Original Paper

Debt Policy for the Sustainable Development of Russian Regions and Megacities

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ABSTRACT
Relevance. In recent years, the role of ESG (Environmental, Social and Governance) bonds has been rapidly growing in the world. ESGs are used to raise funds for programs for sustainable development of territories.
Research objective. The paper studies the cases of Russian regions using green bonds and considers the prospects of this tool in the Russian context.
Data and Methods. The analysis focuses on the debt indicators of Russian regions and related budgetary indicators based on open source data from the Ministry of Finance, the Treasury, and independent rating agencies. The methods of comparative and retrospective analysis are used to identify the state and features of regional debt policy.
Results. Our analysis of the debt policy of Russian regions and megacities shows a low level of their activity in the stock market as issuers of bonds. This can be explained by the complexity of the system of subnational finances and the role of the Federation in preventing default situations, and therefore the priority use of budget loans. The city of Moscow was a pioneer in this matter in Russia. This determines the uniqueness of Moscow's experience in implementing debt policy.
Conclusions. The expansion of the green bond practice will allow Russia to move forward in achieving the goals of ESG agenda, which, despite the large-scale sanctions imposed on Russia at the moment, still remains relevant.

Долговая политика для устойчивого развития регионов и мегаполисов России

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АННОТАЦИЯ
Актуальность. В последние годы в мире стремительно растет роль ESG (Environmental, Social and Governance) облигаций. ESG используются для сбора средств на программы устойчивого развития территорий.
Цель исследования. В статье исследуются кейсы использования «зеленых» облигаций российскими регионами и рассматриваются перспективы использования этого инструмента в российских условиях.
Данные и методы. Основное внимание в анализе уделяется долговым показателям регионов России и связанным с ними бюджетным показателям на основе открытых данных Минфина, Казначейства и независимых рейтинговых агентств. Для выявления состояния и особенностей региональной долговой политики используются методы сравнительного и ретроспективного анализа.
Результаты. Наш анализ долговой политики российских регионов и мегаполисов показывает низкий уровень их активности на фондовом рынке как эмитентов облигаций. Это можно объяснить сложностью системы субнациональных финансов и ролью Федерации в предотвращении дефолтных ситуаций, а значит, приоритетным использованием бюджетных

кредитов. Пионером в этом вопросе в России была Москва. Это определя-
ет уникальность опыта Москвы в реализации долговой политики.
Выводы. Расширение практики зеленых облигаций позволит России про-
двинуться вперед в достижении целей ESG-повестки, которая, несмотря
на масштабные санкции, наложенные на Россию в настоящий момент,
по-прежнему остается актуальной.

俄罗斯地区和超级城市可持续发展的债务政策

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摘要
现实性： 近年来，ESG（环境、社会和治理）债券的作用已迅速增
长。ESG 为可持续发展项目筹集资金。
研究目标： 本文研究了俄罗斯地区使用"绿色"债券的案例，并讨论了
在俄罗斯背景下使用该工具的前景。
数据与方法： 分析的重点是俄罗斯各地区的债务指标和相关预算指标，
其依据是财政部、联邦国库和独立评级机构的公开数据。识别区域债务
政策状态和特征，需运用比较和回顾分析法。
研究结果： 我们对俄罗斯地区和超级城市的债务政策的分析表明，他们
作为债券发行人在股票市场上的活动水平很低。这可能因为地方财政系
统的复杂性，或者联邦因防止违约情况发生因此优先使用预算贷款。在
这个问题上，莫斯科是俄罗斯的先驱。这决定了莫斯科在实施债务政策
上有独特经验。
结论： 绿色债券的扩大将使俄罗斯能够推进ESG议程。尽管目前俄罗斯
经受了广泛的制裁，但该议程仍然具有现实意义。

Introduction

Modern development of territories is impossible without significant investment. Different regions and cities use various methods to attract funding. As a rule, regional or local authorities use borrowed funds to finance large investment projects. The use of this approach makes it possible to link the maturity of obligations to the economically useful life of a project, which is a preferable option in comparison with financing the entire cost of the project only from the region's current income. This is an optimal approach to the financial policy of borrowing in regional development. Borrowing is an important source of budget funds at the subnational level in both federal and unitary states (Boadway et al., 2018). Borrowing is the most popular source of funds for public investment and it can be described as the golden rule of public finance (Ueshina, 2018).

Despite Russia's wealth in hydrocarbons, the country supports the aspirations of the world community to combat climate change. Russia signed and adopted the Paris Climate Agreement in 2019, and as part of this agreement, in November 2020, the President of Russia issued a decree on reducing greenhouse gas emissions. Russia, however, is unlikely to copy energy-importing countries' approach to the green transition and climate policy instruments (Makarov, 2022).

