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Green Central Banking in the Russian Federation*

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1. INTRODUCTION

In recent years, the exacerbation of the impacts of climate change on natural capital, social structures, and economic systems has prompted central banks and financial regulatory authorities across various jurisdictions to intensify efforts to address the physical and transitional risks affecting financial institutions and the broader financial system. In this context, the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) was established in December 2017 to support climate risk management within the financial sector and facilitate its transition toward a sustainable economy. As of March 2024, the NGFS membership has expanded from eight countries at its inception to 134 central banks and financial regulatory authorities. The growing inclusion of central banks and financial regulatory authorities from both developed and emerging economies has resulted in more complex and multifaceted discussions within the NGFS.

Focusing on the Russian Federation (Russia)—one of the world’s largest energy-rich countries—its greenhouse gas (GHG) emissions, including carbon dioxide (CO₂), rank among the highest globally. When adjusted for economic size, Russia’s emissions per unit of GDP are also among the worst in the world. In response, the Central Bank of the Russian Federation (Bank of Russia) joined the NGFS in December 2019. Since then, Russia has been working on easing capital requirements for financial institutions that invest in or lend support to climate change measures, while also developing a roadmap for its climate commitments.

Although research specifically focusing on green central banking—particularly the response of central banks to climate change—has progressed rapidly in recent years, it remains an emerging field. In particular, there is currently limited research on this topic concerning emerging and developing countries, including Russia (see Section 2).

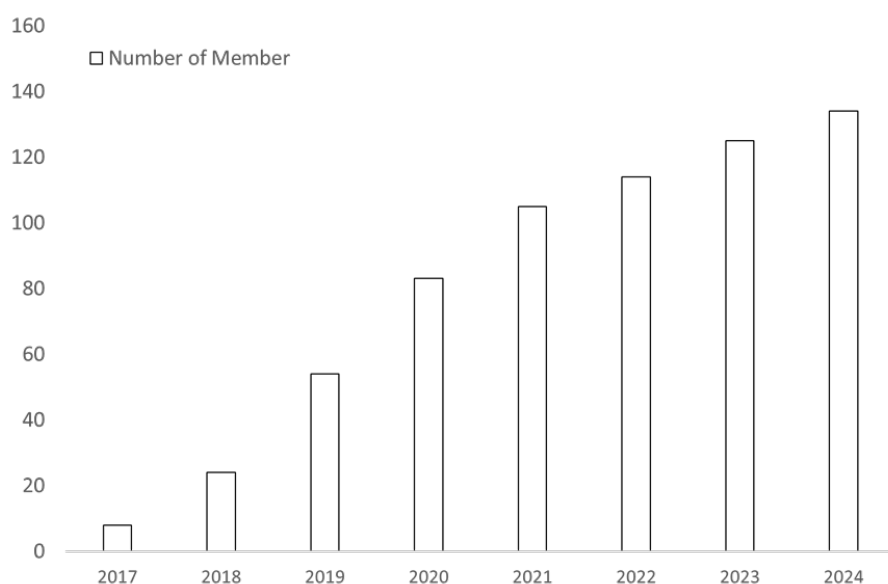
* This paper is a part of the research outcomes under the FY 2023 “Comprehensive Study on Slavic-Eurasia Region (Former Soviet Union and Eastern Europe)—Slavic Eurasia and the World Economy” and the FY 2024 Visiting Researcher Program “Research on Green Finance Market in Russia,” supported by the Slavic-Eurasian Research Center of Hokkaido University.

Notably, the Bank of Russia operates within a particularly distinctive political and economic context compared with other central banks. First, the European Union—Russia’s primary trading partner—is a global leader in advancing environmental initiatives and is actively pursuing decarbonization. This trend has not been favorable for the Russian oil and gas sector, which has historically been the backbone of the economy and a primary source of foreign currency earnings. Furthermore, economic sanctions imposed in response to recent conflicts have exacerbated these challenges, slowing economic growth and worsening the performance of the oil and gas sector. In this complex political and economic landscape, the Bank of Russia faces the critical task of balancing economic growth with efforts toward decarbonization. In this context, this paper aims to elucidate the current state of green central banking in Russia and examine the extent and manner in which greening might progress in the future.

This paper first traces the global trend of green central banking and summarizes how it has been analyzed to date as part of the literature review. It then describes the policy trends and modalities of the Bank of Russia from the perspectives of both green central banking approaches and the broader decarbonization of economic structures and systems. This perspective includes consideration of Russia’s historical context, which experienced “hot air” during its transition to a market economy, along with its current shift toward a greener economy. Finally, this paper seeks to forecast whether Russia’s central bank is likely to adopt greener practices, examining its prospects amid the current state of uncertainty.

2. OVERVIEW OF GREEN CENTRAL BANKING

As the impact of physical and transitional risks of climate change on financial institutions and the broader financial system has been acknowledged, central banks have endeavored to integrate climate change measures into their monetary policy frameworks. A representative example of this effort is the NGFS, described in the previous section. Launched at the One Planet Summit in Paris in December 2017, the NGFS is currently chaired by the Deutsche Bundesbank Executive Director Mauderer, with its secretariat based at the Banque de France. Membership in the NGFS continues to expand annually (Figure 1), fostering active discussions on monetary policy and systems in the context of climate change, with strong participation from central banks and financial supervisory authorities in emerging and developing countries.

Figure 1. The Number of NGFS Members

Note: As of March 2024.

Source: NGFS, “Membership” [<https://www.ngfs.net/en/about-us/membership>] (accessed 10 June 2024)

In January 2020, the Bank for International Settlements (BIS) published the Green Swan Report,¹ highlighting the significant impact climate change could have on financial and capital markets. Consequently, central banks in various jurisdictions are increasingly recognizing climate change as a potential destabilizing factor for the financial system and have begun to consider and implement countermeasures.

In the latter part of this section, we examine the trend of green central banking in major economies. The Bank of England (BOE), a founding member of the NGFS, has been addressing climate change since September 2015, when former Governor Carney highlighted the “Tragedy of the Horizon.”² In March 2021, the BOE introduced a new mandate for monetary policy management aimed at transitioning to a net-zero society. It subsequently greened its portfolio by considering climate change risks and the responses of investee companies when selecting corporate bond purchase targets. Additionally, since June 2021, the BOE has conducted hybrid stress tests (combining top-down and bottom-up approaches) on major domestic banks and insurance companies to assess their resilience to climate change.

1 Patrick Bolton, Morgan Després, Luiz Awazu Pereira da Silva, Frederic Samama, and Romain Svartzman, *The Green Swan: Central Banking and Financial Stability in the Age of Climate Change* (Basel: BIS, 2020).

2 BOE, “Breaking the Tragedy of the Horizon: Climate Change and Financial Stability (Speech by Mark Carney)” [<https://www.bankofengland.co.uk/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability>] (accessed 8 June 2024).

