PE Population and Economics

Population and Economics 9(1): 259–287
DOI 10.3897/popecon9.e147932

RESEARCH ARTICLE

Estimation of the Household Debt-to-Income Ratios in Municipalities of Russia's Sverdlovsk Oblast in 2021-2022 Based on the Cartographic Method

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Received 22 March 2023 ♦ **Accepted** 21 January 2024 ♦ **Published** 20 June 2025

Citation: Marsiy AZ, Vorobyev MM (2025) Estimation of the Household Debt-to-Income Ratios in Municipalities of Russia's Sverdlovsk Oblast in 2021-2022 Based on the Cartographic Method. Population and Economics 9(1):259-287. https://doi.org/10.3897/popecon.9.e147932

Abstract

This article provides an assessment of the credit burden indicators of Russian households at the second level of administrative-territorial division (ATD) of the Russian Federation – at the level of municipalities. During the study, it was established that due to the lack of public statistics and a unified database on retail lending to citizens at the level below regional, it is not yet possible to conduct a correct analysis of this area of the credit market at the level of municipalities. Based on reports from three different credit bureaus (CBs), in the article we calculate one of the indicators of credit burden: the debt-to-income-ratio (DTI-Ratio) – which reflects how many income periods a household has to repay all its current debts before they mature. DTI-Ratio is calculated quarterly for the period 2021-2022 for the average household in each municipality of Russia's Sverdlovsk Oblast. A statistical study of DTI-Ratio dynamics was conducted for the eight quarters of 2021 and 2022. DTI-Ratio values at key periods were plotted on several maps to visualize the study results. No significant fluctuations in the dynamics of the DTI-Ratio indicator were found in any municipality of Sverdlovsk Oblast. On the contrary, according to data from each credit bureau and based on data on average per capita income from the Federal State Statistics Service (Rosstat), a decrease in DTI-Ratio was observed in most of Sverdlovsk Oblast's municipalities. An increase in DTI-Ratio values was observed only in two municipalities in the oblast. Key events in 2021-2022 have not significantly changed the dynamics of the DTI-Ratio. Additionally, a correlation analysis was performed of the relationship between quarterly and average annual DTI-Ratio values with data from DOM.RF on the rate of housing construction under shared construction agreement (SCA). A strong correlation between the data from DOM.RF and the data from reports from all three credit bureaus was found only in the Yekaterinburg urban district. At the same time, the DTI-Ratio values in this district as per the reports of the three credit bureaus remained in the same range (1-6 points) during the studied period. The development of primary housing construction and

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the growth of the households' credit portfolio in Yekaterinburg did not cause an increase in DTI-Ratio values during the studied period; the debt burden of households in Yekaterinburg remained at the same level.

Keywords

consumer lending, household debt burden, debt-to-income-ratio, credit bureau, shared construction agreement

JEL codes: E50, D14, I31

Introduction

The purpose of this article is to estimate for the first time the credit burden of Russian households at the level of municipalities based on the cartographic method. The object of the study is the debt burden of households in municipalities of the Sverdlovsk region of Russia. The article also studies the relationship between the debt burden of households and the rate of housing construction in the region.

Availability of consumer credit is an important macroeconomic indicator. On the one hand, consumer credit plays an important role in the household economy, allowing individual households to obtain funds to meet their needs – purchase goods and services, buy or build their own housing, start a family. On the other hand, uncontrolled and excessive lending to individuals can lead to a deterioration in the financial well-being of the indebted population and create default risks for the entire financial system. Therefore, as part of the monetary policy, the state tries to forecast the level of the maximum credit burden of citizens in time and take appropriate economic measures to avoid social upheavals.

In recent years, the consumer lending industry in Russia has continued to grow rapidly. According to the Central Bank of Russia, the total portfolio of loans to resident individuals has more than doubled over the past five years, amounting to 36.503.668 million rubles as of 10/01/2024. During the period under review, the consumer credit portfolio grew at a rate that outpaced the inflation. Despite a short-term decline in consumer lending in the first quarter of 2022, the rate of issuance of new loans and credits had exceeded the pre-crisis level by the end of 2022.

At the end of 2023, more than half of the loan portfolio of individuals in Russia (53.8%) consisted of mortgage loans. The second largest type of consumer lending is unsecured consumer loans, making up more than 44.0% of the market volume at the end of 2023. The remainder of the portfolio includes all other types of loans and debt (Bank of Russia 2025b).

The level of indebtedness of the population can be assessed using several calculated indicators: credit burden indicators such as DTI-Ratio, debt burden indicator, credit penetration, total debt burden per capita, share of unique credit users, etc.

Due to the growth of the consumer lending market in Russia, regulatory authorities and credit institutions are constantly developing new methods for assessing the solvency of borrowers in order to minimize default risks on outstanding loans and debt, which can have a negative impact on the entire economy of the country. Thus, since January 1, 2024, the Federal Law No. 601-FZ "On Amendments to the Federal Law 'On Consumer Credit (Loan)'" dated December 29, 2022, obliges all credit and microfinance organizations to calculate the debt burden ratio (DBR) – the ratio of the monthly expenses for servicing all

financial obligations to the average monthly income of the client. Depending on the value of the individual DBR of the borrower, the Bank of Russia's macroprudential limits (MPL) come into force – measures to limit unsecured consumer lending by reducing the share of risky loans (credits) in the total volume of issuances. MPLs are established by the Bank of Russia separately for banks and microfinance organizations (Bank of Russia 2025a).

At the same time, most credit institutions adhere to a comprehensive approach to assessing the indebtedness of clients, i.e. they calculate several credit load indicators at once, form their own scoring model for potential borrowers, and determine an individual credit rating for each client.

Given the current economic situation, the task of correctly assessing the credit burden of citizens is becoming an important task for Russian financial market (Frolova 2018, 2021). The Bank of Russia, commercial banks, analytical agencies, and other financial institutions regularly assess the level of population's indebtedness.

Based on the analysis of citizens' credit burden, the state also ensures legislative protection of borrowers' rights in case of their insolvency. For example, Federal Law No. 474-FZ dated August 4, 2023, "On Amending the Federal Law 'On Insolvency (Bankruptcy)' and Certain Legislative Acts of the Russian Federation," expanded opportunities for debt write-offs through out-of-court bankruptcy procedures. Now, individuals can independently declare out-of-court bankruptcy by applying through multifunctional centers. Legal agencies also provide citizens with services to support both judicial and out-of-court bankruptcy procedures. At the same time, the State Duma has initiated discussion of draft law No. 721174-8 on combating the activities of unscrupulous "anticollection-lawyers," in particular, the issue concerns tightening the requirements for advertising such services. Pursuant to Federal Law No. 348-FZ dated July 24, 2023, "On Amending Certain Legislative Acts of the Russian Federation," from January 1, 2024, individuals are now able to obtain six-month credit holidays. According to Federal Law No. 323-FZ dated July 10, 2023, "On Amending the Criminal Code of the Russian Federation and Articles 150 and 151 of the Criminal Procedure Code of the Russian Federation," the Criminal Code of the Russian Federation was supplemented with provisions holding individuals accountable for illegal activities related to recovering overdue debts from borrowers. The Federal Bailiff Service exercises constant oversight over the professional collection agencies in Russia.