For Russia, in the face of the global challenges, it is especially important to develop a model of the most effective fiscal policy in regions with a high level of financial independence. For regions heavily dependent on financial assistance from the federal budget, intergovernmental transfers will be the main factor of fiscal sustainability. For regions and cities with high levels of population concentration and high degrees of fiscal independence, measures should be devised to ensure sustainable development in the face of a potential crisis, lockdown and other emergency situations. In this regard, Moscow, being both a region (a constitutional subject

of the Russian Federation) and the largest city in Russia, occupies a unique place in terms of fiscal policy.

Recently, the largest regions and megacities of the world have been actively implementing ESG (Environmental, Social and Governance) policies. Within this policy, the government's efforts are aimed at ensuring sustainable development, which includes the improvement of the environmental situation, transport infrastructure and urban environment. For such ESG projects, financing is raised mainly through bonded loans or so-called green bonds. Green bonds are fixed-income securities designed specifically to finance or re-finance investments, projects, expenditure or assets helping to address climate and environmental issues. Both governments and companies use them to finance the transition to a more sustainable and low-carbon economy[1].

In 2021, the city of Moscow issued the first green bonds in Russia to finance environmental projects. This was a new step in the development of Russia's regional debt policy, which, due to geopolitical tensions and economic reasons, may undergo significant changes in the coming years. Thus, this study aims to evaluate the prospects of green bonds in Russia by solving several tasks:

– review the experience of using green bonds in Russia;

– analyze the data on the public debt and budgets of Russian regions as well as their credit ratings;

– conduct a retrospective analysis of bond issuance practices in Russian regions;

– review green bond issuance practices in the city of Moscow.

The events of March 2022 and the fourth round of European sanctions against the Russian Federation led the Big Three rating agencies to withdraw their credit ratings from Russia, its regions, and companies based in the Russian Federation. Basically, the ratings were first downgraded, then withdrawn. The Fitch Ratings agency withdrew the sovereign rating of all Russian companies on March 23, 2022, and the sovereign rating of the Russian Federation on March 25. At the time of the withdrawal, Russia's long-term and short-term issuer default ratings in foreign and local currency, as well as the rating of senior un-

secured debt, were at the level of C, the ceiling of the country's rating was B–[2].

On March 31, international agency *Standard & Poor's Global Ratings* downgraded the ratings of Moscow, the Yamal-Nenets Autonomous District, Leningrad, Samara and Krasnoyarsk regions to "CC" and placed them on the review list with a "negative" outlook[3]. Similarly, *Moody's Investors Service* withdrew all the ratings of the Russian Federation and its regions. Along with the sovereign ratings, *Moody's* withdrew the ratings of cities Moscow, St. Petersburg, Krasnodar, Omsk, and Volgograd, as well as Moscow Region, Bashkortostan, Tatarstan, Chuvashia, Komi, the Khanty-Mansi Autonomous District, Krasnoyarsk and Krasnodar, Samara, Omsk and Nizhny Novgorod regions. The ratings of the two infrastructural companies *Vodokanal of St. Petersburg* and *Western High-Speed Diameter* were also withdrawn. At the time of the withdrawal, the ratings of Russia and all the above issuers were at the level of "Ca" with a "negative" outlook[4].

It should be noted, however, that the ban on assigning a credit rating to any Russian citizen or individual residing in Russia, legal entity established in Russia) that was part of the fourth package of the EU sanctions applies exclusively to credit ratings and does not concern the ESG ratings of Russian companies. Thus, the study of this tool is still relevant.

Theoretical framework

In the last decades, attempts have been made to find a balance between the interests of human society and nature, most interestingly in the effort of sustainable development[5]. The most concise definition in this regard is as follows: sustainable development is "socio-economic development driven by environmental protection and environmental safety" (Boklan, Kopylov, 2014). Thus, the sustainability of a national economy is its stability, security, ability for continuous development and evolution (Abalkin, 2011).

[1] Spinaci, S. European green bonds. A standard for Europe, open to the world. European Parliamentary Research Service. URL: https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698870/EPRS_BRI(2022)698870_EN.pdf (Date of access: 01.08.2022).

[2] https://www.unssc.org/sites/default/files/2030_agenda_for_sustainable_development_-_primer_russian.pdf (Date of access: 01.08.2022).

[3] https://www.spglobal.com/ratings/en/research/articles/220303-ratings-actions-waypoint-the-russia-ukraine-conflict-12299837 (Date of access: 01.08.2022).

[4] https://www.moodys.com/research/Moodys-withdraws-credit-ratings-on-multiple-entities--PR_464393 (Date of access: 01.08.2022).

[5] Our Common Future. World Commission on Environment and Development Report. Oxford University Press, 1987. 383 p.

A definition of sustainable development that is closer to the original interpretation given in the late 1980s is as follows: it is a balanced development that ensures the progress of economy and society and does not damage the natural environment (Inshakova, 2004). Later studies give similar interpretations: sustainable development is a qualitatively new stage in the evolution of environmental and economic relations aimed at building a harmonious society capable of providing a balanced interaction of economic, social, and environmental factors of development (Nurtdinov et al., 2012).