The European Central Bank (ECB) joined the NGFS in May 2018 and published the results of a strategic review of its monetary policy³ in July 2021. The report highlighted three key points: first, that climate change issues have profound implications for price stability; second, that the ECB would fully consider the impacts of climate change and the transition toward a decarbonized society; and third, that these factors would be integrated into monetary policy frameworks, including information disclosure, risk assessment, corporate purchase programs, and collateral frameworks. Since March 2022, the ECB has been conducting bottom-up climate stress tests on individual banks in the euro area.

The U.S. Federal Reserve Bank (FRB) joined the NGFS in December 2020 and began considering climate scenario analyses in line with the recommendations of the Financial Stability Oversight Council (FSOC)⁴ established under the Dodd-Frank Act. The results of the pilot scenario analysis were released in May 2024.

The next section examines how these phenomena related to green central banking have been analyzed to date.

3. LITERATURE REVIEW ON GREEN CENTRAL BANKING

The aforementioned Green Swan Report posits that “financial and climate stability could be considered as two interconnected public goods.”⁵ Research in this area has been rapidly accumulating in recent years. However, green central banking remains a nascent research field, with some studies arguing that central banks should not intervene in climate change issues, while others argue for the necessity of specific countermeasures by central banks.

Criticism of central banks incorporating climate factors into their monetary policy frameworks primarily stems from three perspectives. First, from the perspective of the central bank’s mandate and the role of monetary policy, concerns arise that expanding the mandate would undermine central bank independence, and that failure to achieve climate-related policy targets would increase reputational risk, thereby weakening the effectiveness of future monetary policy.⁶

3 ECB, “Monetary Policy Strategy Statement (8 July 2021)” [https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_statement.en.html] (accessed 8 June 2024).

4 FSOC, “Report on Climate-Related Financial Risk” [<https://home.treasury.gov/system/files/261/FSOC-Climate-Report.pdf>] (accessed 8 June 2024).

5 Bolton et al., *The Green Swan*, p. 2.

6 Lars Peter Hansen, “Central Banking Challenges Posed by Uncertain Climate Change and Natural Disasters,” *Journal of Monetary Economics* 125 (2022), pp. 1–15; Mervyn King, “Central Banks Are Risking Their Independence” [<https://www.bloomberg.com/opinion/articles/2021-08-23/central-banks-are-risking-their-independence-mervyn-king-dan-katz>] (accessed 10 June 2024).

Second, it has been argued that central banks are not suited to addressing climate change issues, as these are primarily fiscal policy challenges rather than monetary ones. Given that climate change is the greatest market failure in history,⁷ it should be internalized through fiscal policy approaches such as carbon pricing (carbon taxes and emissions trading) by governments, rather than through monetary policy by central banks.⁸

Third, central banks should not be involved in climate response due to the risk of market distortion, even though their Quantitative Easing (QE) programs are designed to avoid such effects.⁹ By prioritizing green investments or penalizing high-carbon sectors, central banks may inadvertently disrupt market forces and hinder its price discovery function, resulting in inefficient capital allocation. This could also lead to unintended consequences, such as the creation of asset bubbles in green industries (green bubbles) or the overly rapid acceleration of asset stranding.¹⁰

Conversely, many studies highlight the necessity for central banks to address climate change given its impacts on prices and the financial system,¹¹ as well as the role various social and economic actors must play in tackling the issue.¹² For instance, previous research on central banks in 133 countries and regions regarding the incorporation of climate factors into their mandates indicates that central banks should integrate climate factors into their monetary policy frameworks to achieve their existing mandates (price stability and financial stability),¹³ although only a limited number have explicitly done so at present. Notably, within their existing mandates, central banks often emphasize financial stability in their climate-related communications, which are frequently driven by pressure from pro-active governments that prioritize climate

7 Nicholas Stern, *Stern Review: The Economics of Climate Change* (London: Cambridge University Press, 2006), p. vii.

8 Anthony Smith, "Discussion of: "Central Banking Challenges Posed by Uncertain Climate Change and Natural Disasters" by Lars Peter Hansen," *Journal of Monetary Economics* 125 (2022), pp. 16–17.

9 Emanuele Campiglio, Yannis Dafermos, Pierre Monnin, Josh Ryan-Collins, Guido Schotten, and Misa Tanaka, "Climate Change Challenges for Central Banks and Financial Regulators," *Nature Climate Change* 8, no. 6 (2018), pp. 462–468.

10 Aziz Durrani, Masyitah Rosmin, and Ulrich Volz, "The Role of Central Banks in Scaling Up Sustainable Finance: What Do Monetary Authorities in the Asia-Pacific Region Think?" *Journal of Sustainable Finance & Investment* 10, no. 2 (2020), pp. 92–112.

11 Alan Roncoroni, Stefano Battiston, Luis Escobar-Farfán, and Serafin Martinez-Jaramillo, "Climate Risk and Financial Stability in the Network of Banks and Investment Funds," *Journal of Financial Stability* 54 (2021) [<https://doi.org/10.1016/j.jfs.2021.100870>].

12 Jouni Paavola, "Institutions and Environmental Governance: A Reconceptualization," *Ecological Economics* 63, no. 1 (2007), pp. 93–103.

13 Simon Dikau and Ulrich Volz, *Central Bank Mandates, Sustainability Objectives and the Promotion of Green Finance* (SOAS Department of Economics Working Paper, no. 222) (London: SOAS University of London, 2019), p. 6.

agendas.¹⁴ Central banks also face reputational risks due to the growing socio-political consensus among various stakeholders on the need for climate action.¹⁵

Another study focused on the ECB as a specific example, explaining that climate change responses should involve implementing targeted long-term operations.¹⁶ Additionally, from the perspective of market neutrality, it notes that the market is biased toward carbon-intensive industries,¹⁷ thereby increasing their competitiveness. Therefore, it is necessary for central banks to gradually adjust their purchase ratio—a so-called tilting approach—to eliminate this carbon bias.¹⁸

Furthermore, irrespective of whether central banks should address climate change, some studies have highlighted that their responses would be complex and challenging. For instance, central banks' approaches to climate change are complicated because the physical and transitional risks of climate change exhibit nonlinear dynamics¹⁹ and fat-tailed characteristics.²⁰ Consequently, the predictive accuracy of existing macroeconomic models declines, leading to potential reputational risk²¹ and necessitating the design of models that integrate both economic and climatic factors in a coordinated manner.²²

As observed, green central banking is a field in which research has been accumulating in both theoretical and empirical aspects in recent years. However, most research has concentrated on central banks in major advanced economies and their responses to climate change within their economic contexts,

