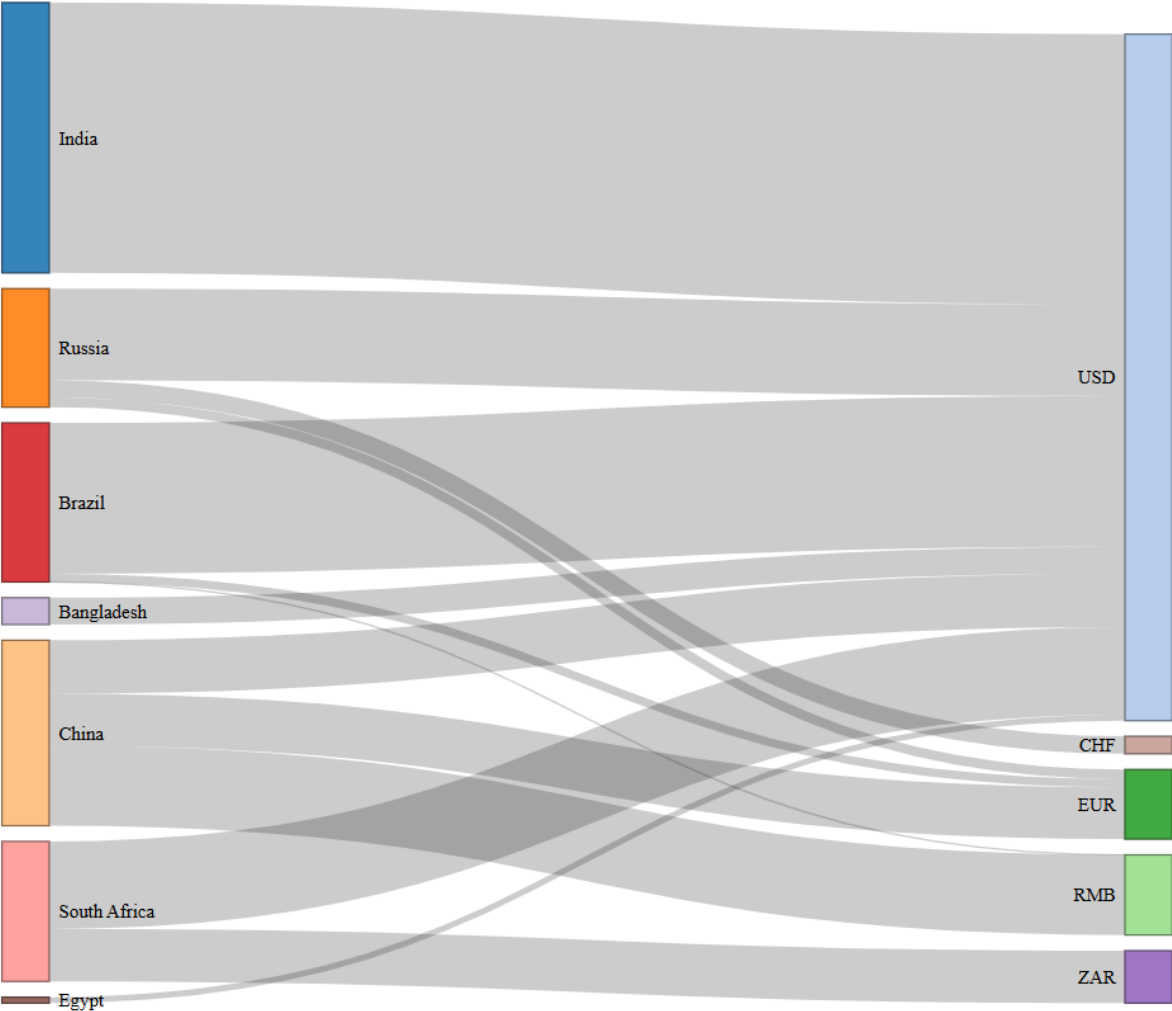


Authors' elaboration

The right side of the diagram give us a different picture, in which we can assess the interplay between the volume directed to each area of operation and the currency used. The dollar overwhelmingly dominates the portfolio, both in terms of total share (75.77%), and by being the only currency used across all areas of operation, with an equally relevant share in each. Notably, all resources for digital infrastructure and environmental protection projects were in dollars. The areas of transport infrastructure and clean energy are the only areas in which the other currencies gain a certain level of relevance: in the former, there is a relatively balanced presence of the ZAR,

CHF, RMB and EUR, while in the latter only the presence of the RMB and the EUR are pronounced.