In contrast to sustainable development, resilience described as the ability of territorial systems to maintain the constancy and balance of internal parameters under the influence of internal and external shocks is used for short-term effects (Klimanov et al., 2018).

After 1992, the conflict of interests between economy, society and the environment became increasingly evident. There was a need to introduce the concept of joint management of global stakeholders[6]. In 2012, another UN conference on sustainable development called Rio + 20 was held, which showed that a green economy is the key to resolving conflicts between development and the environment (Barbier, 2012). By the end of the summit, one more component was added to the concept of sustainable development – management (Zhu, 2016). In other words, the need was recognized to ensure "sustainable management of natural resources and ecosystems, which are consistent, inter alia, with the goals of economic, social, and human development, and at the same time contribute to the conservation of ecosystems, their regeneration and restoration and increase their resilience in the face of new and future challenges"[7].

The long-term guidelines in the field of sustainable development which are still followed in the world today were formulated within the framework of the UN Summit on Sustainable Development held in 2015 in New York. The declaration "Transforming Our World: The 2030 Agenda for Sustainable Development" identified seventeen goals and 169 targets[8] set for all countries.

Recently, a trend in Russia and for the world in general has been the increasing importance of financial flows in the public sector for the development of territories (Pasyankov, 2020), although sustainable development in Eastern and Western European countries is affected by various economic, social and environmental processes (Lopatkova, 2021).

Within the economic research policies, governmental debt is a factor in policy development. This affects policies connected to sustainability, which can be presented in different forms:

– as part of the theory of public finance (Shah et al., 2009; Musgrave, 1973);

– as a direction and instrument of a budgetary policy, including, among other things, the need to ensure a balanced budget (Kudrin, Deryugin, 2018; Lavrov, 2019; Mikhaylova, Timushev, 2022);

– as part of strategic planning at various levels of government (Klimanov, Kazakova, 2022; Zhikharevich et al., 2021; Wolfe, 2010);

– as a mechanism for the implementation of policies pursued by subnational authorities and local governments (Zubarevich, 2020; Biermann et al., 2014; Hassink, 2010).

As the government's opportunities for borrowing are declining, leading to a higher risk of default on debt obligations, the question of debt sustainability is gaining urgency. During economic downturns, government borrowing is becoming particularly important and a decrease in the government's capacity for borrowing reduces the overall potential for a counter-cyclical fiscal policy. Thus, a balanced policy of debt borrowing at the subnational level is important for sustainable regional development.

However, only a few studies have been devoted to the analysis of the creditworthiness of subnational territorial units. One of the first studies (Laulajainen, 1999) analyzing the ratings of Russian regions notes the low variability of the credit ratings of German states compared to the ratings of US states. Several papers reveal the factors leading to the variable credit ratings of regions, including the system of intergovernmental relations and the level of budgetary independence, among others (Beck et al., 2017; Baskaran, 2012). In one

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[6] United Nations (2012). The Future We Want. Resolution adopted by the General Assembly on 27 July 2012. Available from: https://www.eea.europa.eu/policy-documents/the-future-we-want-2013declaration (Date of access: 01.08.2022).

[7] United Nations (2012). The Future we Want. Resolution adopted by the General Assembly on 27 July 2012. Available from: https://www.eea.europa.eu/policy-documents/the-future-we-want-2013declaration (Date of access: 01.08.2022).

[8] United Nations (2015). Transforming Our World: The 2030 Agenda for Sustainable Development. Available from: https://www.unssc.org/sites/default/files/2030_agenda_for_sustainable_development_-_primer_russian.pdf (Date of access: 01.08.2022).

of the latest studies, Mikhaylova and Timushev (2022) concluded that the lower creditworthiness of Russian regions from an international perspective reflects the weakness of the institutions of the Russian budgetary system, in particular, the insufficient tax and expenditure autonomy of local and regional authorities. Some works show that poorer and less fiscally independent regions have a lower access to budget credits and are forced to rely on more expensive market debt instruments (Johnson, Yushkov, 2022).

In view of the changes in the budgetary legislation, it is expected that the volume of the public debt of Russian regions will increase while its structure will be changing. The COVID-19 crisis led the federal government to test new forms of support for regions. In the same period, new instruments of debt policy such as infrastructure loans were introduced. These instruments, especially green financing and green bonds, require additional research and assessment of their potential (Bhattacharyya, 2022; Ilic, 2019; Bogacheva, Smorodinov, 2018).

Method and Data

In this paper we consider the information on Russian regional budgets and their public debt. We analyze credit ratings, indicators of debt sustainability, and regional data. The data are obtained from the websites of Russia's Ministry of Finance, the Treasury, and independent rating agencies.

The analysis uses credit ratings data for the beginning of 2022 assigned by such international agencies as Fitch, Standard & Poor's, and Moody's[9].

The methods of comparative and retrospective analysis are used to identify the state and features of regional debt policies.