For a more visual interpretation of the results of macroeconomic research, the cartographic method is used in modern science. In international practice, the cartographic method has already been used several times to assess the level of population's indebtedness. Thus, the US Federal Reserve (The Fed 2025) publishes an interactive map showing the value of the DTI-Ratio (debt-to-income ratio) at the US state level and on a time scale (Figure A1). A similar map even further down to the level of US counties can be found on the website of the American analytical center Urban Institute (Debt in America 2025). This map illustrates the proportion of overdue debts that are being collected by collection agencies. The resource also allows the share of different types of loans to be seen (for example, medical or student loans) for different categories of the population.

The German company Creditreform Boniversum GmbH has published the "Atlas of German Debtors" (*German: SchuldnerAtlas Deutschland*) (SchuldnerAtlas Deutschland 2025). The publication contains two maps showing the proportion of people with high levels of debt (*German: Überschuldung*) among different regions of the federal republic (*German: Kreis / Landkreis*). The company page has a selection of different editions of the atlas for downloading.

The American news agency Bloomberg published a study of the DTI-Ratio in the budgets of the provinces of the People's Republic of China (Scott 2023) and presented the results of the analysis, including in the form of a map of the ratio of budget debt to provincial revenues (Figure A2).

In Russia, the studies of the level of indebtedness of the population by region are being conducted by Bank of Russia, Russian credit history bureaus, some scientific institutions (Bank of Russia 2018; Bessonova and Tsvetkova 2023; Bychkov et al. 2024).

To date, the Russian scientific community has not yet attempted to delve into mapping credit burden indicators at the municipal level. During 2024, with the support of the Trinfico Investment Group, three identical analytical reports from three of the largest credit bureaus with aggregated anonymized data on loans of the population in municipalities of Russia's Sverdlovsk Oblast were received, as well as a report on the DOM.RF's analytical service «Prodoma» with data on housing construction under a shared construction agreement (SCA) in the cities of Sverdlovsk Oblast. Based on the studied data from partners, as well as on the open data of municipal statistics of the Federal State Statistics Service (hereinafter referred to as Rosstat), a comprehensive analysis of the debt burden of the population of Sverdlovsk Oblast was conducted. This article examines the problems of studying household debt burden at Russia's second level of administrative-territorial division, calculates one of the key indicators of the population's credit burden – DTI-Ratio – and provides an assessment of the relationship with the growth rate of housing construction in municipalities of Sverdlovsk Oblast.

Methods and data

Sverdlovsk Oblast: economic and geographical position

The object of the study is the debt burden of the average household in the municipalities of Sverdlovsk Oblast. This region was not chosen by chance as the geographical basis for the study.

Firstly, Sverdlovsk Oblast is one of the most urbanized regions of the country. Most municipalities are urban districts that correspond to the boundaries of agglomerations of large and small cities. These administrative-territorial units correspond to cities of regional significance – cities with populations of more than 15,000, centers of economic activity and housing construction, as per data from DOM.RF. Sverdlovsk Oblast is a strategically important industrial region for Russia. It is the largest center of ferrous and non-ferrous metallurgy in Russia, a developed center of mechanical engineering, and the cultural, economic, and scientific center of the Ural Federal District. As of December 2022, most of the employed population of the region (more than 51.2%) worked in the manufacturing industry and in industrial production (Sverdlovskstat 2022). Therefore, the study of the population's indebtedness, the analysis of factors influencing the debt burden, and the understanding of the latest socio-economic trends in this region are of great importance for the development of the entire country.

Secondly, the region has clearly defined municipal boundaries. According to the Regional Law of Sverdlovsk Oblast No. 34-OZ "On the administrative-territorial structure of Sverdlovsk Oblast" dated April 13, 2017, as of August 2021, the region includes 94 municipalities (Official website of the Government of Sverdlovsk Region 2025):

- 68 urban districts, including 4 closed administrative-territorial units (ZATOs),

- 5 municipal districts,
- 5 urban settlements,
- 16 rural settlements.

The geographical coordinates of the boundaries between municipal entities of Sverdlovsk Oblast are determined by the Regional Law No. 95-OZ "On the boundaries of municipal entities located on the territory of Sverdlovsk Oblast," dated July 20, 2015. As reported by SberIndex geoanalytics, the analysis of data at the level of municipal entities is complicated by the transformation of the structure of territorial units: boundaries, types of administrative units, their names, and OKTMO codes (All-Russian Classifier of Territories of Municipal Entities, an important unique identifier for geoanalytics) can rapidly change in Russia. This must be taken into account during research using the cartographic method and when working with data on municipality indicators (SberIndex 2024).

In 2021, the process of delimitation (*Latin: delimitatio "marking out"*) of the borders of Sverdlovsk Oblast in disputed areas with neighboring regions, as well as between municipalities within Sverdlovsk Oblast itself, was completed. The time interval of observations in this article covers 2021-2022, therefore Sverdlovsk Oblast ATD with its clearly demarcated boundaries of recent years is most suitable for the application of the cartographic research method. The article examines debt burden indicators in 73 municipal entities of the region: 68 urban districts and 5 municipal districts.

Data sources for calculations

The main sources of initial data on the finances of the population are national central banks, state statistical services, and credit bureaus (European Central Bank 2022). In Russia, data on per capita income and expenditure of the population is published in the public domain by the Federal State Statistics Service (Rosstat). Rosstat publishes data at both the regional and municipal levels from its Database of Municipality Indicators (BDPMO) (Federal State Statistics Service 2025). The most important macroeconomic indicator for the article is "The volume of social payments to the population and taxable cash income of the population by municipal district (urban district)." This indicator characterizes the volume of funds received by the permanently residing population within a municipal district (urban district). The calculation is carried out taking into account the available data generated by government agencies that keep records of income and payments to the population: tax authorities (on the size of the tax base when calculating the tax on income of individuals and individual entrepreneurs), bodies of the Pension Fund of the Russian Federation (on the size of pensions and benefits paid out) and executive authorities of the constituent entities of the Russian Federation (on unemployment benefits and welfare benefits paid when providing social support measures and other types of targeted social assistance to the population).

The Bank of Russia publishes monthly data on the state of the consumer portfolio of individuals at the level of the constituent entities of the Russian Federation on its official website (Bank of Russia 2025b). However, there are no publicly available statistics on loans to the population at the municipal level. There is also a lack of detailed data on all types of loans: the Bank of Russia publishes separate reports on the total consumer portfolio of individuals, separate reports on mortgage lending and microloans. More detailed segmentation of aggregated anonymized data on loans to the population at the municipal level can be provided by Russian credit bureaus.

Table 1 presents a list of the main sources of data for the study with characteristics of their availability (free/paid access), as well as an indicator of the presence with a regional breakdown.