Figure 2 – Sankey diagram of project’s portfolio volume and distribution (adjusted in current USD), by country of implementation and currency (2016-2024)

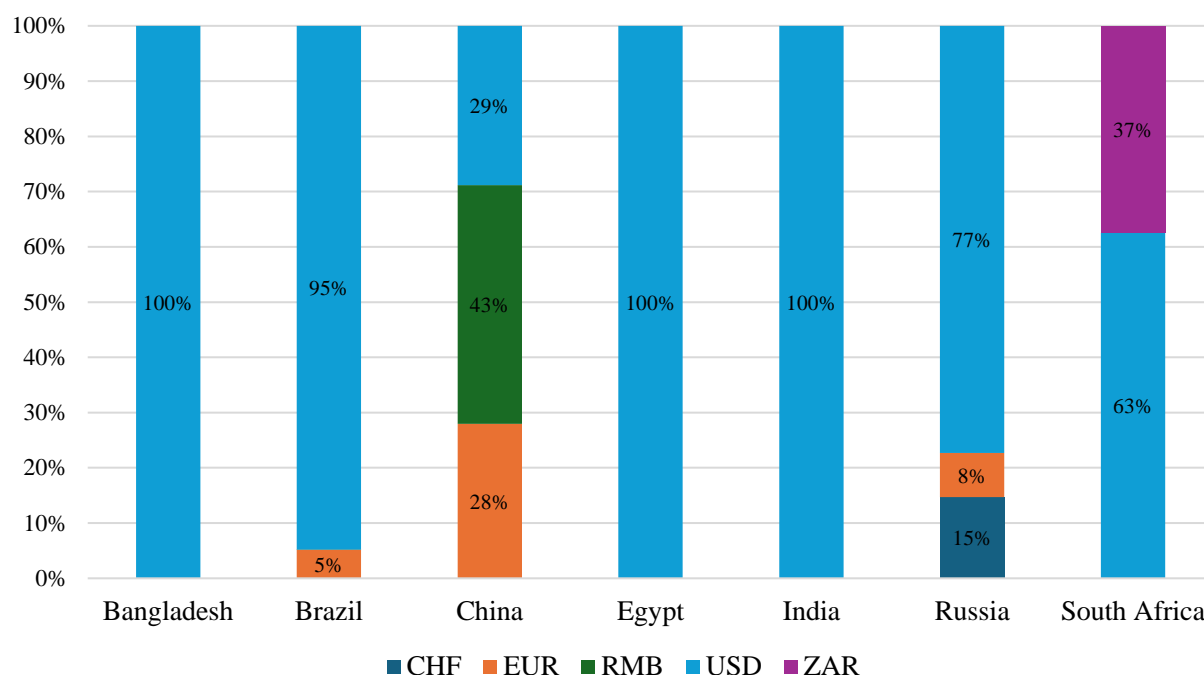


Authors’ elaboration

The second diagram (**Figure 2**) closes the gap. Apart from China, all the other countries were majorly financed in US dollars, with the highlight of the fact that this is the case for the total amount of investments directed to India, Egypt and Bangladesh. In addition, both ZAR and RMB are employed in the context of their own national sovereignty, apart from two projects in with the

RMB in Brazil. The volume of investments in EUR were majorly destined to projects in China (75.50%), with minor allocations to Brazil (11.88%) and Russia (13.62%).

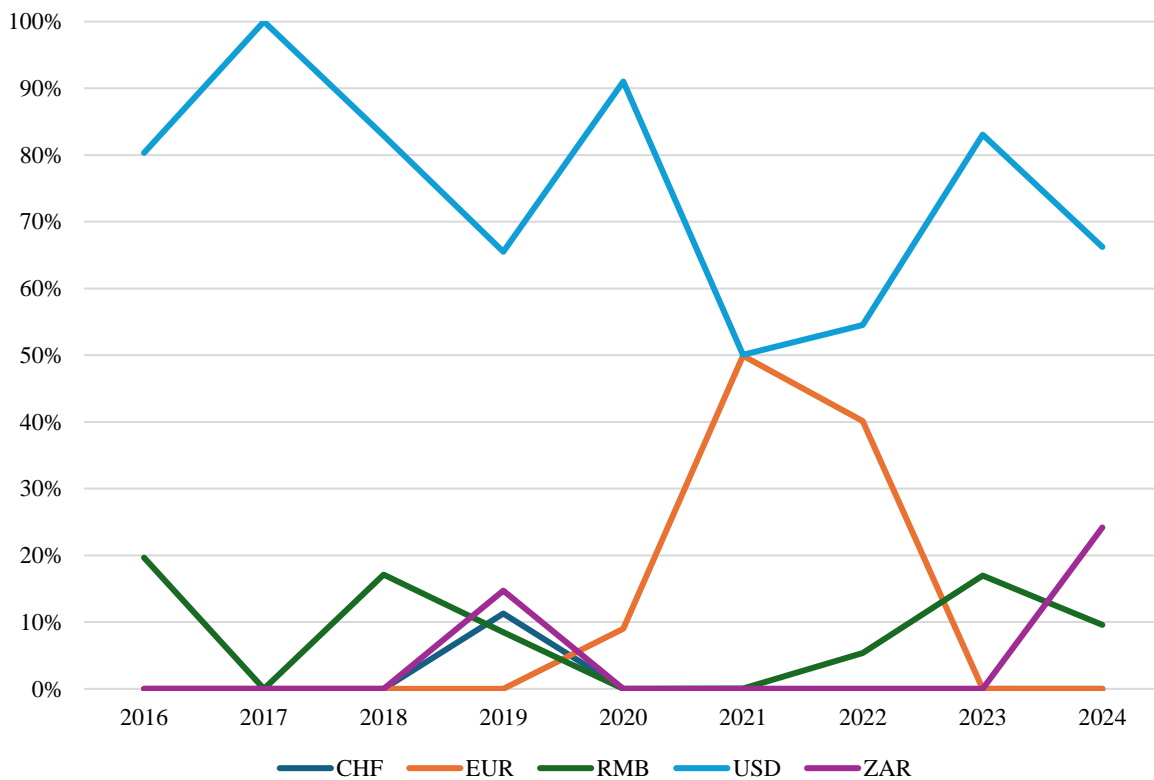
Figure 3 – Share of currencies in total funding of projects, per country (full period)