Using data from the Russian Ministry of Finance for a 17-year period (2005–2021), we show the size of the regional budget deficit in Russia. Then we consider in detail the structure of debt obligations of the regions. We have collected data from rating agencies on regional ratings. The data for the period since 1997 taken from *Rusbonds.ru* are used for a comparative analysis of the number and volumes of issuance of regional bonds. The results of our analysis will be used to draw conclusions about the practice of using bonds in Russian regions.

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[9] https://www.spglobal.com/ratings/ru/index; https://www.fitchratings.com; https://www.moodys.com/researchandratings/region/europe/-/004001001/005007?tb=2 (Date of access: 01.08.2022).

Results

In this section we review the practices of green bonds usage in Russia and the city of Moscow in particular. We analyze the data on the public debt and budgets of Russian regions as well as their credit ratings and conduct a retrospective analysis of regional bond issuance practices.

Green bonds in Russia

Green bonds form a group of responsible investment bonds and represent one of the promising financial instruments for raising the necessary funds for the implementation of the environmental policy, urban infrastructure development and social issues.

However, this tool has not yet taken its rightful place in the arsenal of regional financial structures in Russia. Currently, green bonds are issued by commercial and state-owned companies.

The key problem of the placement of green bonds by the regions remains the principles of the unity of the cash desk and the general coverage of budget expenditures of the Budget Code of the Russian Federation. Possible ways to address the issuance of green bonds within the current legislation include the following:

– issue of securities by companies with state participation in the format, for example, of regional development corporations, regional funds for supporting SMEs;

– allocation to eligible projects of the equivalent value of budgeted funds;

– issue of project financing bonds for regional projects in the form of, for example, PPP projects.

To finance projects in the field of environmental protection and socially significant projects, the Moscow Exchange created a sustainable development sector, which consists of: 1) green bonds, 2) social bonds, and 3) the bonds that correspond to the goals and objectives of national projects.

In May 2021, the Bank of Russia registered program DOM.RF. The Bank plans to issue infrastructure bonds in the amount of 300 billion rubles in 2022–2023. The funds raised this way will be spent on the construction of roads, engineering and social infrastructure for housing construction projects and urban infrastructure within the framework of the "Housing and Urban Environment" national project.

In addition, in his Address to the Federal Assembly of April 21, 2021, the President announced the government's intention to implement a new development tool – infrastructure

budget loans. A previously used debt policy instrument, infrastructure bonds are bonds issued to raise financing for long-term infrastructure development projects. The new mechanism – infrastructure budget loans – will be issued to the regions from the federal budget at a rate of no more than three percent per annum and with a maturity of 15 years. Until the end of 2023, it is planned to allocate such infrastructure loans for a total amount of at least 500 billion rubles[10]. The general principle of distribution of infrastructure loans is as follows: the less debt a region has, the more it will be able to receive infrastructure loans. The first such loans are planned to be issued to the Yamal-Nenets Autonomous District Krasnoyarsk, Nizhny Novgorod, and Chelyabinsk regions.

Thus, there are obvious prerequisites for further development of green bonds and other tools of responsible financing.

Budgetary and debt situation in Russian regions

In Russia, like in other countries of the world, in addition to the budget of the central government, regions and municipalities also form budgets at their respective levels. The country's bud-

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[10] Address from the President to the Federal Assembly. http://www.kremlin.ru/events/president/news/65418 (Date of access: 01.08.2022).
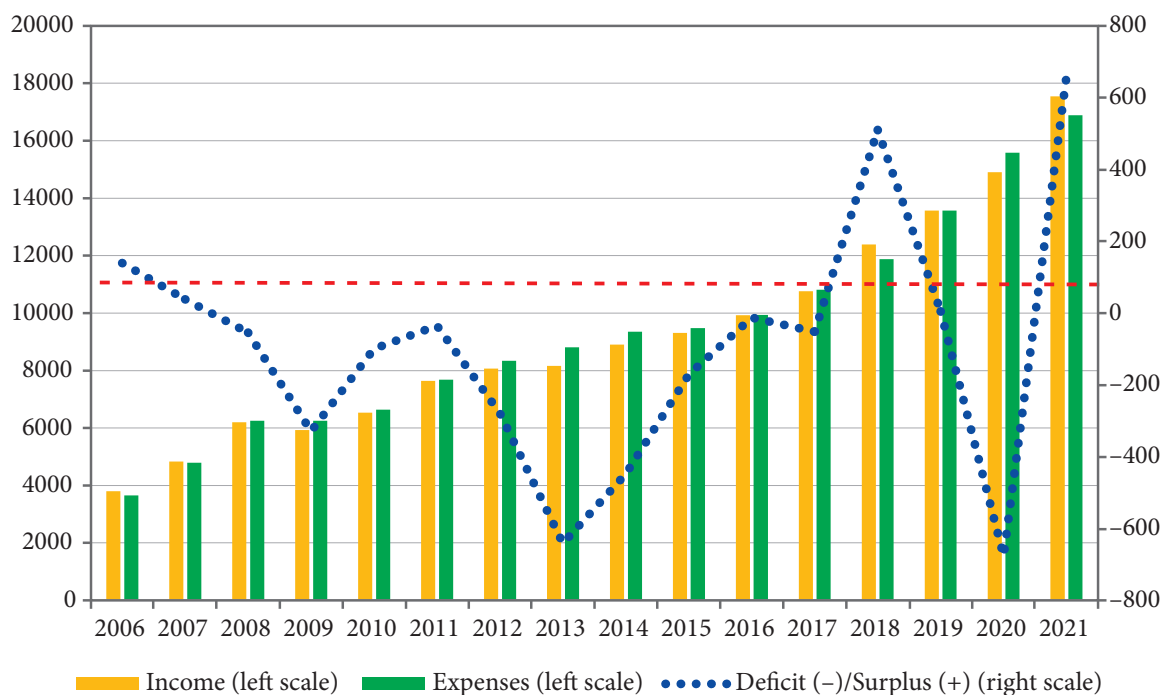
getary system consists of the federal budget, the budgets of state social service funds, and budgets of regions and municipalities. The budgetary system is based on general economic relations and the state structure and is regulated by the federal legislation. The sum of consolidated budgets of Russian regions is understood as a set of regional and local budgets without taking into account intergovernmental fiscal transfers between them. It should be noted that the share of the latter in the Russian budget system is relatively small and has been declining in recent years.