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- 14 Martin Feldkircher and Viktoriya Teliha, "Speeches in the Green: The Political Discourse of Green Central Banking," *Energy Economics* 135 (2024) [<https://doi.org/10.1016/j.eneco.2024.107646>].
 - 15 Blondeel, Mathieu, Hielke Van Doorslaer, and Mattias Vermeiren, "Walking a Thin Line: A Reputational Account of Green Central Banking," *Environmental Politics* 33, no. 5 (2024), pp. 917–945.
 - 16 Jens van 't Klooster and Rens van Tilburg, "Targeting a Sustainable Recovery with Green TLTROs" [<https://www.datocms-assets.com/132494/1718118260-green-tltros.pdf>].
 - 17 Sini Matikainen, Emanuele Campiglio, and Dimitri Zenghelis, *The Climate Impact of Quantitative Easing* (London: Grantham Research Institute on Climate Change and the Environment, 2017), p. 5.
 - 18 Dirk Schoenmaker, "Greening Monetary Policy," *Climate Policy* 21, no. 4 (2019), pp. 581–592.
 - 19 Yannis Dafermos, *Climate Change, Central Banking and Financial Supervision: Beyond the Risk Exposure Approach* (SOAS Department of Economics Working Paper, no. 243) (London: SOAS University of London, 2021), p. 9.
 - 20 Frank Ackerman, *Worst-case Economics: Extreme Events in Climate and Finance* (London: Anthem Press, 2017), pp. 121–130.
 - 21 Chuanqi Chen, Dongyang Pan, Zhigang Huang, and Raimund Bleischwitz, "Engaging Central Banks in Climate Change? The Mix of Monetary and Climate Policy," *Energy Economics* 103 (2021) [<https://doi.org/10.1016/j.eneco.2021.105531>].
 - 22 Warwick McKibbin, Adele Morris, Peter Wilcoxon, and Augustus Panton, "Climate Change and Monetary Policy: Issues for Policy Design and Modelling," *Oxford Review of Economic Policy* 36, no. 3 (2020), pp. 579–603.

with the exception of policy analysis reports by international organizations that include central banks in some emerging and developing countries.²³

The analytical scope of previous studies has neglected the distinct challenges and opportunities faced by emerging and developing nations, whose economic, environmental, and geopolitical contexts significantly diverge from those of advanced economies. This omission not only risks perpetuating a fragmented understanding of green central banking but also undermines efforts to design inclusive strategies for climate-resilient financial systems, both in these countries and globally.

This trend is also evident in the case of green central banking in energy- and resource-rich countries, including Russia. For instance, research on the Bank of Russia in a green context is limited to a few studies that discuss general developments, such as its accession to the NGFS²⁴ and its efforts to design a system for ESG information disclosure in collaboration with governmental agencies.²⁵ These studies are part of the research on how Russian financial markets respond to climate change issues, with no direct analysis of green central banking in Russia.

An analysis of green central banking in Russia—where the energy resource sector plays a pivotal role in the national economy and maintains strong ties with the government—must carefully consider the interplay between environmental objectives, economic stability, and governmental relationships. Furthermore, external factors, such as ongoing economic sanctions, add an additional layer of complexity to examining its green central banking efforts. These unique dynamics require tailored analyses that go beyond the generalized frameworks often extrapolated from advanced economies in previous studies.

In this context, this study employs a political economy approach to elucidate the underlying reasons for the stagnation of green central banking in Russia, focusing on monetary and macroprudential policy perspectives, while considering factors such as the country's economic structure and its domestic and international political environment. This approach is crucial for addressing the research gap on this thematic issue and for fostering a truly holistic perspective of green central banking.

The following section briefly describes recent climate change developments in Russia and reviews the Bank of Russia's policy trends in relation to greening and, more broadly, the decarbonization of economic institutions and systems. We then examine the factors hindering the advancement of green central banking in Russia through a political economy lens.

23 Durrani et al., "The Role of Central Banks in Scaling Up Sustainable Finance," pp. 92–112.

24 Simon Dikau and Ulrich Volz, "Central Bank Mandates, Sustainability Objectives and the Promotion of Green Finance, *Ecological Economics* 184 (2021), pp. 1–20.

25 YAMAWAKI Dai 山脇大, "Kankyo Toshi to Joho Kaiji: Roshia ni okeru Genjo to Kadai no Kosatsu 環境投資と情報開示：ロシアにおける現状と課題の考察 [Environmental Investment and Information Disclosure: Current Status and Challenges in Russia]," *Roshia Touou Kenkyû* ロシア・東欧研究 52 (2023), pp. 1–18.

4. BANK OF RUSSIA UNDER A CHANGING CLIMATE

4-1. *Climate Change in Russia*

Before discussing the greening of the Bank of Russia, we briefly examine the current state of climate change in Russia and the unique challenges it faces. The impacts of climate change are already evident in Russia. In 2019, the average temperature was 2.7 degrees higher than the average temperature from 1961 to 1990, with global warming advancing at a rate approximately 2.5 times faster than the global average.²⁶ Consequently, natural disasters have become increasingly frequent across the country.

A notable example is the unprecedented flood of 2013 in Russia's Far Eastern Federal District, which inundated nearly one million square kilometers. This disaster was triggered by abnormal torrential rains that persisted from July to September of that year, causing the Amur River to overflow. The flooding affected approximately 170,000 residents, destroyed 13,667 homes and 504 public facilities, and inflicted damage to over 600,000 hectares of agricultural land, as well as more than sixty kilometers of transportation and energy infrastructure.²⁷

Moreover, the impacts of climate change extend beyond the economic consequences of natural disasters. In August 2016, a mass outbreak of anthrax occurred in Russia's Arctic region, specifically in the Yamal-Nenets Autonomous District. This outbreak was believed to have been caused by thawing permafrost, which exposed the carcasses of reindeer previously infected with anthrax, which subsequently spread to other animals.²⁸

However, until recently, climate change measures were not a high policy priority in Russia. This is largely attributable to Russia's historical experience of obtaining "hot air"²⁹ in the 1990s, during a period when international efforts to combat climate change were accelerating. Additionally, low interest in climate

26 Rossiiskaia gazeta, "Klimat v Rossii tepleet v 2.5 raza bystree, chem v mire" [<https://rg.ru/2020/03/12/klimat-v-rossii-tepleet-v-25-raza-bystree-chem-v-mire.html>] accessed 5 May 2024.

27 Boris Porfiriev, "Economic Effects of the Disastrous Flood in the Russian Far East in 2013," *Regional Research of Russia* 6, no. 3 (2016), pp. 274–280.

28 Popova A. Yu., Demina Yu. V., Ezhlova E. B., Kulichenko A. N., Ryazanova A. G., Maleev V. V., Ploskireva A. A., Dyatlov I. A., Timofeev V. S., Nechepurenko L. A., and Khar'kov V. V., "Outbreak of Anthrax in the Yamalo-Nenets Autonomous District in 2016, Epidemiological Peculiarities," *Problems of Particularly Dangerous Infections* 4 (2016), pp. 42–46.