Authors' elaboration.

On **Figure 3**, it is possible to observe the differences in the utilization of specific currencies per country. Most of the countries do not significantly conduct projects in peripheral currencies, being almost strictly dominated by the dollar (Bangladesh, Egypt, and India), or a basket of core currencies like the dollar, euro, and francs (Brazil and Russia). However, the last two countries (China and South Africa) deserve a bigger attention. In the case of China, 43% of the projects are being financed in renminbi. Now in the case of South Africa, 37% of the projects are being financed in rand. This shows an important utilization of their domestic currency.

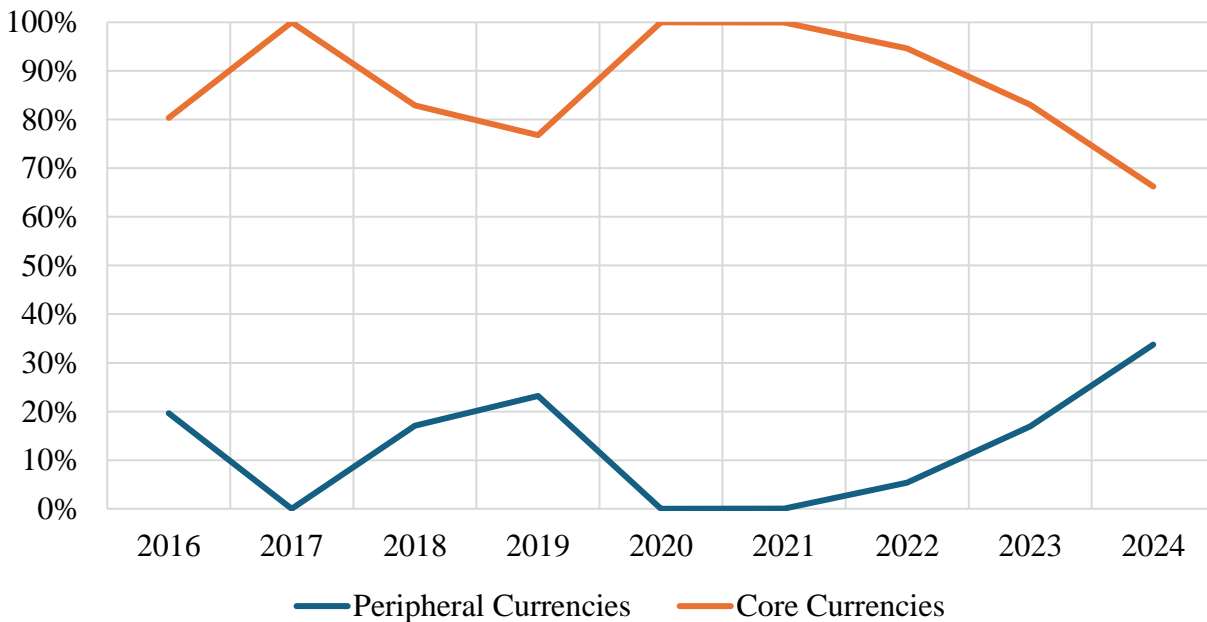
Figure 4 - Share of currencies in total funding of projects, time series (2016-2024)



Authors' elaboration

On **Figure 4**, a temporal dimension in utilization of the currencies is introduced. It is clear that the dollar was and still is the most utilized currency for the totality of the portfolio. In spite of this, some other interesting trends can be observed. For instance, the Covid-19 crisis promoted the utilization of euros in the projects and declined the utilization of dollars, which was reversed by 2023 onwards. Furthermore, the Covid-19 crisis (and its instabilities) clearly impacted on the utilization of peripheral currencies in the NDB's projects, even in the context of the renminbi.