Table 1. Sources of data for the study

Data				
No.	**Data source**	**Free access**	**Paid access**	**Regional data breakdown indicator**
1	Rosstat	1. Population size 2. Number of private households and their composition according to the 2020 population census 3. Income and expenses of the population: – Average salaries – Nominal cash income (before taxes and fees) – Disposable cash income – Real cash income (adjusted for inflation) – Real disposable cash income – Per capita cash income – Consumer spending – Composition of cash income by sources of formation – Use of cash income – Municipal statistics indicators – Per capita income	–	Federal subjects of Russia and municipalities
2	Russian Credit Bureaus	Quarterly reports (market averages)	Aggregated data for the entire market: 1. Month of opening of the loan agreement (last day of the month) from 01/01/2019 to 12/31/2023 2. Product type: mortgage, car loan, unsecured consumer loan, credit card, microfinance organization – volumes of loans issued by banks and microfinance organizations, volume of debt in rubles (including overdue).	Federal subjects of Russia and municipalities

Data				
No.	**Data source**	**Free access**	**Paid access**	**Regional data breakdown indicator**
			3. Sign of the presence of collateral 4. Range of number of days overdue on loan as of 12/31/2023. 5. Number of issued loans 6. Amount of rubles of loans issued 7. OSZ for all current loans as of 12/31/2023, rubles 8. Number of active (with outstanding debt) loans as of 12/31/2023 9. Region of registration 10. Municipality registration 11. Average monthly payment for all loans.	
3	DOM.RF	Analytics of the "Prodoma" service	Subscription to specialized reports with data on the construction and sales of residential premises under SCA based on data from the Unified Information System for Housing Construction (UISHC): 1. Regional analytics 2. Comparison with competitors 3. Housing construction market analytics 4. Analytics on developers 5. Analytics on housing estate	Federal subjects of Russia and municipalities

Why is total DTI-Ratio calculated?

In this study, the DTI-Ratio (debt-to-income ratio) indicator is calculated. DTI-Ratio shows the number of income periods in which the entire current debt can be repaid early. In other words, the ratio shows how much of the borrower's monthly income will need to be saved to pay off the entire debt early. DTI-Ratio is a classic debt burden indicator used in practice by many international credit organizations regulating financial institutions, investment companies, credit bureaus, research centers, etc. (The Fed 2025). The indebtedness of the

region's population is assessed on the basis of the DTI-Ratio per household in the municipalities of the Sverdlovsk Oblast.

For the purposes of the study, the overall DTI-Ratio is calculated for the average household without decomposing the debt by type of loan (mortgage, non-mortgage, microfinance organization, etc.). The authors of the article believe that the credit burden of one household should be assessed by the total volume of debt, and not by a separate type of credit/loan. In future studies, it is proposed to conduct a separate analysis of the DTI-Ratio for each type of loan, but for other purposes: identifying the most stressed lending segment.

In addition, in this study, the income part of DTI-Ratio is the entire average per capita monthly income of all household members based on Rosstat data. This will make it possible to avoid making distinctions between different categories of the population and to consider every resident of the average household in the region. At the same time, the revenue part of the DTI-Ratio will not take into account the mandatory maintenance of the subsistence minimum or the minimum wage (MW), since the average monthly income per capita in the region is 28,364 rubles as of the end of 2022 (Federal State Statistics Service 2025). When subtracting the subsistence minimum or minimum wage from the income portion, the DTI-Ratio indicator values will be overstated in almost all municipalities, with the exception of Yekaterinburg and Verkhnyaya Pyshma. In future studies, the authors propose to conduct a separate analysis of the debt burden taking into account the preservation of the part of income necessary for household existence in large cities with higher salaries.

DTI-Ratio is calculated using a formula (1):

$$DTI = \frac{\Sigma D / N_{\text{h}}}{l_m \cdot S_{\text{h}}}, \quad (1)$$

where ΣD is the total debt of all households as of the reporting date, N_{h} – is the number of households, l_m – is the average per capita income, S_{h} – is the average number of people in a household.

In the context of this study, the most important calculation of DTI-Ratio is based on the average per capita income of members of one average household according to municipal statistics of Rosstat (Federal State Statistics Service 2025).

Why is DTI-Ratio calculated based on data from three credit bureaus? The problem of data interoperability

As of 01/29/2025, five credit bureaus were entered into the state register of the Bank of Russia (Bank of Russia 2025c). The Bank of Russia maintains the Central Catalogue of Credit Histories, which contains the title section of credit history: unique identifiers, full name, tax identification number, as well as information about which credit bureaus store the credit history of citizens (Bank of Russia Regulation No. 758-P 2021). According to the Federal Law No. 218-FZ "On Credit Histories" dated December 30, 2004, all credit and microfinance organizations are required to maintain and update the credit history for all issued loans and credits in one or more credit bureaus. Systemically important credit institutions (13 of the largest Russian banks with a consumer loan portfolio of 100 billion rubles or more) are required to transfer the credit history of borrowers to at least 2 credit bureaus (Federal Law of July 31, 2020 No. 302-FZ). In practice, banks can store borrowers' credit histories simultaneously in three credit bureaus.

Credit bureaus collect anonymized aggregated data from their database, but reports from an individual bureau on the population's debt portfolio are not complete without data from other credit bureaus. In addition, it is not yet possible to combine data from all credit bureaus in the municipal context due to the duplication of borrowers' credit histories in several bureaus.

In connection with the above, the scientific community does not yet have a tool for aggregating reliable data on the state of the consumer lending market at municipal levels throughout the country. In the practical part of the work, an experiment is conducted to calculate and compare the DTI-Ratio indicator based on data from three credit bureaus on the volume of consumer lending using the example of municipalities in Sverdlovsk Oblast. For this purpose, information reports were purchased from three of the largest credit bureaus in Russia. The attribution of the population's debt burden indicators in the credit bureau reports was determined based on the registration address of the individual with the credit history stored in the bureau.

This article does not publish the reports themselves or their excerpts in accordance with the agreement with the credit bureau. Based on aggregated data from reports and public data from Rosstat, our own calculation of the DTI-Ratio indicator is made. However, in order to make it impossible to identify data from the report of any particular credit bureau, in the article the three bureaus are designated as "CB 1", "CB 2" and "CB 3."

Credit bureau reports are statistical reports based on aggregated data (by municipalities of Sverdlovsk Oblast) on the credit portfolio of individual clients who had permanent registration in the municipality of the region as of September 1, 2024. The reports and this article do not include any information about the subjects of the credit history, based on the reports or the analysis of the data it is impossible to determine the subject of the credit history. The report does not contain any personal data of borrowers.

Use of geographic information systems

Geographic information systems (GIS) are a key tool in mapping the population's credit burden indicators. They combine geographic data with information on credit liabilities, creating detailed maps that display the current situation in various periods and municipalities of the Russian Federation. GIS are also useful for forecasting future lending trends and developing risk management strategies (Serapinas 2005).

Since the cartographic research is carried out within one region, a free web service Datawrapper was chosen, which allows the user to create maps based on their own geodata in JSON format. Geodata with the boundaries of municipalities of Sverdlovsk Oblast were provided by LLC NextGIS, Moscow, in 2024.

Cartographic research method

The cartographic method of research involves the creation of maps that display certain indicators on a geographical basis. The main advantage of the cartographic research method is the ability to identify spatial and temporal patterns of the studied indicators or phenomena (Berlyant 1986, 1988). In the case of analyzing the population's credit burden, maps help to visualize the distribution of debt among the population in different regions of the country (Anselin 2022). This allows us to understand the socio-economic situation of the regions and develop measures of state support for them (Tikunov et al. 2023).