29 These emissions allowances were not generated through any country's own efforts to reduce emissions but were instead a direct result of the economic downturn following the collapse of the Soviet Union and the transition to a market economy, which led to a decrease in greenhouse gas emissions.

change issues within Russian society,³⁰ the potential economic benefits of rising temperatures,³¹ and conflicts among relevant ministries—exacerbated by lobbying from carbon-intensive industries³²—have all been identified as factors impeding the formulation and implementation of climate change measures.

4-2. Bank of Russia's Responses to Climate Change

Here, we focus on the Bank of Russia's recent response to economic crises and climate change since Governor Nabiullina assumed office in June 2013,³³ with a particular focus on economic crises, which have had a significant on all socio-economic aspects of the country. Under Governor Nabiullina's leadership, financial liberalization³⁴ had been progressing in Russia until recently. However, the environment surrounding Russian financial markets and currency changed dramatically immediately following the annexation of Crimea in March 2014 and the invasion of Ukraine in February 2022.

30 The following studies have noted that climate change issues have been insufficiently covered in Russia's five major newspapers (Komsomol'skaja Pravda, Rossijskaja gazeta, Izvestija, Kommersant", Sovetskaja Rossija). Marianna Poberezhskaya, "Media Coverage of Climate Change in Russia: Governmental Bias and Climate Silence," *Public Understanding of Science* 24, no. 1 (2015), pp. 96–111; Dmitry Yagodin, "Climate Change Communication in Russia," *Oxford Research Encyclopedia of Climate Science* (2017), pp. 1–32.

31 The following studies have noted that climate change has positive effect on Russian economy at the sector level (especially the agricultural sector), as well as at the macroeconomic level (0.8 percent increase in GDP per capita with one degree temperature rise). Sebastian Acevedo, Mico Mrkaic, Natalija Novta, Evgenia Pugacheva, and Petia Topalova, "The Effects of Weather Shocks on Economic Activity: What are the Channels of Impact?" *Journal of Macroeconomics* 65 (2020) [<https://doi.org/10.1016/j.jmacro.2020.103207>]; Oleg Anisimov, "Challenges of the Chang-ing Climate: A Case Study of Russia," *Russian Analytical Digest*, no. 185 (2016), pp. 2–5.

32 The following studies have noted that various stakeholders hinder policy formulation and implementation on climate change in Russia: TABATA Shinichiro 田畑伸一郎, "Roshia: Enerugii Seisaku to Kiko Hendo Seisaku, ロシア :エネルギー政策と気候変動政策 [Russia: Energy Policy and Climate Change Policy]," in KAMEYAMA Yasuko and TAKAMURA Yukari, eds., *Kiko Hendo to Kokusai Kyochō: Takokukan Joyaku no Yukue 気候変動と国際協調 :多国間条約の行方* [Climate Change and International Cooperation: The Future of Multilateral Cooperation] (Tokyo: Jigaku-sha Shuppan, 2011), pp. 331–351; YAMAWAKI Dai 山脇大, "Roshia ni okeru Kiko Hendo Seisaku no Sutekuhoruda Bunseki ロシアにおける気候変動政策のステークホルダー分析 [A Stakeholder Analysis of Climate Change Policies in Russia]," *Roshia Touou Kenkyū ロシア・東欧研究* 49 (2020), pp. 126–143.

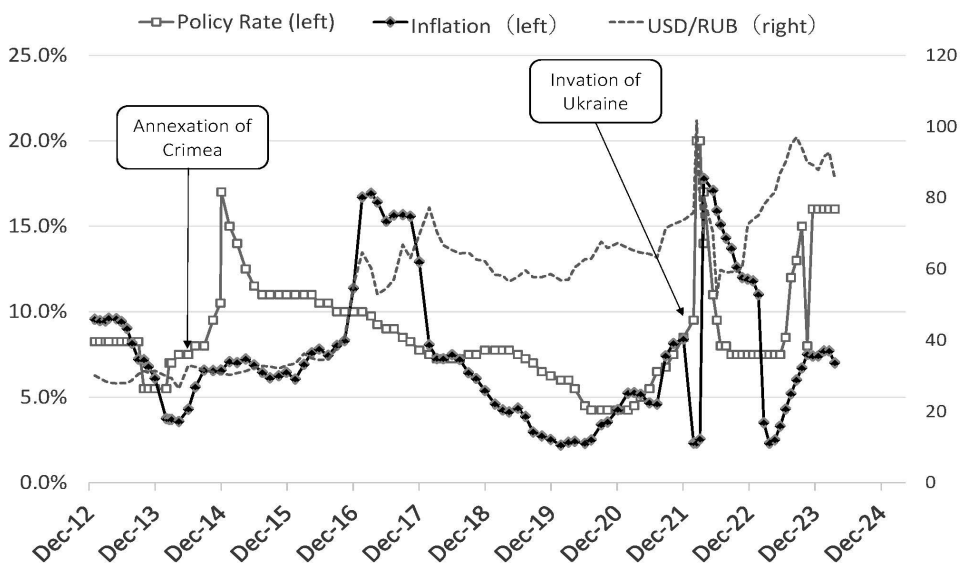
33 The following study provided a detailed description of Bank of Russia's response before and after the Lehman Shock in 2008–2009 from economic perspectives. KONNO Yugo 金野雄五, "Roshia ni okeru Kin'yu Kiki to Seisaku Taiou ロシアにおける金融危機と政策対応 [The Financial Crisis and Policy Responses in Russia]," *Hikaku Keizai Kenkyū 比較経済研究* 47, no. 1 (2010), pp. 39–50.

34 The most notable example is the end of the managed floating exchange rate regime—which set an allowable fluctuation band for the Russian ruble against a basket of currencies (the US dollar and the Euro)—on November 10, 2014, followed by the transition to a freely floating exchange rate regime.

The rise in import prices due to the sudden fall of the ruble, coupled with supply shortages stemming from restrictions on procuring goods from Western countries, created significant upward pressure on domestic prices. Although the Bank of Russia raised the policy interest rate from 9.5 percent to 20 percent just four days after the invasion began (February 28, 2022), it took approximately one year for inflation to return to single digits, while the ruble also depreciated sharply during this period.

Moreover, with foreign exchange reserves frozen due to sanctions, the Bank of Russia shifted from direct currency intervention to stabilizing the ruble through capital controls. Specifically, it required exporters to sell their foreign currency earnings,³⁵ lowered the reserve requirement ratio,³⁶ and restricted individuals from withdrawing foreign currency deposits exceeding \$10,000.³⁷ These emergency policy measures, combined with the government's response, have resulted in a significantly more stable financial environment compared with the period immediately following the invasion.