Figure 5 – Percentage (%) of utilization of core- and peripheral-currencies (2016-2024)



Authors' elaboration

In **Figure 5**, we clustered dollar, euro, and franc (considered in this analysis as core currencies), and renminbi and rands (considered in this analysis as peripheral currencies). This graph shows a very interesting trend that is essential for this paper's hypothesis. The NDB shows three interesting trends: pre-Covid, during Covid, and post-Covid. Before covid, the NDB shows a trend of decreasing utilization of core currencies *vis-à-vis* peripheral currencies, especially from 2017-2019. However, the huge sanitary, political, social, and economical shock observed during the Covid-19 crisis triggered most financial actors to escape from peripheral currencies and move towards core currencies. In this context, the NDB completely shifts its portfolio towards the utilization of core currencies (2020-2021). The post-Covid trend, however, is relatively similar to the pre-Covid one. It shows an increase utilization of peripheral currencies *vis-à-vis* core currencies from 2022-2024. In 2024, the highest percentage of peripheral currencies in the NDB's projects was achieved (33%). It is clear that the portfolio still has not completely shifted, but it shows an interesting trend and progress.

7. Discussion

Through the years of its existence, the NDB has not yet still not expressive in moving away from the dominant currency nexus, as most of the projects still operate under the USD – and to a minor extent the EUR and CHF. Although NDB’s strategy indicates the goal of increasing financing commitments in local currencies – with the end of mitigating foreign exchange hedging-related risks faced by borrowers throughout the duration of their projects – the bank also still regularly resorts to instruments denominated in USD, as well as other core currencies, to help meet its funding needs (NDB, 2022).

Whenever periphery currencies were used in the projects – RMB and ZAR – it was mostly in local currency context: that is, projects in China with RMB and projects in South Africa with ZAR. The exceptions are two non-sovereign projects in Brazil operating with the RMB: the recently approved CPFL’s¹⁰ Electricity Distribution Infrastructure Modernization Project and the proposed Serra da Palmeira Wind Power Project of China Three Gorges Brasil Energia S.A.

However, as seen previously in **Figure 5**, after 2022 there is a trend of increase in local peripheral currency lending Figure 3. The observed tendency overall aligns with NDB’s General Strategy for the years of 2022-2026, in which the bank aims to provide 30% of its total financing commitments in the national currencies of member countries (NDB, 2022). It is noteworthy that when it comes to an intra-members analysis, so far only China and South Africa were able to meet the percentual goal for financing in their own national currencies, as respectively 43% and 37% of the share of total volume of funding was made on their own currencies.

In this sense, the NDB should focus on countries that have the potential to follow a similar path. This is the case of Brazil and India, which have almost all its portfolio funding in dollar. The case of Russia is particular and complicated, since the country is currently facing sanctions due to the Russia-Ukraine conflict, which made most of the projects put in standby. The other countries that have projects in the NDB, i.e., Bangladesh and Egypt, have all their portfolio funding in dollar. This could represent an important frontier to increase funding in their own currencies or even in other BRICS countries’ currencies.

¹⁰ CPFL is a Brazilian energy company that sold its shareholding control (54.64%) to the Chinese energy giant State Grid in 2017

8. Conclusion

This paper investigated the role of the NDB in moving away from the current global currency hierarchy (Palludeto & Abouchedid, 2016), while fostering an ecological transition. In order to do so, it investigated the institutionalization of ‘green economy’ agendas and climate change political imperatives, as they have been shaping global economic policies. This agenda, conceptualized as a “new growth strategy,” seeks to decouple growth from resource use and emissions (Brand & Lang, 2019), by promoting decarbonization and climate adaptation and mitigation efforts, with a particular highlight to the development of resilient and ‘sustainable’ infrastructure. In this context, despite of a lack of consensus on its precise definition, ‘green finance’ has emerged as a key tool for the steer this transition, as it incorporates climate risks into financial decision-making to enhance financial systems resilience.

In section 2, the paper discussed the contemporary alternatives to “green finance”. Overall, it is highlighted that a market-based neoliberal approach reliant on the internalization of environmental costs through the pricing of nature and de-risking strategies is insufficient to fully assess the multidimensional, exponential, and cumulative challenges of the ecological crisis (Magalhães, 2021; Santos, 2023; Spash, 2015). Furthermore, the post-Keynesian reformist view highlights the importance of the state, coordination, finance, and missions (Duit, 2016; Mazzucato, 2015) in this process but also fails to tackle the structural problems in the capitalist globalized world (Magalhães, 2021). In this sense, only a transformative approach that tackles global imbalances and ecological contradictions can fully promote an equitable and sustainable solution to the ecological crisis (Althouse & Svartzman, 2022).

Accordingly, in section 3 the paper discussed three hierarchies in the capitalist society: production, currency, and ecological. These hierarchies are embedded in capitalism, which generates and sustains core and periphery dynamics that reproduce underdevelopment through the process of exploitation (Frank, 1966; Furtado, 1965; Prebisch, 1949). On the same line, the production hierarchy is based on colonization and specialization, bringing nefarious consequences to the periphery’s productivity, technology, and diversification, which promote stagnation and volatility (Porcile & Torres, 2024). Moreover, the currency hierarchy creates subordination due to the differences attributed to the “store of value” capability of peripheral money, which results in lower liquidity, higher borrowing costs, higher perception of risk, which promote instability and

dependency (Althouse & Svartzman, 2022; Oliveira & De Conti, 2022; Palludeto & Abouchedid, 2016). Lastly, the environmental hierarchy is created by and reinforced upon the first two hierarchies. It creates pressures to extract resources (Althouse and Svartzman, 2022), which generates pollution and resource exhaustion in the context of outsourcing and offshoring through “global pollution chains” (Althouse et al., 2023; Duan & Jiang, 2021).