The study of indicators of the credit burden of households at the second level of administrative-territorial division (ATD) of Russia is currently an innovation. Mapping of research results can be used to solve several problems:

1. Forecasting default risks of the financial system at the level of Russian household finances.
2. Timely regulation of monetary policy in accordance with identified trends.
3. Access to a new tool for assessing the debt burden of the population, raising awareness of local authorities about the financial situation of households.
4. Assessment of population income, identification of the hidden part of household income.
5. Adaptation of housing construction programs, state support programs, and preferential lending programs to regional characteristics and to the needs of households with a high debt burden.

DTI-Ratio calculation results

DTI-Ratio was calculated using the basic formula (1) quarterly for the period 2021-2022. The calculation results are presented in Appendices 3-5. For visual comparison of the obtained indicators, three sets of maps were created using the cartographic method in the Datawrapper application (Figures 1, 2, and 3). Figures 1-3 show the distribution of DTI-Ratio values in 5 quantiles ({1:3}; {4-6}; {7-9}; {10-12}; {13+}, minimum DTI-Ratio = 1; maximum found DTI-Ratio = 19) within the boundaries of municipalities of Sverdlovsk Oblast for three reporting dates: the end of the 3rd quarter of 2021, the end of the 1st quarter of 2022, and the end of the 3rd quarter of 2022. These reporting dates were chosen because the third quarter of each year accounts for the largest increase in household debt, and the Russian economy faced major shocks in the first quarter of 2022. The DTI-Ratio 1, DTI-Ratio 2, and DTI-Ratio 3 indicators correspond to the data from the CB 1, CB 2, and CB 3 reports.

Based on the compiled dynamic series of DTI-Ratio values for the eight quarters of 2021-2022, it seems possible to make the following observations:

1. The DTI-Ratio value has not changed significantly over 2 years according to the database of each credit bureau.

   Thus, during the studied period, a slight fluctuation in DTI-Ratio of 1-3 points occurred in the Ivdel urban district in the very north of the region. A similar situation was observed in the Shali urban district. However, in both regions, the DTI-Ratio trend has been negative over the two years, meaning that household debt burden has been decreasing.

   If we consider the difference in the average DTI-Ratio for 2021 and 2022, we can trace the following trend: in almost all municipalities of Sverdlovsk Oblast, the debt burden of households either did not change or decreased. According to CB 1, the exceptions were Turinsky Urban District and Kachkanarsky Urban District; according to CB 2, Kachkanarsky Urban District; according to CB 3, Kachkanarsky Urban District and Aramilsky Urban District. However, in the aforementioned urban districts, the annual DTI-Ratio growth for 2021-2022 was only one point, i.e. the revenue portion of the DTI-Ratio increased by one average monthly household income.

   A decrease in DTI-Ratio over two years is observed in 21 municipalities according to CB 1, in 37 municipalities according to CB 2, and in 25 municipalities accord-

ing to CB 3. The range of DTI-Ratio abbreviations in these municipalities is from -3 to -1.

The average annual DTI-Ratio values did not change in 38 municipalities according to CB 1, in 23 municipalities according to CB 2, and in 42 municipalities according to CB 3.

Thus, the authors of the article conclude that the ability of households in Sverdlovsk Oblast (with the exception of three urban districts) not only to service, but also to repay their entire debt early has remained the same, and in some municipalities has even improved.

2. It was not possible to calculate DTI-Ratio for some municipalities for two reasons: due to the lack of official statistics from Rosstat on average per capita income in several municipalities (there are four closed administrative-territorial entities in the region: the Svobodny, Uralsky, Novouralsky, and Lesnoy districts) or due to the lack of information on loans of individuals registered in these municipalities in the CBs' databases during the period under study (Pelymsky urban district, Sosvinsky urban district, Makhnevskoye urban district, etc., depending on the bureau).
3. Absolute DTI-Ratio values vary significantly depending on which credit bureau's data they were calculated according to.

   Thus, in the urban district of Verkhnyaya Pyshma, DTI-Ratio decreased over 2 years by 2 points according to CB 1, by 1 point according to CB 2, and by 3 points according to CB 3. In Krasnoufimsky District, the following situation was observed: according to CB 1, DTI-Ratio has not changed; according to CB 2, DTI-Ratio has fallen by two points; according to CB 3, DTI-Ratio has fallen by 1 point.

   This confirms that different bureaus store different amounts of data on citizens' credit histories. At the same time, data from different bureaus at the municipal level cannot be compared with one another based on bureau reports, cleared of duplicate information, or combined into one database for the region, since the data is aggregated and anonymized.

Table 2 shows statistics on DTI-Ratio changes for 2021-2022.

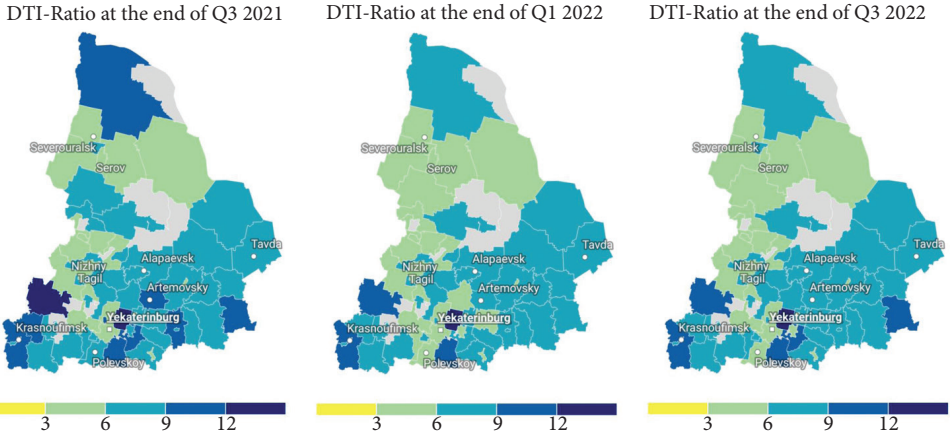

Figure 1. Distribution of Debt-to-income-ratio of households in municipalities of Sverdlovsk Oblast based on data from the CB 1 report. *Source:* CB, Rosstat. Created with Datawrapper

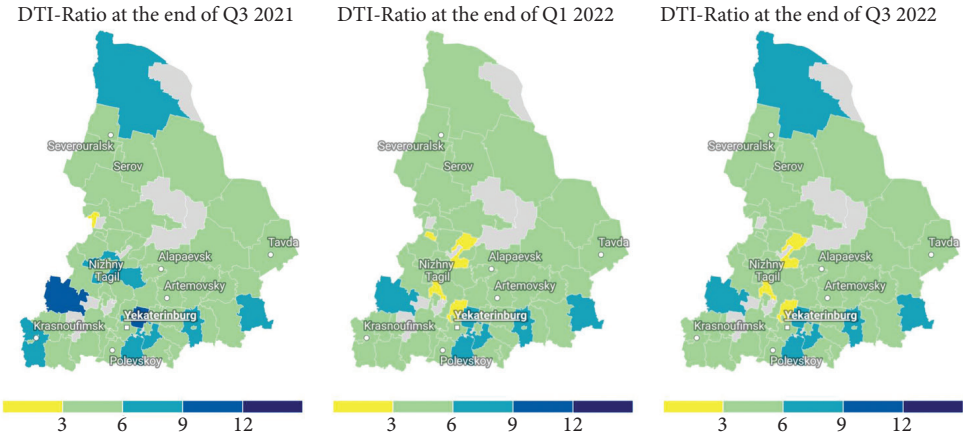

Figure 2. Distribution of debt-to-income-ratio of households in municipalities of Sverdlovsk Oblast based on data from the CB 2 report. *Source:* CB, Rosstat. Created with Datawrapper