Figure 2: Changes in Policy Rate, Inflation, and Exchange Rate against the US Dollar in Russia



Source: Rosstat, "Official Statistics" [<https://eng.rosstat.gov.ru/folder/11335>] accessed 10 June 2024; Bank of Russia, "Financial Markets" [<https://www.cbr.ru/eng/statistics/finr/>] accessed 10 June 2024.

35 Interfakc, "S 28 fevralia eksporterov obiazhut prodavat' valiutu v razmere 80 percent ot vyrechki" [<https://www.interfax.ru/business/825077>] accessed 10 May 2024.

36 Gazeta.Ru, "TsB smiagchaet trebovaniia k obiazatel'nyh rezervam kreditnykh organizatsii" [<https://www.gazeta.ru/business/news/2022/03/02/17370871.shtml>] accessed 10 May 2024.

37 Bank of Russia, "Bank Russii vvodit vremennyi poriadok operatsii s narichnoi valiutoi" [<https://cbr.ru/press/event/?id=12738>] accessed 10 May 2024.

In this economic context, we examine the current state of the Bank of Russia's greening efforts. As described in the first section, the Bank of Russia joined the NGFS in December 2019 and has since been working to ease capital requirements for financial institutions supporting climate-related investments and loans, as well as to develop a roadmap for climate commitments.

The Bank of Russia first addressed climate risk in its Financial Stability Review (for the second to third quarter of 2019), published on December 2, 2019, stating that climate risk could significantly impact financial institutions' operations and financial stability.³⁸ The Bank also highlighted the need to conduct surveys and stress tests to gather disaster information and enhance the disclosure of climate-related financial information.

In the latter half of 2020, the Bank of Russia launched the Working Group on Financing for Sustainable Development, which established five subsidiary expert subcommittees³⁹ to conduct technical reviews and cross-sector discussions. In November 2021, the Bank published its Monetary Policy Guidelines (2022–2024),⁴⁰ identifying three climate change risks: the impact of climate change on price stability, physical risks from melting permafrost, and transition risks from declining global demand for fossil fuels (oil, natural gas, and coal). In the same month, it also issued its climate commitment and published a roadmap to improve climate governance and risk management.

4-3. Analysis of the Bank of Russia's Climate Commitment

Table 1 summarizes the climate commitment roadmap and its status as of June 2024.

Table 1. Climate Commitment Roadmap of the Bank of Russia and Its Status

No.	Actions	Timeline	Status
	Development of tools and infrastructure of the sustainable finance market and creation of conditions and opportunities for ESG transformation in response to investor and stakeholder demands, as well as external challenges		
1.	Participation in the development of sustainable taxonomies (green, adaptation and social projects)	2021–2022	<i>partially completed</i>
2.	Development of existing and introduction of new instruments for financing sustainable development in the Russian financial market (green, social, climate-transition, and SDG-linked instruments, as well as green project finance and green mortgage)	2021–2023	<i>in progress</i>

38 Bank of Russia, "Obzor financovoi ctabil'nosti (II-III kvartaly 2019 g)" [https://www.cbr.ru/Collection/Collection/File/25489/OFS_19-02.pdf] accessed 13 May 2024.

39 1. Financial markets/infrastructure, 2. Corporate governance/disclosure, 3. ESG/micro-prudence/macropudence, 4. Sustainability of central bank operations, 5. Carbon regulation and emissions trading schemes.

40 Bank of Russia, "Osnovnye napravleniia edinoi gosudarstvennoy denezhno-kreditnoy politiki na 2022 god i period 2023 i 2024 godov" [https://www.cbr.ru/about_br/publ/ondkpon_2022_2024/] accessed 13 May 2024.

3.	Improvement of corporate governance and information disclosure to promote sustainable development (considering ESG factors and sustainable development issues in corporate governance, developing recommendations, and eventually introducing requirements for ESG disclosure)	2021–2024	<i>partially completed</i>
Integration of ESG factors in financial market regulation to adapt the market to new risks			
4.	Stress testing of the potential impact of climate-related transition risks on major Russian exporters and the financial sector	regular basis	<i>in progress</i>
5.	Development of proposals, initiatives, and approaches for prudential regulation and supervision to assess and consider ESG risks by financial institutions, including the development of recommendations for financial intermediaries on the importance of integrating climate-related risks considerations into investment activities	2021–2024	<i>in progress</i>
6.	Creation of a database on the occurrence and impact of natural disasters (the risk-office) to enhance insurance for climate-related risks	2023	<i>in progress</i>
Implementation of sustainable development principles into the Bank of Russia's operational activities			
7.	Establishment of a corporate sustainable development policy (reducing resource consumption, increasing energy efficiency, implementing programs for employees in line with social UN SDGs etc.) and developing an in-house methodology for calculating greenhouse gas emissions	2021–2024	<i>in progress</i>
Creation of a comprehensive framework for accounting and trading of carbon emissions units within an organized trading infrastructure			
8.	Identification and elimination of barriers to issuing and trading carbon emissions units within the national carbon regulation framework	2021–2023	<i>in progress</i>
9.	Assessment of the possibility of using Russian financial market infrastructure for issuing and trading carbon units	2021–2023	<i>in progress</i>

Note: The column “Status” is based on author's investigation, as of June 2024.

Source: Bank of Russia, “Key tactical objectives of the Working Group on Sustainable Development Financing” [https://www.cbr.ru/eng/develop/ur/key_tact/] accessed 10 June 2024.

Regarding Commitment 1, in cooperation with other ministries and agencies, the Bank of Russia participated in the creation of a green taxonomy launched by VEB-RF⁴¹ in November 2021. The Russian Green Taxonomy is broadly aligned with international standards, particularly its energy criteria, which are established based on scientifically validated thresholds for electricity generation, similar to those outlined in the EU Taxonomy for Sustainable Activities. The original aim of the Russian Green Taxonomy was to promote green projects within Russia by issuing green bonds and attracting capital from foreign investors. However, this objective has been thwarted by Russia's disconnection from international financial markets due to recent economic sanctions. This

41 Russian state company on development corporation and investment, formerly called Vnesheconombank.

setback is also evidenced by delays in developing a sustainable taxonomy that includes social and other aspects.

Regarding Commitment 2, instruments such as green bonds and climate-transition financing have been introduced by several domestic companies, including Russian Railways and Sberbank. However, they remain nascent and extremely small-scale compared to other economies. The lack of comprehensive regulatory incentives and limited market awareness have constrained the broader adoption of these financial instruments. This point will be analyzed in detail in the following subsection, particularly in relation to one of the central bank's key tools: "monetary policy."

Regarding Commitment 3, the Bank of Russia has issued a methodology for public joint-stock companies and issuers to develop transition plans for sustainable development and climate change. This aims to assist Russian companies in transitioning toward a low-carbon economy and maintaining global competitiveness. However, disclosure of non-financial information has been delayed, as the Russian government granted certain exemptions to companies from their financial and non-financial information disclosure obligations to minimize the costs and risks associated with responding to sanctions on domestic companies. This issue will be considered in the Conclusion section as part of the future prospects for green central banking in Russia.