In section 4 the paper discussed the emergence of the NDB as a financial institution rooted within peripheral economies cooperation and its centrality for the development of alternative financing pathways that can address the challenges derived from structural hierarchies’ constraints. Its innovations, such as local currency lending and tailored assistance, aim to mitigate dollar dependency and foster financial resilience (De Conti et al., 2019; Dafe et al., 2018; NDB, 2022; Suchodolski & Demeulemeester, 2018). Yet, the NDB’s transformative potential remains limited due to the high volatility of the member’s capital flows, and their lower credit ratings compared to other MDBs like the AIIB (Carvalho et al., 2015; Biswas, 2015).

Although the NDB broadly claims to support mitigation and adaptation to climate change and the transition to low-carbon economies – for instance by cross-cutting its operations with climate risk-related considerations and sustainability criteria, prioritizing efficiency technologies to reduce GHG emissions, or aligning with NDC goals – a relevant number of the projects still operate within the traditional framing of resource-intensive and fossil-led development sectors. The transport and infrastructure area of operation, as an example, has projects that focus on the financing for low-emitting and energy efficient commercial vehicles, but that still operate within the fossil-fuel nexus (e.g. Shriram Finance Sustainable Transport Project and CNG/LNG eligibility criteria’s).

The project portfolio empirical analysis reveals that while the NDB has made advances in supporting sustainable infrastructure, its operations remain largely embedded within the dominant currency nexus, with most financing still conducted in USD. Despite its strategic goal of increasing local currency lending, only China¹¹ and South Africa have significantly utilized their national

¹¹ The Chinese success should be understood in a broader framework of sovereign economic development, which the analysis needs to account. The literature already conceptualizes the renminbi as a currency of growing importance in the context of the Belt and Road Initiative (Horn et al., 2021; Horn et al., 2023), which has even entered the Special Drawing Rights of the IMF.

currencies, while other BRICS members and partner countries remain heavily reliant on core currencies. However, the observed increase in the use of peripheral currencies, particularly after 2022, signals a potential shift towards greater financial autonomy. This trend, if sustained and expanded to other member countries, could strengthen the NDB's role in reshaping global financial hierarchies. While challenges remain, the NDB has laid important groundwork for an alternative development finance model that, with further institutional and political commitment, could steer capital flows towards a just ecological transition.

References

- Acosta, A. (2013). Extractivism and neoextractivism: Two sides of the same curse. In M. Lang, D. Mokrani, & Rosa-Luxemburg-Stiftung (Eds.), *Beyond development: Alternative visions from Latin America* (1st ed., pp. 61–86). Transnational Institute.
- Alami, I., Alves, C., Bonizzi, B., Kaltenbrunner, A., Koddenbrock, K., Kvangraven, I., & Powell, J. (2021). *International financial subordination: A critical research agenda* (GPERC85). Greenwich Papers in Political Economy. University of Greenwich.
- Althouse, J., & Svartzman, R. (2022). Bringing subordinated financialisation down to earth: The political ecology of finance-dominated capitalism. *Cambridge Journal of Economics*, 46(4), 679–702. <https://doi.org/10.1093/cje/beac018>
- Althouse, J., Cahen-Fourot, L., Carballa-Smichowski, B., Durand, C., & Knauss, S. (2023). Ecologically unequal exchange and uneven development patterns along global value chains. *World Development*, 170, 106308. <https://doi.org/10.1016/j.worlddev.2023.106308>
- Babb, S., & Kentikelenis, A. (2018). International financial institutions as agents of neoliberalism. In D. Cahill, M. Cooper, M. Konings, & D. Primrose (Eds.), *The Sage handbook of neoliberalism*. SAGE.
- Biswas, R. (2015). *Reshaping the financial architecture for development finance: The new development banks* (LSE Research Online 61120). London School of Economics and Political Science.
- Bonnaizzi, B., Kaltenbrunner, A., & Powell, J. (2020). Subordinate financialization in emerging capitalist economies. In P. Mader, D. Mertens, & N. Van Der Zwan (Eds.), *The Routledge international handbook of financialization* (pp. 177–187). Routledge.
- Bonizzi, B., Kaltenbrunner, A., & Powell, J. (2022). Financialised capitalism and the subordination of emerging capitalist economies. *Cambridge Journal of Economics*, 46(2), 233–257. <https://doi.org/10.1093/cje/beac023>
- Botta, A. (2016). *The theoretical weaknesses of the expansionary austerity doctrine* (GPERC14446). Greenwich Papers in Political Economy. University of Greenwich.