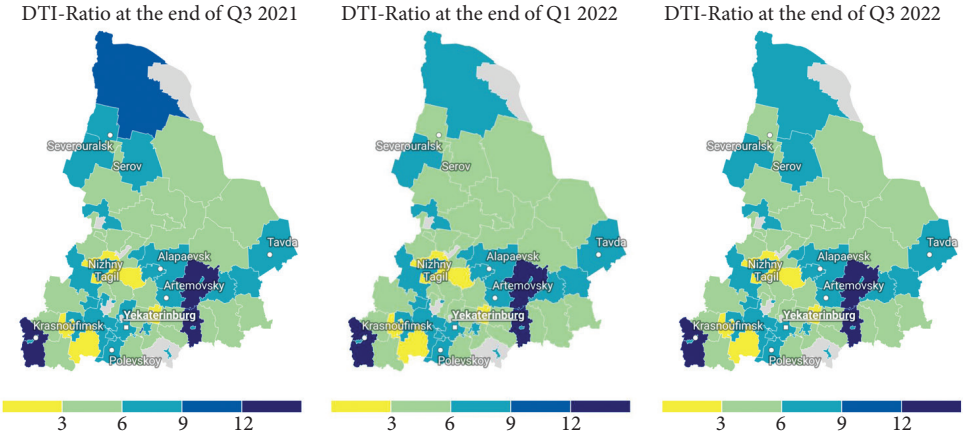

Figure 3. Distribution of Debt-to-income-ratio of households in municipalities of Sverdlovsk Oblast based on data from the CB 3 report. *Source:* CB, Rosstat. Created with Datawrapper

Table 2. Statistics on DTI-Ratio changes for 2021-2022 in Sverdlovsk oblast's municipalities

Change in DTI-Ratio value over 2 years, points	Number of municipalities in Sverdlovsk Oblast where DTI-Ratio was studied		
	CB 1	CB 2	CB 3
-3	–	2	2
-2	4	10	1
-1	17	25	17
0	38	23	42
1	2	1	2
no data	12	12	9
Total municipalities:	73	73	73

Interrelation with data of DOM.RF

Calculating credit burden indicators such as DTI-Ratio is only the first stage in studying the level of indebtedness of the population. For a comprehensive assessment of the debt burden, it is also important to identify the socio-economic factors that influence the level of the burden.

Data on the construction of apartments under shared construction agreements (SCA) in the cities of Sverdlovsk Oblast were taken from the report "Analytics of residential complexes" of the "Prodoma" service of DOM.RF. The data in the "Housing Construction Analytics" report correspond to the data from the Unified Information System for Housing Construction (UISHC). This block includes the indicators "Apartments sold under SCA, rubles," "Number of apartments sold under SCA, units," and "Number of apartments under construction under SCA, units." Data can be obtained monthly from January 2021.

According to the report data, in 2021 in Sverdlovsk Oblast, apartments under SCA were sold only in the city of Yekaterinburg: 166 units, the sale price of all apartments amounted to a total of 889.924.610 rubles. At the same time, only 3.248 apartments were being built under SCA in Yekaterinburg (2.907 units) and three other districts.

In 2022, a total of 2.183 apartments were sold under SCA for the amount of 10.662.190.004 rubles in four municipalities of Sverdlovsk Oblast. 92.3% of the apartments were located in Yekaterinburg. That year, 32.648 apartments were already built under SCA, 31.473 of which were also located in Yekaterinburg.

Since 2023, the pace of construction and sales under SCA has increased sharply. Already, 21.876 apartments have been sold under the SCA for a total amount of 120.178.966.894 rubles. 20.495 apartments were sold in Yekaterinburg, the rest were in the cities of Verkhnyaya Pyshma, Nizhny Tagil, and Berezovsky. 40.601 apartments were built under the SCA, of which 37.210 were in the city of Yekaterinburg, the rest were in six other districts of Sverdlovsk Oblast.

From the data of the report "Analytics of Housing Complexes" it follows that the majority of apartments under SCA are sold and built in the capital of Sverdlovsk Oblast. Since 2023, construction under SCA has been gaining momentum in other large cities of the region (Nizhny Tagil, Verkhnyaya Pyshma), but the range of data on the credit burden and income of the population only covers 2021-2022, so it is not yet possible to calculate DTI-Ratio for 2023. In addition, construction under SCA during the studied period took place in only seven municipalities out of 73, except for the urban district of Yekaterinburg. Since the territorial affiliation of households to municipal entities of the region was determined through the aggregation of data on the addresses of registration of household members, it also seems possible to conclude that the growth of construction under SCA in Yekaterinburg is due to the movement of the population from other municipal entities to the capital of the region. It is probably possible to conclude that residents of other municipalities (with permanent residency registration) took out mortgage loans to purchase housing mainly in the city of Yekaterinburg.

With the available volumes of data on construction under SCA, the authors conclude that primary housing construction in the region is concentrated in Yekaterinburg, the municipality with the largest volume of accumulated debt on all types of loans and credits in each reporting period. Therefore, only for Yekaterinburg there is a positive statistical correlation between DTI-Ratio and the rate of construction of apartments under SCA. The DTI-Ratio value according to the reports of all three credit bureaus in Yekaterin-

burg varies between 1 and 6 points. At the same time, there are no significant fluctuations in DTI-Ratio according to data from each of the three credit bureaus (no more than 1 point between quarters of one year). Taking into account the higher per capita income than in other municipalities of the region (on average 2-3 times higher), the average debt burden of households in Yekaterinburg is estimated to be as not high. Households located in the city are able to repay all accumulated debt early with 1-6 monthly per capita incomes of all household members.

Conclusion

In the framework of this study, the impossibility of combining databases of different credit bureaus on loans of the population has been found. Different bureaus store incomparable and duplicate volumes of information about citizens' loans. In this regard, at the current moment, the only correct method for studying the level of indebtedness of the Russian population at the second level of the ATD is the calculation of credit load indicators separately based on data from each bureau. Only by comparing the unique values of credit burden indicators from the reports of all credit bureaus can we make at least an approximate assessment of the debt burden of Russian households at the municipal level.

We found that the DTI-Ratio values of households in municipalities of Sverdlovsk Oblast, according to data from each of the three largest credit bureaus, did not undergo significant changes during 2021-2022. This indicates that, overall, the debt burden of households in the region remained at the same level.

In 20-30% of municipalities, depending on the bureau's initial database, there was even a decrease in the DTI-Ratio indicator, i.e. the credit burden of households in these municipalities decreased.

Only two municipalities showed an increase in the average annual DTI-Ratio indicator, but it did not exceed one point, i.e. one average monthly household income, which could be used to pay off accumulated debt early.