It can be noted that over the past 15 years, consolidated budgets have been executed with an overall surplus only a few times: in 2006–2007 and in 2018–2019 (Fig. 1). In 2019, however, this surplus was insignificant.

Over the period indicated above, the structure of revenues of the consolidated regional budgets has transformed. The general trend is to increase the share of intergovernmental fiscal transfers and reduce the share of income tax in the structure of regional budget revenues. The situation in 2020 was not quite typical because, for the first time in 15 years, transfers exceeded income tax receipts.

In general, the personal income tax has been the main source of income for the consolidated regional budgets since 2009. For the last three years, it has accounted for 29 per cent of the revenues.

Figure 1. *Balance of regional budgets in Russia, billion rubles*
Source: compiled by the authors based on the data from the Ministry of Finance of Russia

Regional disparities in the tax base are huge in Russia. For example, 10 regions account for 56 per cent of all the revenues from the personal income tax, while 60 per cent of the corporate income tax is derived from only 10 regions.

Moscow is the most financially stable region in Russia; the revenue base is almost totally derived from its own sources.

Some of the federal budget's funds are distributed among the regions in the form of intergovernmental fiscal transfers (not linked to the purposes of granting – dotations, conditioned by the specific purposes of granting – subventions, subsidies, and other transfers) aimed at equalizing the vertical imbalance in the distribution of taxes.

The share of these transfers in the structure of regional budget revenues was declining from 2009 to 2017. After that, it began to grow again, amounting to a quarter of the revenues of the consolidated regional budgets in 2020. Previously, the same indicator level was observed in the crisis year of 2009. In addition, 2020 was characterized by the largest volume of budget loans issued in 15 years.

It can be noted that in the last five years there has not been such a rapid growth in budget loans, as it was, for example, in 2012–2016. In 2018 and 2019 their volumes even decreased.

Since 2016, however, budget loans have become the main element in the structure of the state debt of regional budgets (Fig. 2). In 2020, the share of such loans in the structure of regional debt exceeded the share of bank loans by almost two times. Government securities of the regions were the main element of the regional debt structure from 2005 to 2010. From 2013 to 2015, the main share in the loan portfolio of the regions was given to loans from credit institutions. Only in 2019, for the first time since 2011, the share of government securities in the structure of regional borrowings exceeded the share of bank loans. In 2020, this trend strengthened.

A potential incentive for further growth in the regional bond market may be the fact that since 2020, the annual repayment and debt service volumes have been used to assess debt sustainability. Therefore, replacing bank loans with bonds, the maturities of which are usually longer, will help reduce such payments.

Credit ratings of Russian regions

In general, if a region wants to enter the debt market, it must comply with certain conditions specified in the law. The issue of securities of a region is also subject to certain restrictions.