Botta, A. (2018). The short- and long-run inconsistency of the expansionary austerity theory: A post Keynesian/evolutionist critique. *Journal of Evolutionary Economics*, 30, 143–147. <https://doi.org/10.1007/s00191-018-0567-3>

Bracking, S. (2009). *Money and power: Great predators in the political economy of development*. Pluto Press. <https://doi.org/10.2307/j.ctt183p82d>

Brand, U., & Lang, M. (2019). Green economy. In A. Kothari, A. Salleh, A. Escobar, F. Demaria, & A. Acosta (Eds.), *Pluriverse: A post-development dictionary* (pp. 56–58). Tulika Books.

Brand, U., Muraca, B., Pineault, É., Sahakian, M., Schaffartzik, A., Novy, A., Streissler, C., Haberl, H., Asara, V., Dietz, K., Lang, M., Kothari, A., Smith, T., Spash, C., Brad, A., Pichler, M., Plank, C., Velegarakis, G., Jahn, T., ... Görg, C. (2021). From planetary to societal boundaries: An argument for collectively defined self-limitation. *Sustainability: Science, Practice and Policy*, 17(1), 264–291. <https://doi.org/10.1080/15487733.2021.1940754>

Brand, U., & Wissen, M. (2018). *The limits to capitalist nature: Theorizing and overcoming the imperial mode of living*. Rowman & Littlefield.

Brand, U., & Wissen, M. (with Danso-Dahmen, L.). (2021). *The imperial mode of living: Everyday life and the ecological crisis of capitalism* (B. Jungwirth, Ed.; Z. Murphy King, Trans.). Verso. (Original work published 2017)

Carneiro, R. (1999). Globalização financeira e inserção periférica. *Economia e Sociedade*, 13, 57–92.

Carvalho, C. E., de Freitas, W. D., de Godoy, L. P. C., & Gomes, N. F. (2015). O banco e o arranjo de reservas do BRICS: Iniciativas relevantes para o alargamento da ordem monetária e financeira internacional. *Estudos Internacionais: Revista De Relações Internacionais Da PUC Minas*, 3(1), 45–70. <https://doi.org/10.5752/P.2317-773X.2015v3n1p45>

Carvalho, F. J. C. (2016). In this 'it'? An outline of a theory of depressions. *Brazilian Journal of Political Economy*, 36, 451–469.

Chorev, N. (2018). Neoliberalism and supra-national institutions. In D. Cahill, M. Cooper, M. Konings, & D. Primrose (Eds.), *The Sage handbook of neoliberalism*. SAGE.

- Cooper, A. F. (2017). The BRICS' New Development Bank: Shifting from material leverage to innovative capacity. *Global Policy*, 8(3), 275–284. <https://doi.org/10.1111/1758-5899.12456>
- Dafe, F., Essers, D., & Volz, U. (2018). Localising sovereign debt: The rise of local currency bond markets in sub-Saharan Africa. *The World Economy*, 41(12), 3295–3314. <https://doi.org/10.1111/twec.12624>
- De Conti, B. (2011). *Les politiques de change et monétaire : Les dilemmes affrontés par des pays à monnaies périphériques* [Doctoral thesis, Université Paris 13 and University of Campinas].
- De Conti, B. M., Deus, L. N., & Terra, F. H. B. (2019). O Banco dos BRICS e sua potencial influência sobre as assimetrias do sistema monetário e financeiro internacional. *Geosul*, 34(70), 13–33. <https://doi.org/10.5007/2177-5230.2019v34n70p13>
- Dorning, C., Hornborg, A., Abson, D. J., Von Wehrden, H., Schaffartzik, A., Giljum, S., Engler, J.-O., Feller, R. L., Hubacek, K., & Wieland, H. (2021). Global patterns of ecologically unequal exchange: Implications for sustainability in the 21st century. *Ecological Economics*, 179, 106824. <https://doi.org/10.1016/j.ecolecon.2020.106824>
- Duan, Y., & Jiang, X. (2021). Pollution haven or pollution halo? A Re-evaluation on the role of multinational enterprises in global CO2 emissions. *Energy Economics*, 97, 105181. <https://doi.org/10.1016/j.eneco.2021.105181>
- Duggan, N., Azalia, J. C. L., & Rewizorski, M. (2022). The structural power of the BRICS (Brazil, Russia, India, China and South Africa) in multilateral development finance: A case study of the New Development Bank. *International Political Science Review*, 43(4), 495–511. <https://doi.org/10.1177/01925121211048297>
- Duit, A. (2016). The four faces of the environmental state: Environmental governance regimes in 28 countries. *Environmental Politics*, 25(1), 69–91. <https://doi.org/10.1080/09644016.2015.1077619>
- Eichengreen, B., & Hausmann, R. (1999). *Exchange rates and financial fragility* (NBER Working Paper 7418). National Bureau of Economic Research. <https://doi.org/10.3386/w7418>
- Frank, A. G. (1966). The development of underdevelopment. *Monthly Review*, 18(4), 17–31. https://doi.org/10.14452/MR-018-04-1966-08_3