The cartographic research method made it possible to visualize the DTI-Ratio dynamics for all municipalities of Sverdlovsk Oblast at once. No effect of global events in 2021-2022 was detected, in particular at the end of the first quarter of 2022 (the consequences of the COVID-19 pandemic, the onset of Special military operation). There were no sharp or cyclical changes in the DTI-Ratio indicator during the reporting dates.

Based on data from DOM.RF, it was possible to establish a positive correlation between DTI-Ratio and the rate of construction of apartments under SCA only in the city of Yekaterinburg. In 2021-2022, the construction and sale of apartments under SCA in Sverdlovsk Oblast were almost completely limited to the urban district of Yekaterinburg. This municipality also has the largest volume of accumulated debt for all types of loans and debts. When calculating DTI-Ratio for average households in Yekaterinburg, the large amount of debt is offset by higher per capita incomes in the city. A similar situation is observed in the city of Verkhnyaya Pyshma.

When searching for factors influencing the credit burden of households in other municipalities of Sverdlovsk Oblast, it has not yet been possible to find a connection with the rates of housing construction. The authors believe that future studies of credit burden indicators require a larger set of data on household loans over several years and on a monthly basis, as well as for other regions of the country. This will allow us to study a wider time range

of the dynamics of credit load indicators and identify spatial patterns on a map of the entire country.

The conducted study of DTI-Ratio indicators in Sverdlovsk Oblast makes it possible to:

1. assess the degree of indebtedness and the level of debt burden of households in municipalities of Sverdlovsk Oblast,
2. predict default risks of households with high DTI-Ratio in municipalities of Sverdlovsk Oblast,
3. adapt housing construction and government support programs for households with high debt burdens in individual municipalities of Sverdlovsk Oblast.

Promising areas for further research include the analysis of each segment of the credit market: mortgages, consumer loans, microloans, etc. In addition to the DTI-Ratio indicator, there are a number of other indicators of the population's credit burden, for example, the debt burden indicator (DBI), credit penetration into the population, the share of unique users of credit products, etc. Based on the available data from the credit bureaus, it is possible to calculate each indicator separately by type of loan, both at the regional and municipal levels.

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Acknowledgments

The authors of the article thank the partners who provided data for the study for their cooperation: the Federal State Statistics Service, JSC DomRF, IG Trinfico, JSC NBKI, JSC BKI SB, JSC OKB, LLC NextGIS.

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Annex

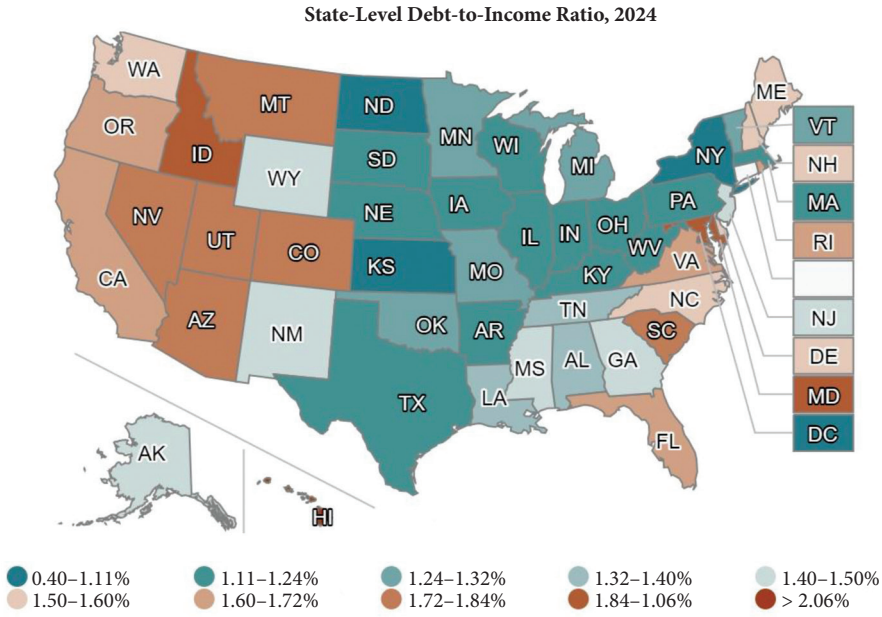

Figure A1. EFA: Household Debt, URL: https://www.federalreserve.gov/releases/z1/dataviz/household_debt/state/map/#year:2024. *Source:* FRBNY Consumer Credit Panel/Equifax, Bureau of Labor Statistics

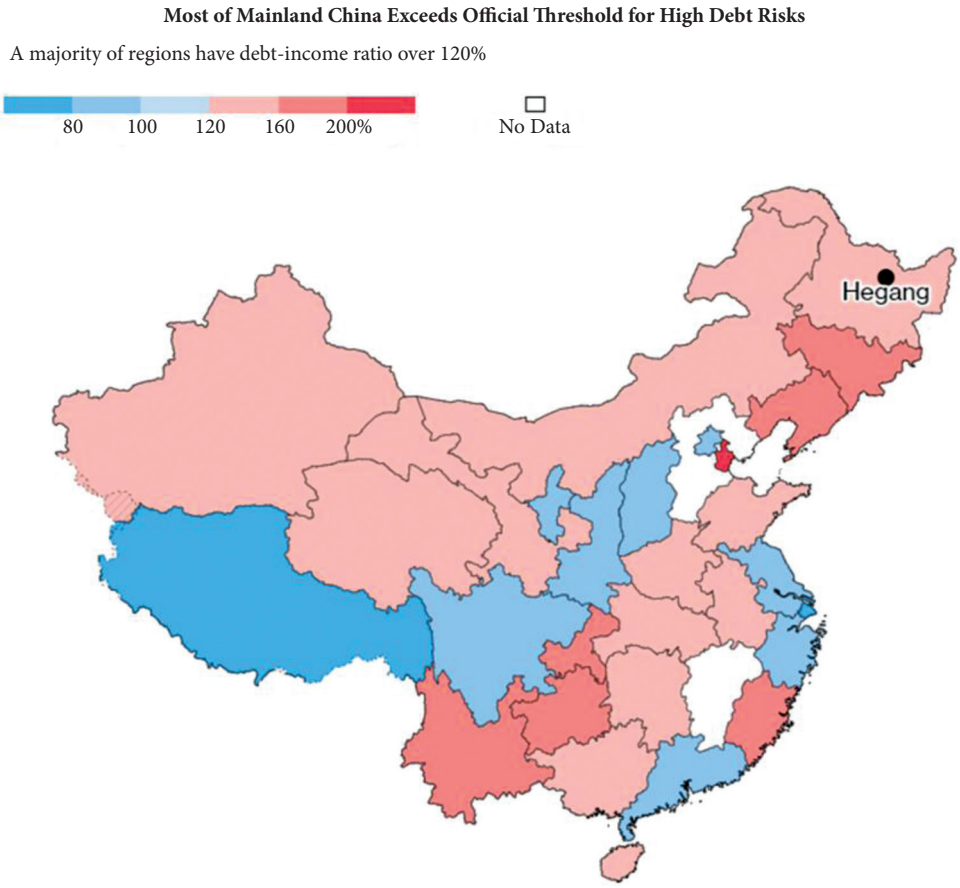

Figure A2. China's $23 Trillion Debt Headache, URL: https://www.bloomberg.com/news/newsletters/2023-05-22/china-s-23-trillion-debt-headache. *Source:* Bloomberg calculations based on provincial government budget reports. *Note:* The income of provinces is defined as the combined revenue from the general public budget and the government fund budget, as well as transfer payments from the central government. Data insufficient or unavailable for calculations for Hebei and Jiangxi. The figure for Heilongjiang is an estimate based on partially released official data.