An important indicator of debt sustainability is the borrower's creditworthiness, which can be confirmed by a credit rating. An issuer's credit rating is an informed third-party opinion on creditworthiness (the risk of default). Ratings increase the availability of information and, as a result, high credit ratings increase the liquidity of the issuer in the debt market. Along with the credit rating, the liquidity of bonds is influenced by such factors as the issue volume, volatility, publicity of the issuer, etc.
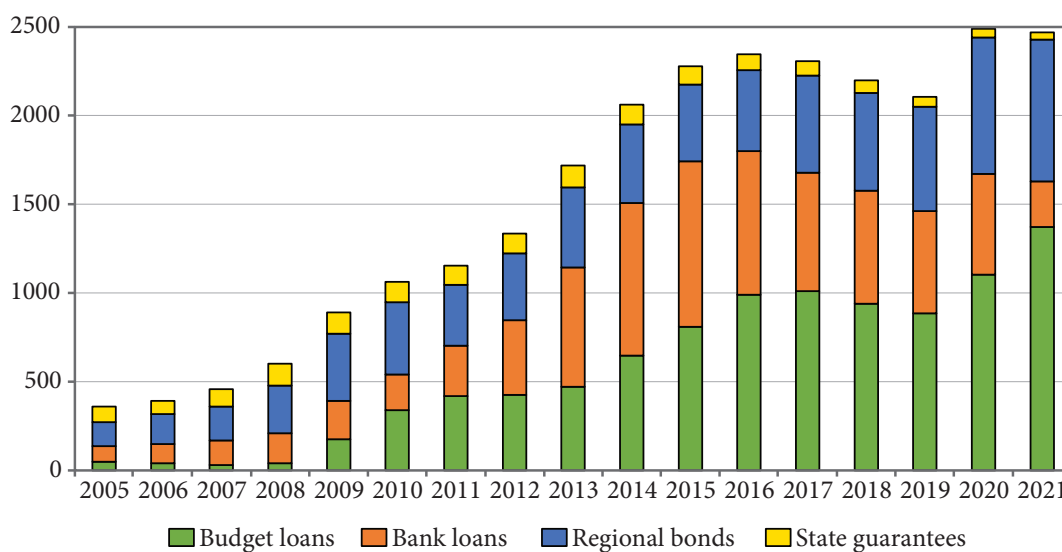

Figure 2. *Volume and structure of public debt of regions, billion rubles, by the end of the year*
Source: compiled by the authors based on the data from the Ministry of Finance of Russia

The sovereign rating of Russia had remained at a very low level even before March 2022. Major international rating agencies such as *Fitch, Standard & Poor's (S&P)* and *Moody's* have assigned Russia BBB, BBB–, and Baa3 ratings accordingly.

Russian regions are rated by the Russian ACRA and Expert RA agencies. As of May 2021, 52 regions have at least one assigned credit rating from a Russian rating agency. At the same time, Krasnodar region, the Republic of Tatarstan, the Yamal-Nenets Autonomous District, and Tomsk region have up-to-date ratings from both agencies.

The peculiarity of regional ratings is that, according to the methodology, they cannot be higher than the country's sovereign ratings. Table 1 presents the credit ratings of the Russian regions from the largest international rating agencies.

At least 27 Russian regions have an up-to-date credit rating assigned by an international agency. At the same time, only the City of Moscow and Krasnoyarsk region have ratings from three agencies.

Fitch estimates that six Russian regions, including the City of Moscow, have their own credit ratings above the sovereign. These include Chelyabinsk Region, the City of St. Petersburg, the Yamal-Nenets Autonomous District, Bashkortostan and Tatarstan. However, according to the rules of the methodology, their final ratings are on a par

Table 1

Credit Ratings of Russian Regions in February 2022

Region	Fitch	S&P	Moody's
Central Macroregion			
Lipetsk Region	BB+	–	–
Moscow Region	BBB–	–	Ba1
Smolensk Region	B+	–	–
Yaroslavl Region	BB	–	–
City of Moscow	BBB	BBB-	Baa3
Northwestern Macroregion			
Komi Republic		–	Ba3
Leningrad Region		BB+	–
City of St. Petersburg	BBB	–	Baa3
Southern Macroregion			
Krasnodar Territory			Ba3
North Caucasian Macroregion			
Stavropol Territory	BB+	–	–
Volga Macroregion			
Republic of Bashkortostan	BBB	–	Ba1
Mari El Republic	BB	–	–
Republic of Tatarstan	BBB	–	Ba1
Chuvash Republic	–	–	Ba2
Kirov Region	BB–	–	–
Nizhny Novgorod Region	BB	–	Ba3
Orenburg Region	BB+	–	–
Samara Region	–	BB+	Ba2
Ural Macroregion			
Sverdlovsk Region	BB+	–	–
Khanty-Mansi Autonomous District	–		Ba1
Yamal-Nenets Autonomous District	BBB	BBB–	–
Chelyabinsk Region	BBB	–	–
Siberian Macroregion			
Altai Territory	BBB-	–	–
Krasnoyarsk Territory	BB+	BB	Ba3
Novosibirsk Region	BBB-	–	–
Omsk Region	–	–	Ba3
Far Eastern Macroregion			
The Republic of Sakha (Yakutia)	BBB–		–
Number of rated regions	20	5	13

Source: compiled by the authors based on the data from Fitch, Standard & Poor's, Moody's Ratings.

with Russia's sovereign rating (BBB). Smolensk (B+), Yaroslavl (BB) and the Republic of Mari El (BB) have the lowest ratings, according to *Fitch* methodology.

Among the issuers assessed by *Moody's*, the City of Moscow and the City of St. Petersburg have the highest credit ratings corresponding to Russia's sovereign rating (Baa3), and only they fall into the "investment grade".