- Fritz, B., de Paula, L. F., & Prates, D. M. (2018). Global currency hierarchy and national policy space: A framework for peripheral economies. *European Journal of Economics and Economic Policies: Intervention*, 15(2), 208–218. <https://doi.org/10.4337/ejeep.2018.02.11>
- Furtado, C. (1965). Development and stagnation in Latin America: A structuralist approach. *Studies in Comparative International Development*, 1(11), 159–175. <https://doi.org/10.1007/BF02800594>
- Gabor, D. (2021). The Wall Street Consensus. *Development and Change*, 52(3), 429–459. <https://doi.org/10.1111/dech.12645>
- Haas, T., Syrovatka, F., & Jürgen, I. (2022). The European Green Deal and the limits of ecological modernisation. *Culture, Practice & Europeanization*, 7(2), 247–261. <https://doi.org/10.5771/2566-7742-2022-2-247>
- Hickel, J., Dorninger, C., Wieland, H., & Suwandi, I. (2022). Imperialist appropriation in the world economy: Drain from the global South through unequal exchange, 1990–2015. *Global Environmental Change*, 73, 102467. <https://doi.org/10.1016/j.gloenvcha.2022.102467>
- Hickel, J., Hanbury Lemos, M., & Barbour, F. (2024). Unequal exchange of labour in the world economy. *Nature Communications*, 15(1), 6298. <https://doi.org/10.1038/s41467-024-49687-y>
- Horner, R., Schindler, S., Haberly, D., & Aoyama, Y. (2018). Globalisation, uneven development and the North–South ‘big switch.’ *Cambridge Journal of Regions, Economy and Society*, 11(1), 17–33. <https://doi.org/10.1093/cjres/rsx026>
- Horn, S., Reinhart, C. M., & Trebesch, C. (2021). China’s overseas lending. *Journal of International Economics*, 133, 103539. <https://doi.org/10.1016/j.jinteco.2021.103539>
- Horn, S., Reinhart, C. M., & Trebesch, C. (2023). *China as an international lender of last resort* (NBER Working Paper 31105). National Bureau of Economic Research. <https://doi.org/10.3386/w31105>
- Kaltenbrunner, A. (2015). A post Keynesian framework of exchange rate determination: A Minskyan approach. *Journal of Post Keynesian Economics*, 38(3), 426–448. <https://doi.org/10.1080/01603477.2015.1065675>

Klingler, M., Ameli, N., Rickman, J., & Schmidt, J. (2024). Large-scale green grabbing for wind and solar photovoltaic development in Brazil. *Nature Sustainability*. Advance online publication. <https://doi.org/10.1038/s41893-024-01346-2>

Larsen, M. (2024). How to resist the Wall Street Consensus: The maneuverability of a Vietnamese green state within international financial subordination. *Review of International Political Economy*. Advance online publication. <https://doi.org/10.1080/09692290.2024.2414977>

Libânio, G. (2020). Cardim de Carvalho and the Post-Keynesians on fiscal policy: The economic consequences of austerity. *Revista de Economia Contemporânea*, 24, e242429. <https://doi.org/10.1590/198055272429>

Magalhães, N. (2021). The green investment paradigm: Another headlong rush. *Ecological Economics*, 190, 107209. <https://doi.org/10.1016/j.ecolecon.2021.107209>

Mazzucato, M. (2015). The green entrepreneurial state. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2744602>

Mehra, M. K., & Azharuddin, Sk. Md. (2023). Economic growth, trade and investment trends in BRICS. In *Locating BRICS in the global order: Perspectives from the Global South* (1st ed.). Routledge. <https://doi.org/10.4324/9781003148074>

Molinari, A., & Ceballos, R. (2024). *Analysing the New Development Bank's core objectives (2016-2022)*. APRI - Africa Policy Research Institute. <https://doi.org/10.59184/sa.053>

Moore, J. W. (2016). The rise of the cheap nature. In J. W. Moore (Ed.), *Anthropocene or Capitalocene? Nature, history, and the crisis of capitalism* (pp. 1–11). PM Press.

Moreno, C. (2013). Las ropas verdes del rey La economía verde: Una nueva fuente de acumulación primitiva. In E. Lander & Rosa-Luxemburg-Stiftung (Eds.), *Alternativas al capitalismo colonialismo del siglo XXI* (1st ed., pp. 117–134). Abya Yala.