Table A1. DTI-Ratio values based on BKI 1 data

№	OKTMO	Name of the municipality (district/urban district)	DTI1: quarter.1 2021	DTI1: quarter.2 2021	DTI1: quarter.3 2021	DTI1: quarter.4 2021	DTI1: quarter.1 2022	DTI1: quarter.2 2022	DTI1: quarter.3 2022	DTI1: quarter.4 2022
1	65758000	Sukhoy Log urban district	5	5	6	6	5	5	6	6
2	65707000	Bogdanovich urban district	5	5	6	6	6	6	6	6
3	65623000	Kamyshlovsky district	8	9	9	10	7	7	7	7
4	65718000	Pysminsky urban district	7	7	8	8	7	7	7	7
5	65724000	Talitsky urban district	6	6	7	7	7	6	7	7
6	65725000	Tugulym urban district	8	8	9	9	8	8	9	9
7	65639000	Slobodo-Turinsky district	6	7	8	8	7	7	8	8
8	65706000	Beloyarsk urban district	8	9	9	10	8	8	9	9
9	65712000	Kamensk urban district	6	7	7	8	7	7	7	7
10	65608000	Baykalovsky district	6	6	6	7	6	6	7	7
11	65711000	Irbit urban district	6	6	7	7	7	7	7	7
12	65713000	Artyomovsky urban district	8	8	9	9	8	8	8	8
13	65713000	Berezovksy urban district	10	11	12	13	12	11	12	13
14	65762000	Malyshevsky urban district	5	5	5	5	5	5	5	5
15	65728000	Alapayevsk urban district	5	6	6	7	6	6	6	6
16	65771000	Alapayevskoye urban district	7	7	8	8	7	7	8	8
17	65750000	Nizhnaya Salda urban district	6	6	7	7	6	6	6	6
18	65708000	Verkhnesaldsky urban district	4	4	4	5	4	4	4	4
19	65720000	Rezh urban district	5	6	6	6	5	5	6	6
20	65701000	Yekaterinburg urban district	3	4	4	4	4	4	4	4
21	65726000	Turinsky urban district	5	6	6	6	6	6	6	7

№	OKTMO	Name of the municipality (district/urban district)	DTI1: quarter.1 2021	DTI1: quarter.2 2021	DTI1: quarter.3 2021	DTI1: quarter.4 2021	DTI1: quarter.1 2022	DTI1: quarter.2 2022	DTI1: quarter.3 2022	DTI1: quarter.4 2022
22	65723000	Tavdinsky urban district	6	7	7	7	7	7	7	7
23	65756000	Serovsky urban district	5	5	5	6	5	5	5	5
24	65754000	Polevskoy urban district	5	6	6	6	5	5	5	6
25	65745000	Krasnoturyinsk urban district	4	4	4	4	4	4	4	4
26	65746000	Krasnoufimsk urban district	4	4	5	5	4	4	4	4
27	65645000	Taborinsky district	5	6	6	6	6	6	6	6
28	65753000	Pervouralsk urban district	5	5	5	5	4	4	5	5
29	65709000	Verkhotursk urban district	6	6	7	7	6	6	6	6
30	65721000	Sosvinsky urban district	ND	ND	ND	ND	ND	ND	ND	ND
31	65710000	Garinsky urban district	5	5	5	6	4	4	4	4
32	65716000	Novolyalinsky urban district	5	5	6	6	5	5	5	5
33	65743000	Kachkanar urban district	3	3	3	3	4	4	4	4
34	65705000	Achit urban district	8	8	9	9	8	8	8	8
35	65704000	Artinsky urban district	7	7	8	8	7	7	7	7
36	65713000	Krasnoufimsky district	9	9	10	10	9	9	9	10
37	65747000	Krasnoufimsk urban district	6	6	6	7	6	6	6	6
38	65741000	Kamyshlovsky urban district	5	6	6	6	6	6	6	6
39	65766000	Staroutkinsk urban district	ND	ND	ND	ND	ND	ND	ND	ND
40	65727000	Shalinsky urban district	10	11	12	13	10	10	10	10
41	65719000	Revda urban district	5	6	6	6	5	5	6	6
42	65736000	Degtjarsk urban district	7	7	8	8	8	7	8	8
43	65765000	ZATO Svobodny	ND	ND	ND	ND	ND	ND	ND	ND

№	OKTMO	Name of the municipality (district/urban district)	DTI1: quarter.1 2021	DTI1: quarter.2 2021	DTI1: quarter.3 2021	DTI1: quarter.4 2021	DTI1: quarter.1 2022	DTI1: quarter.2 2022	DTI1: quarter.3 2022	DTI1: quarter.4 2022
44	65760000	Upper Dubrovo urban district	ND	ND	ND	ND	ND	ND	ND	ND
45	65737000	Zarechny urban district	5	5	6	6	5	5	5	5
46	65767000	ZATO Uralskiy	ND	ND	ND	ND	ND	ND	ND	ND
47	65628000	Nizhneserginsky district	6	7	7	8	7	7	7	7
48	65759000	Biserksky urban district	ND	ND	ND	ND	ND	ND	ND	ND
49	65732000	Upper Pyshma urban district	4	4	5	5	3	3	3	3
50	65757000	Sredneuralsk urban district	7	8	9	9	8	8	8	8
51	65722000	Sysertsky urban district	8	9	10	10	9	9	10	10
52	65729000	Aramil urban district	ND	ND	ND	ND	ND	ND	ND	ND
53	65740000	Kamensk-Uralsk urban district	4	4	5	5	5	5	5	5
54	65752000	Novouralsk urban district	ND	ND	ND	ND	ND	ND	ND	ND
55	65714000	Nevyansky urban district	6	6	7	7	7	6	7	7
56	65733000	Upper Tagil urban district	6	6	7	7	6	6	6	6
57	65761000	Upper Neivinsky urban district	ND	ND	ND	ND	ND	ND	ND	ND
58	65751000	Lover Tagil urban district	4	5	5	5	5	5	5	5
59	65717000	Gornouralsk urban district	7	7	7	8	7	7	7	7
60	65734000	Upper Tura urban district	4	4	4	4	4	4	4	4
61	65748000	Kushva urban district	4	5	5	5	5	5	5	5
62	65744000	Kirovgrad urban district	3	3	4	4	3	3	4	4
63	65735000	Volchansk urban district	5	5	6	6	5	5	6	6
64	65755000	Severouralsk urban district	4	5	5	5	5	5	5	5
65	65764000	Pelym urban district	ND	ND	ND	ND	ND	ND	ND	ND