Regarding Commitment 4, the Bank of Russia conducted a climate stress test on the banking sector, analyzing systemically important credit institutions (SICI) individually and other banks collectively, with some findings published in February 2024.⁴² The results revealed significant potential risks to the banking sector if the economy fails to adapt to climate change and if carbon-intensive companies remain unchanged. However, the scope of this stress test did not extend to non-financial sectors, although it was indicated in the commitment. The absence of energy companies—key contributors and major exporters in the Russian economy—renders the stress test notably incomplete in its assessment framework.

Regarding Commitment 5, although the guidelines on responsible investment for institutional investors were formulated before the commitment was established in 2020, no significant progress has been observed since then. Efforts to incorporate these risks into prudential regulation are still underway; however, this regulatory initiative has been delayed due to the domestic economic downturn caused by international economic sanctions. This point will be also analyzed in detail in the following subsection, in relation to the other key tool of central banks: "macroprudential policy."

42 Bank of Russia, "Stress-testirovanie perekhodnykh klimaticheskikh riskov: predvaritel'nye otsenki" [https://www.cbr.ru/Content/Document/File/158608/info_07022024.pdf] accessed 13 May 2024.

Regarding Commitment 6, the creation of a centralized database for natural disaster impacts, envisioned as a “risk office,” has faced delays similar to other commitments. However, this commitment falls outside the central bank’s expertise and appears to be primarily supportive of initiatives led by other ministries. In this sense, the annual national reports published by the Russian Ministry of Emergency Situations⁴³ provide data on natural disasters across federal entities. However, these reports primarily focus on large-scale disasters and lack comprehensive detail. This limits a more nuanced understanding of the broader spectrum of natural disasters and their impacts nationwide. Cooperation between the Bank of Russia and relevant institutions in this area has not been observed yet.

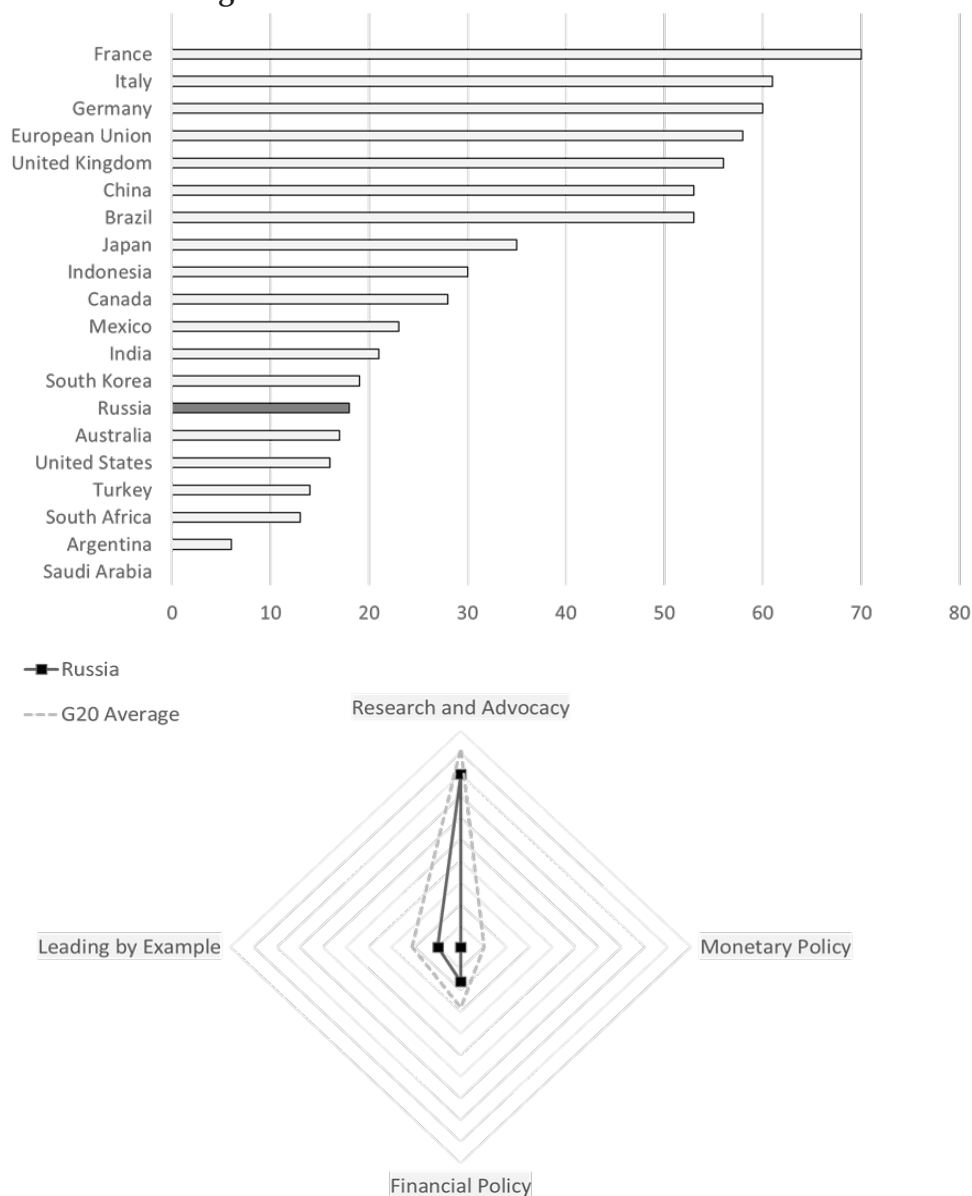
Regarding Commitment 7, while an increasing number of central banks disclose the carbon footprint associated with their operations—such as GHG emissions from employee business travel or banknote production—the Bank of Russia has lagged behind. As noted in Commitment 3, the Bank of Russia has called for domestic financial institutions and corporations to disclose sustainability-related information. However, the Bank itself has made little progress in disclosing its own carbon footprint, despite setting a timeline for completion by the end of 2024.

Regarding Commitments 8 and 9 on carbon trading, a pilot trading system was launched in the Sakhalin Region in 2022 and is planned to continue until the end of 2025. However, its expansions remain limited, with other regions, such as the Khanty-Mansi Autonomous District—one of Russia’s top GHG emitters due to its energy production sector—yet to follow. In this context, Russia’s dependence on fossil fuels complicates the creation of a cohesive carbon trading system, which could become a burden for these industries. Transparency and robust governance are also crucial for attracting stakeholders both domestically and internationally, but limited international collaboration due to recent sanctions further hinders the development of such trading systems.