Musthaq, F. (2021). Dependency in a financialised global economy. *Review of African Political Economy*, 48(167), 448–465. <https://doi.org/10.1080/03056244.2020.1857234>

NDB - New Development Bank. (2017a). *NDB's first general strategy: 2017–2021*. <https://www.ndb.int>

NDB - New Development Bank. (2017b). *Environment and social framework*. <https://www.ndb.int>

NDB - New Development Bank. (2020). *Sustainable financing policy framework governing green financial instruments*. <https://www.ndb.int>

NDB - New Development Bank. (2022). *Scaling up development finance for a sustainable future—New Development Bank General Strategy for 2022-2026*. https://www.ndb.int/wp-content/uploads/2022/07/NDB_StrategyDocument_eVersion_07.pdf

Ocampo, J. A. (2017). Commodity-led development in Latin America. *Revue Internationale de Politique de Développement*, 9, 51–76. <https://doi.org/10.4000/poldev.2354>

Oliveira, É. A., & De Conti, B. (2022, October 20–22). *The international division of finance: Reassessing the peripheral condition in a financialised capitalism* [Conference presentation]. 26th Annual Conference of the Forum for Macroeconomics and Macroeconomic Policies (FMM), Berlin, Germany.

Oman, W., Salin, M., & Svartzman, R. (2024). Three tales of central banking and financial supervision for the ecological transition. *WIREs Climate Change*, 15(3), e876. <https://doi.org/10.1002/wcc.876>

Palludeto, A. W. A., & Abouchedid, S. C. (2016). The currency hierarchy in center-periphery relationships. In R. Desai (Ed.), *Research in political economy* (Vol. 30, pp. 53–90). Emerald. <https://doi.org/10.1108/S0161-72302015000030B003>

Patnaik, U., & Patnaik, P. (2016). *A theory of imperialism*. Columbia University Press. <https://doi.org/10.7312/patn17978>

Porcile, G., & Torres, M. (2024). The evolution of the ecological perspective in Latin American structuralism. In V. E. Schincariol (Ed.), *Environment and ecology in the history of economic thought: Reassessing the legacy of the classics* (1st ed., pp. 181–197). Routledge.

Ponsot, J.-F. (2016). The “four I’s” of the international monetary system and the international role of the euro. *Research in International Business and Finance*, 37, 190–196. <https://doi.org/10.1016/j.ribaf.2016.01.004>

Prates, D. M. (2002). *Crises financeiras nos países “emergentes”*: Uma interpretação heterodoxa [Doctoral thesis, University of Campinas].

Prebisch, R. (1949). Growth, disequilibrium and disparities: Interpretation of the process of economic development. In *Economic survey of Latin America, 1949* (E/CN.12/164/Rev.1, pp. 3–85). United Nations Economic Commission for Latin America and the Caribbean (ECLAC).

Qobo, M., & Soko, M. (2015). The rise of emerging powers in the global development finance architecture: The case of the BRICS and the New Development Bank. *South African Journal of International Affairs*, 22(3), 277–288. <https://doi.org/10.1080/10220461.2015.1089785>

Santos, A. C. (2023). Conceptualising state financialisation: From the core to the periphery. *New Political Economy*, 28(1), 142–154. <https://doi.org/10.1080/13563467.2022.2084520>

Spash, C. L. (2015). Bulldozing biodiversity: The economics of offsets and trading-in Nature. *Biological Conservation*, 192, 541–551. <https://doi.org/10.1016/j.biocon.2015.07.037>

Spash, C. L. (Ed.). (2017). *Routledge handbook of ecological economics: Nature and society*. Routledge.

Stockhammer, E. (2016). Neoliberal growth models, monetary union and the Euro crisis: A post-Keynesian perspective. *New Political Economy*, 21(4), 365–379. <https://doi.org/10.1080/13563467.2016.1115826>

Suchodolski, S. G., & Demeulemeester, J. M. (2018). The BRICS coming of age and the New Development Bank. *Global Policy*, 9(4), 578–585. <https://doi.org/10.1111/1758-5899.12600>

Svartzman, R., & Althouse, J. (2022). Greening the international monetary system? Not without addressing the political ecology of global imbalances. *Review of International Political Economy*, 29(3), 844–869. <https://doi.org/10.1080/09692290.2020.1854326>

Tahir, M., Ibrahim, H., Khan, B., & Ahmed, R. (2022). Foreign earnings repatriation: The effect of exchange rate volatility and the risk of expropriation. *Journal of Economic and Administrative Sciences*. Advance online publication. <https://doi.org/10.1108/JEAS-04-2022-0092>

Thirkell-White, B. (2006). The Wall-Street-Treasury-IMF complex after Asia: Neoliberalism in decline? In R. Robison (Ed.), *The neoliberal revolution: Forging the market state* (pp. 173–190). Palgrave Macmillan. https://doi.org/10.1057/9780230625235_11

Tricarico, A., & Sol, X. (2016). Re-building the world: The structural adjustment through mega-infrastructures in the era of financialization. *Development*, 59(1–2), 53–58. <https://doi.org/10.1057/s41301-017-0082-0>

Woolfenden, T., & Kushal, S. S. (2022). *The debt and climate crises: Why climate justice must include debt justice*. Debt Justice. <https://www.debtjustice.org.uk/wp-content/uploads/2022/10/Debt-and-the-Climate-Crisis-Briefing-October-2022-UPDATED2.pdf>