Bond-related practices of Russian regions

The experience of regional governments in attracting borrowed funds through the issuance of securities is diverse. Table 2 summarizes the information on bond practices since 1997. In general, almost all the regions have resorted to issuing bonds, but the table shows only the regions for which relevant open data are available.

It is noteworthy that in addition to the cities of Moscow and St. Petersburg, several Russian regions are actively resorting to the issuance of securities. For example, since 1997, Tomsk Region has had 52 bond issues. In addition, in 2020, Tomsk Region was the first in Russia to launch an online sale of bonds for the public on the marketplace platform, which made them available to citizens of the Russian Federation.

The Republic of Sakha (Yakutia), Nizhny Novgorod, Krasnoyarsk, and Sverdlovsk regions also have a long experience of issuing government securities. For the first time, Yakutia issued government bonds in 1995, simultaneously with Moscow and St. Petersburg. All bond issues of Yakutia are included in the top-level quotation list of the Moscow Stock Exchange.

Bond placement by Russian regions takes place mainly in the fourth quarter. Over the past five years, in the first quarter, the regions did not issue bonds at all.

In general, debt management is the process of developing and implementing a set of measures aimed at attracting borrowed resources necessary for the development of the region, while maintaining acceptable risk levels and borrowing costs.

In 2020, 18 Russian regions issued bonds (21 per cent of the total number of regions). The leaders in 2020 were Moscow Region (285.1 billion rubles) and Sverdlovsk Region (113.4 billion rubles), which accounted for 19.7 per cent of all attracted funds.

If we consider the placement of securities on the stock market, then for the period from 2006 to the 2nd quarter of 2021, the number of issues of

regional bonds in circulation is 120 units for the total amount of 947.7 billion rubles[11]. The period from 2018 to the 2nd quarter of 2021 accounted for the largest share of bond issues (60.7 per cent), in which 2020 alone accounts for 34.3 per cent. The average coupon rate was 7.97 per cent, and the average maturity was 6.5 years.

The most active placements were carried out by 4 regions: Sverdlovsk Region (9 placements for 73 billion rubles), the Republic of Sakha (Yakutia) (8 and 39,450 million), Belgorod Region (8 and 18,785 million), and Moscow Region (7 and 162 billion). In general, this group of regions accounted for 26.7 per cent of the total number of placements and 30.9 per cent of the total volume of attraction. The second group of active regions (Yaroslavl, Samara, Novosibirsk, Nizhny Novgorod, Krasnoyarsk, and the City of St. Petersburg) placed four or five issues each and accounted for 24.2 per cent of all the placements and 29.9 per cent of the total volume. Other regions placed from one to three issues.

Our analysis of placement volumes showed that there are three leaders among the Russian regions, that is, those that have attracted more than 100 billion rubles: Moscow Region (162 billion rubles), the City of St. Petersburg (115 billion rubles), and the City of Moscow (100 billion rubles). They have accounted for about 40 per cent of the total placement volume over the past 14 years. The second place is occupied by two other active market players (with the volume of attraction from 50 billion to 100 billion rubles): Sverdlovsk (73 billion rubles) and Krasnoyarsk (55.47 billion rubles), which account for 13.6 per cent of the total placement. Together, these two groups make up 53.3 per cent of the total placement volume.

Moscow as the largest borrower

The City of Moscow, the largest city in the country, has accumulated sufficient experience in pursuing debt policy at the sub-federal level.

Until the spring of 2021, the last time Moscow entered the market was in 2013. In the spring of 2021, the bond issuance policy became active again. At that time, three bond issues (72nd, 73rd and 74th) took place. These amounted to 70 billion rubles each[12].

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[11] According to the data of the Moscow Stock Exchange. https://www.moex.com/en (Date of access: 01.08.2022).

[12] Tkachev, I., Khazarnovsky, P. City authorities borrowed to travel. https://www.rbc.ru/newspaper/2021/04/28/6087c-7b99a7947ddd61c3894 (Date of access: 01.08.2022).