As previously mentioned, the Bank of Russia is aligning its greening efforts with global environmental trends, but its progress has been slow, as most commitments remain “in progress” many have exceeded their original timelines. Indeed, the Bank of Russia ranks poorly in terms of green central banking compared to other central banks in G20 economies (Figure 3). The next subsection examines the factors hindering the advancement of green central banking in Russia.

43 EMERCOM of Russia, “On the State of Protection of the Population and Territories of the Russian Federation from Emergency Situations of Natural and Man-made Nature in 2023” [<https://mchs.gov.ru/dokumenty/7343>] accessed 20 June 2024.

Figure 3: Bank of Russia and G20 Economies in Terms of Green Central Banking



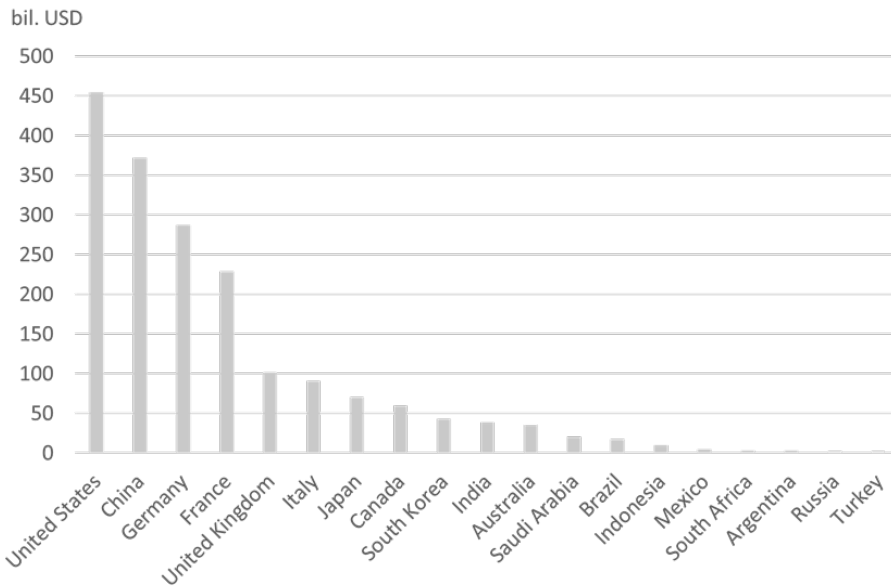
Note: The scores and ranks represent the full range of green policies and initiatives adopted by G20 central banks, based on a literature review, expert consultations, and bilateral interactions with central bankers and supervisors. The total aggregate score ranges from 0 to 130, with higher scores indicating more advanced green central banking. The score component is divided into four categories: "Research and Advocacy (out of 10 points)," "Monetary Policy (out of 50 points)," "Financial Policy (out of 50 points)," "Leading by Example (out of 20 points)."

Source: Green Central Banking, "Green Central Banking Scorecard" [<https://greencentralbanking.com/scorecard/>] accessed 10 June 2024.

4-4. What Prevents Green Central Banking in Russia?

First, one reason for the limited progress in green central banking in Russia is the underdeveloped state of its green finance market compared with other countries. Green bonds were first issued by international organizations such as the World Bank and the European Investment Bank in the late 2000s, followed by various issuers including corporations, state governments, and local governments in the 2010s. However, green bonds in Russia only appeared in 2019, when the Moscow Stock Exchange created a new listing category for green bonds, and Russian Railways issued the country's first green bond to advance the electrification of its railway network in September of that year. Thus, Russia's green finance market is still in its infancy and less mature than that of other countries (Figure 4).

Figure 4: Bank of Russia and G20 Economies (Except EU) in Terms of Green Bond Issuance



Note: Issuance data in 2023

Source: Climate Bonds Initiative, "Interactive Data Platform" [<https://www.climatebonds.net/market/data/>] accessed 25 November 2024.

Moreover, even if Russia's green finance market—particularly green bond issuance—advances, it would be more challenging for the Bank of Russia to purchase green bonds in capital markets compared with other central banks. For example, the ECB and BOE promoted the greening of monetary policy by directly intervening in capital markets through green corporate bond purchases (commonly referred to as green quantitative easing) during periods of monetary easing. However, global economies are currently undergoing monetary tightening, and Russia faces an economic environment characterized by

high prices and a weak exchange rate due to economic sanctions. Therefore, the Bank of Russia lacks the capacity to implement monetary easing measures, including green quantitative easing.

Furthermore, direct interventions like green quantitative easing must minimize its impact on capital markets as much as possible. Consequently, central banks have been purchasing corporate bonds while ensuring market neutrality. However, in Russia, where the economic structure is dominated by high-emission companies, particularly in the energy sector, purchasing green bonds in a market-neutral manner would result in the central bank's asset portfolio being dominated by bonds from high-emission companies. In such cases, this could potentially increase the Bank of Russia's transition risk further compared with other central banks.

Second, the Bank of Russia has the option to tighten or ease capital requirements through macroprudential policies. This includes raising capital requirements for lending to firms with insufficient climate disclosure and reducing capital requirements for lending to green projects. However, the efficacy of this policy tool remains unclear.

In line with the trend of financial globalization, Russian companies have actively listed on and raised funds through foreign stock markets. Foreign borrowing has also been a primary source of financing for Russian companies. However, Russia is currently under severe economic and financial sanctions from the international community in response to its invasion of Ukraine. These sanctions have led to significant challenges, such as delisting from foreign stock markets and extremely limited access to international financial markets. Under these circumstances, Russia can no longer raise funds from international financial markets (equity financing through stock issuance in foreign stock markets, bond issuance, or syndicated loans in foreign debt markets), and is compelled to raise funds through debt financing in domestic financial markets, such as borrowing from financial institutions and issuing corporate bonds. Since the summer of 2022, the domestic banking sector has become the primary financing source for most Russian firms, with corporate loans increasing by 20 percent compared to 2022.⁴⁴ With almost half of the corporate loans in Russia being adjustable-rate loans, Russian firms are struggling with a sharp increase in interest costs while seeking liquidity.

In this context, given its mandate to provide liquidity as stipulated in Federal Law No. 86-FZ "On the Central Bank of the Russian Federation," it is unlikely that the Bank of Russia would implement macroprudential regulations such as halting lending to companies, as this could lead to turmoil in the domestic economy. Moreover, given the significance of the energy industry in the current economic environment, the Bank of Russia may be reluctant to

44 The Bank of Finland Institute for Emerging Economies, "Companies in Russia Rely Largely on Domestic Banks for Financing" [https://www.bofit.fi/en/monitoring/weekly/2024/vw202423_1/] accessed 27 June 2024.

implement policy frameworks that would create headwinds for the oil and gas sector, considering its substantial contribution to the country's economy.⁴⁵

Third, structural barriers surrounding green activities in Russia also hinder the Central Bank's progress in greening its operations. Until recently, climate change issues in Russia have historically been a low priority on the policy agenda.⁴⁶ This is largely due to the country's historical experience with international climate initiatives, such as the Kyoto Protocol, which allowed Russia to benefit from "hot air." These surplus emission allowances, which did not contribute to global warming mitigation, were monetized through credit sales and generated revenue for Russia. This experience created a negative incentive for economic modernization, including responses to climate change. Consequently, climate change and related green activities have seldom been urgent or central policy agenda items worthy of significant discussion.