Table 2

Bonds of Russian regions in 1997–2021

Region	Number of bond issues	Total amount, bln rbs	Average yield for the entire issue period, per cent
Belgorod Region	19	45.7	9.6
Voronezh Region	4	18	9.7
Kostroma Region	3	11	9.9
Lipetsk Region	7	20	8.4
Moscow Region	7	177	7.08
Smolensk Region	1	3	9.2
Tambov Region	3	8.1	8.5
Yaroslavl Region	18	58	9.3
City of Moscow	82	1,034.5	11.7
Republic of Karelia	18	18.03	11.6
Komi Republic	14	45.23	14.7
Vologda Region	6	7.4	11.7
Leningrad Region	2	9.2	13.5
Murmansk Region	2	0.55	16.8
City of St. Petersburg	34	390	14.8
Nenets Autonomous District	1	2	8.03
Krasnodar Territory	8	53.3	14.2
Volgograd Region	15	37.7	9.6
Karachay-Cherkessia Republic	1	2	8.99
Stavropol Territory	5	34.8	8.8
Republic of Bashkortostan	10	22.5	12.3
Mari El Republic	5	6.2	10
The Republic of Mordovia	3	11	12.1
Udmurt Republic	10	31	9.7
Kirov Region	1	5	8.77
Nizhny Novgorod Region	15	105.5	9.7
Orenburg Region	2	9	9.4
Penza Region	2	1.8	9.9
Saratov Region	1	5	8.35
Sverdlovsk Region	11	81	7.6
Chelyabinsk Region	3	23	6.14
Yamal-Nenets Autonomous District	2	21.8	9.85
Republic of Khakassia	6	15.7	10.8
Krasnoyarsk Territory	13	142	9.8
Irkutsk Region	20	16	12.1
Kemerovo Region	2	10	8.45
Novosibirsk Region	3	6	12.3
Omsk Region	4	20	9.3
Tomsk Region	52	67	12
Republic of Sakha (Yakutia)	22	77.3	10.5
Kamchatka Territory	1	1	9.36
Magadan Region	2	2	12.05

Source: compiled by the authors based on rusbonds.ru data

The funds raised through the placement of bonds of the 72nd and 73rd issues are planned to be used to finance the most important urban infrastructure projects, including the transport, energy-saving, and engineering sectors. It is more profitable for the city to borrow funds and create infrastructure today than to build it in a few years by using its own sources of funds. According to the Moscow Department of Finance, the implementation of projects to deve-lop urban infrastructure will support the level of economic activity and employment and will have a positive impact on the dynamics of budget revenues.

The 74th bond issue was carried out for the first time in the country in accordance with the concept of green bonds, approved by the order of the Moscow City Government. The issue will comply with the Green Bond Principles of the International Capital Market Association (ICMA), as well as the guidelines for the development of investment activities in green financing in the Russian Federation developed by VEB.RF.

The International Capital Markets Association (ICMA) confirmed the compliance of the 74th issue with the UN principles of sustainable development and included the securities in the relevant register.

The Moscow Government plans to use the equivalent of the funds received from the placement of green bonds to finance and refinance urban environmental projects to reduce pollutant and greenhouse gas emissions from motor vehicles. These funds will finance, for example, the replacement of the Moscow bus fleet with electric buses.

Moreover, the funds raised are planned to be used to finance the construction of 18 stations and 43.8 kilometers of lines, as well as the reconstruction of three stations and 4 km of lines of the Big Circle Line. Thanks to the opening of traffic on these sections of the Big Circle Line in 2023, at least 10,000 cars will no longer drive onto the streets of the city every day, which will lead to a reduction in pollutant emissions by 885.5 tons per year, and carbon dioxide by 20,900 tons per year. The project for the construction of lines and stations of the Big Circle Line includes measures aimed at reducing the negative impact on the environment, e.g. promoting a responsible attitude to the purity of atmospheric air, reduction of noise impact and other physical factors, protection of groundwater, as well as recycling of waste generated during construction[13].

Conclusions

The study revealed the increasing role of budget loans in the structure of public debt of Russian regions in recent years. They are an element of a pro-cyclical budget policy and do not contribute to the budgetary sustainability and independence of the regions, which is an obstacle to the use of green bonds as a tool of responsible financing.

However, in 2021 Moscow issued green bonds and thus became a pilot case among the Russian regions[14]. Formally, the purpose of this measure is to raise borrowed funds to finance the budget deficit or repay the previous debt obligations (bond loans, loans, etc.). This is determined by the requirements of the budget legislation, including the principles of the unity of the cash desk and the cumulative coverage of budget expenditures. Thus, all budget revenues are credited to a single budget account and budget expenditures cannot be linked to specific budget revenues and sources of financing the budget deficit.

The implementation of the 74th bond issue of Moscow in the amount of 70.0 billion rubles qualifies as an issue of green bonds aimed at reducing pollutants and greenhouse gas emissions from motor vehicles. Thus, the City of Moscow fits into the general global trend of territorial development and tackles social issues through active placement of ESG and green bonds.

Our analysis of regional practices in attracting borrowed funds through the issuance of securities revealed that, even though green bonds appeared only in Moscow, other tools of responsible financing are actively being developed. This means that in today's Russia the ESG agenda is popular.

Now it is impossible to say with absolute certainty what the future of the ESG segment of regional borrowings in Russia will be like, but most experts agree that, despite the sanctions, this vector of development will not be changed[15]. Thus, the priorities stay the same, and the ESG agenda remains extremely relevant for Russian companies, regions, and cities.

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[13] Proceeds from green bonds will be used to finance urban eco-projects. https://www.mos.ru/mayor/themes/7299/7288050 (Date of access: 01.08.2022).

[14] https://budget.mos.ru/budget/debt/bonds (Date of access: 01.08.2022).

[15] Miroshnichenko, K., Lapin, A.180-degree turn: what will be the ESG strategy of Russian companies under sanctions. https://tass.ru/ekonomika/14088043 (Date of access: 01.08.2022).

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