The shift in this perspective began with the approval of the Climate Doctrine of the Russian Federation in December 2009, a seminal document representing Russia's climate change policy framework. In its preamble, the Climate Doctrine clearly articulates the Russian government's stance on climate change, stating that climate change is one of the major international problems of the 21st century. It goes beyond the scope of a scientific problem and represents a complex interdisciplinary problem that covers the environmental, economic, and social aspects of Russia's sustainable development. This declaration underscores the multifaceted nature of the issue and positions climate change as a pivotal topic in Russia's policy discourse.

However, even when climate change issues reach the policy agenda, their formulation and implementation can be obstructed by opposition forces driven by political motives. A notable example is the carbon tax, which is one of the most effective policy tools for reducing GHG emissions. In Russia, discussions on carbon taxes began in March 2019, when they were first introduced as a draft bill. This legislation, spearheaded by the Ministry of Natural Resources and Environment, aimed to establish emission targets for individual companies, impose fines for exceeding these limits, and contribute to achieving the reduction targets outlined in the Paris Agreement, which Russia ratified in September 2019.

The policy included mechanisms such as setting emission caps for enterprises, including the country's largest polluters in the energy sector; implementing a penalty system; and establishing a state fund to facilitate the development of the country's carbon trading market. In collaboration with the

45 TABATA Shinichiro 田畑伸一郎, "Roshia Keizai no Tsuyosa to Yowasa ロシア経済の強さと弱さ [Strengths and Weaknesses of the Russian Economy]," *Hikaku Keizai Kenkyû* 比較経済研究 57, no. 1 (2020), pp. 27–39.

46 Angelina Davidova, "Russia Wants to Protect Itself from Climate Change—Without Reducing Carbon Emissions" [<https://www.science.org/content/article/russia-wants-protect-itself-climate-change-without-reducing-carbon-emissions>] accessed 20 June 2024.

Ministry of Economic Development, a draft bill was designed to incentivize compliance through these economic mechanisms. However, after its announcement, the State Duma criticized the proposal, arguing that it would merely lead to higher end-user energy prices. Ultimately, in October 2019, the draft bill was withdrawn following opposition from the Ministry of Energy and Russian Union of Industrialists and Entrepreneurs. Resistance from energy industries and associated government bodies highlights the strong structural barriers that hinder not only the adoption of climate policies in Russia but also broader green initiatives, including green central banking.

5. CONCLUSION

Climate change affects natural, social, and economic systems, compelling central banks and financial regulators globally to address related risks. Given the limited research on green central banking—particularly in emerging and developing countries—this study aims to elucidate the current status and future prospects of green central banking in Russia.

Initially, this paper traces the global trend of green central banking and summarizes existing analyses in the literature review. It then outlines the policy trends and modalities of the Bank of Russia, examining both green central banking approaches and the decarbonization of economic structures and systems.

In recent years, the Bank of Russia has begun taking steps toward greening its operations, but its progress has been slower than that of other central banks. Within this context, this study analyzes the impediments to green central banking in Russia.

First, it finds that Russia's green finance market—a crucial facilitator for advancing green central banking—remains underdeveloped relative to other nations. Additionally, current economic conditions and sanctions constrain the Bank of Russia's capacity to implement green monetary policies, such as green quantitative easing. Even if such policies were feasible, the dominance of high-emission industries in Russia complicates green bond purchases due to the principle of market neutrality.

Second, this paper reveals that while macroprudential policies, including adjusting capital requirements, are under discussion within the Bank of Russia, significant uncertainties persist due to the economy's reliance on high-emission industries and the impact of financial sanctions. These challenges are compounded by the Bank of Russia's responsibility to provide liquidity in the domestic market under current economic conditions.

Third, this paper identifies structural barriers to climate change and green activities in Russia as significant factors hindering the Bank of Russia's progress toward greening its operations. For a prolonged period, climate change and green initiatives have remained low on Russia's policy agenda. Even when

policy discussions do arise, they are often obstructed by opposition from the energy sector and associated governmental bodies. Considering the recent poor performance of the energy industry due to economic sanctions imposed as a result of the war, it has become increasingly challenging for the Bank of Russia to advance green policies that could exacerbate the industry's struggles. Additionally, the resulting increase in production costs and living expenses is unlikely to be welcomed by other industries or consumers.

In summary, green central banking in Russia has made some progress, influenced by international trends, and there is significant potential for the development of the country's overall green finance market.⁴⁷ However, as Russia becomes increasingly isolated from the international community, these external factors are likely to become less effective in the short-term.

For instance, the disclosure of non-financial information, emphasized in Climate Commitment 3, is indispensable for greening financial markets and raising environmental awareness among various stakeholders. However, Russian companies are currently operating under severe economic and financial sanctions imposed by the international community in response to the invasion of Ukraine. These companies face significant challenges, such as delisting from foreign stock exchanges (as discussed in Section 4-4). In this domestic economic context, even if Russian companies understand that signaling to foreign institutional investors through non-financial information disclosure could reduce capital costs and mitigate reputational risks, they are unlikely to prioritize such measures within their growth and business strategies.

Moreover, Russia has historically strengthened its macroeconomic growth model by channeling oil and natural gas revenues into domestic demand. This has led to a rapid increase in energy production, cross-sector wage growth, and macroeconomic stability. Despite the poor performance of the oil and gas industry in recent years, it still wields considerable economic and political influence, and the modernization of Russia's economic structure or its decarbonization is unlikely to progress rapidly.

Additionally, the disclosure of non-financial information inherently involves revealing potential risks, which could reduce information asymmetry between companies and other stakeholders. This transparency might also pave the way for the introduction of additional environmental regulations targeting companies and broader industries. Such developments are likely to encounter resistance from major energy companies and industry groups, similar to the opposition faced by the carbon tax proposal. Under these domestic conditions, it is reasonable to expect that the factors identified in Section 4-4, which hinder green central banking, will persist.

47 Ekaterina Kopalkina and Monika Arustamyan, "Sustainable Finance in Russia: Present and Future" [<https://econs.online/en/articles/opinions/sustainable-finance-in-russia-present-and-future/>] accessed 20 June 2024.

These highlighted propositions aim to guide Russia toward a low-carbon society and must also be addressed to advance green central banking. However, given the significant economic and structural challenges described throughout this paper, progress in green central banking in Russia is likely to be slow in the short term.