№	OKTMO	Name of the municipality (district/urban district)	DTI1: quarter.1 2021	DTI1: quarter.2 2021	DTI1: quarter.3 2021	DTI1: quarter.4 2021	DTI1: quarter.1 2022	DTI1: quarter.2 2022	DTI1: quarter.3 2022	DTI1: quarter.4 2022
66	65749000	Lesnoy urban district	ND	ND	ND	ND	ND	ND	ND	ND
67	65738000	Ivdel urban district	8	8	9	9	7	7	8	8
68	65742000	Karpi urban district	4	5	5	6	5	5	5	5
69	65715000	Lower Turinsky urban district	5	5	6	6	5	5	5	5
70	65713000	Makhnevskoe urban district	ND	ND	ND	ND	ND	ND	ND	ND
71	65730000	Asbest urban district	5	6	6	6	6	6	6	6
72	65763000	Reftinsky urban district	4	4	5	5	5	5	5	5
73	65739000	Irbit urban district	4	5	5	5	5	5	5	5

Table A2. DTI-Ratio values based on BKI 2 data

№	OKTMO	Name of the municipality (district/urban district)	DTI2: quarter.1 2021	DTI2: quarter.2 2021	DTI2: quarter.3 2021	DTI2: quarter.4 2021	DTI2: quarter.1 2022	DTI2: quarter.2 2022	DTI2: quarter.3 2022	DTI2: quarter.4 2022
1	65758000	Sukhoy Log urban district	4	4	4	4	4	4	4	1
2	65707000	Bogdanovich urban district	3	4	4	4	4	4	4	1
3	65623000	Kamyshlovsky district	7	7	8	8	6	6	6	1
4	65718000	Pysminsky urban district	4	4	4	5	4	4	4	1
5	65724000	Talitsky urban district	4	4	4	5	4	4	4	1
6	65725000	Tugulym urban district	6	7	7	7	7	7	7	1
7	65639000	Slobodo-Turinsky district	5	5	5	6	5	5	5	1
8	65706000	Beloyarsk urban district	7	7	8	8	7	7	7	1
9	65712000	Kamensk urban district	5	5	5	6	5	5	5	1

№	OKTMO	Name of the municipality (district/urban district)	DTI2: quarter.1 2021	DTI2: quarter.2 2021	DTI2: quarter.3 2021	DTI2: quarter.4 2021	DTI2: quarter.1 2022	DTI2: quarter.2 2022	DTI2: quarter.3 2022	DTI2: quarter.4 2022
10	65608000	Baykalovsky district	3	4	4	4	3	3	4	1
11	65711000	Irbit urban district	4	4	4	4	4	4	4	1
12	65713000	Artyomovsky urban district	5	5	5	5	5	5	5	1
13	65713000	Berezovksy urban district	8	8	9	9	8	8	8	1
14	65762000	Malyshevsky urban district	3	3	4	4	3	3	3	1
15	65728000	Alapayevsk urban district	3	4	4	4	4	4	4	1
16	65771000	Alapayevskoye urban district	4	4	4	5	4	4	4	1
17	65750000	Nizhnaya Salda urban district	3	4	4	4	3	3	3	1
18	65708000	Verkhnesaldsky urban district	2	3	3	3	2	2	2	1
19	65720000	Rezh urban district	3	4	4	4	4	4	4	1
20	65701000	Yekaterinburg urban district	3	3	3	3	3	3	3	1
21	65726000	Turinsky urban district	3	4	4	4	4	4	4	1
22	65723000	Tavdinsky urban district	4	5	5	5	5	5	5	1
23	65756000	Serovsky urban district	4	4	4	4	4	4	4	1
24	65754000	Polevskoy urban district	3	3	3	3	3	3	3	1
25	65745000	Krasnoturyinsk urban district	2	3	3	3	3	3	3	1
26	65746000	Krasnoufimsk urban district	3	3	3	3	3	3	3	1
27	65645000	Taborinsky district	4	4	4	5	4	4	4	1
28	65753000	Pervouralsk urban district	4	4	4	4	3	4	3	1
29	65709000	Verkhotursk urban district	4	4	4	4	4	4	4	1
30	65721000	Sosvinsky urban district	ND	ND	ND	ND	ND	ND	ND	ND
31	65710000	Garinsky urban district	3	4	4	4	3	3	3	1

№	OKTMO	Name of the municipality (district/urban district)	DTI2: quarter.1 2021	DTI2: quarter.2 2021	DTI2: quarter.3 2021	DTI2: quarter.4 2021	DTI2: quarter.1 2022	DTI2: quarter.2 2022	DTI2: quarter.3 2022	DTI2: quarter.4 2022
32	65716000	Novolyalinsky urban district	3	3	3	4	3	3	3	1
33	65743000	Kachkanar urban district	2	2	2	2	3	3	3	1
34	65705000	Achit urban district	5	5	5	5	4	4	4	1
35	65704000	Artinsky urban district	4	4	4	4	4	4	4	1
36	65713000	Krasnoufimsky district	5	6	6	6	5	5	5	1
37	65747000	Krasnoufimsk urban district	4	4	4	4	4	4	4	1
38	65741000	Kamyshlovsky urban district	4	4	4	4	4	4	4	1
39	65766000	Staroutkinsk urban district	ND	ND	ND	ND	ND	ND	ND	ND
40	65727000	Shalinsky urban district	8	8	9	9	7	7	7	1
41	65719000	Revda urban district	4	4	4	4	4	4	4	1
42	65736000	Degtjarsk urban district	5	5	5	6	5	5	5	1
43	65765000	ZATO Svobodny	ND	ND	ND	ND	ND	ND	ND	ND
44	65760000	Upper Dubrovo urban district	ND	ND	ND	ND	ND	ND	ND	ND
45	65737000	Zarechny urban district	3	3	4	4	3	3	3	1
46	65767000	ZATO Uralskiy	ND	ND	ND	ND	ND	ND	ND	ND
47	65628000	Nizhneserginsky district	4	4	4	5	4	4	4	1
48	65759000	Biserksky urban district	ND	ND	ND	ND	ND	ND	ND	ND
49	65732000	Upper Pyshma urban district	3	3	3	3	2	2	2	1
50	65757000	Sredneuralsk urban district	5	6	6	6	5	5	5	1
51	65722000	Sysertsky urban district	7	7	7	8	7	7	7	1
52	65729000	Aramil urban district	ND	ND	ND	ND	ND	ND	ND	ND
53	65740000	Kamensk-Uralsk urban district	3	3	3	3	3	3	3	1

№	OKTMO	Name of the municipality (district/urban district)	DTI2: quarter.1 2021	DTI2: quarter.2 2021	DTI2: quarter.3 2021	DTI2: quarter.4 2021	DTI2: quarter.1 2022	DTI2: quarter.2 2022	DTI2: quarter.3 2022	DTI2: quarter.4 2022
54	65752000	Novouralsk urban district	ND	ND	ND	ND	ND	ND	ND	ND
55	65714000	Nevyansky urban district	4	4	4	5	4	4	4	1
56	65733000	Upper Tagil urban district	4	4	4	5	4	4	4	1
57	65761000	Upper Neivinsky urban district	ND	ND	ND	ND	ND	ND	ND	ND
58	65751000	Lover Tagil urban district	3	3	3	4	3	3	3	1
59	65717000	Gornouralsk urban district	6	6	6	6	5	5	5	1
60	65734000	Upper Tura urban district	3	3	3	3	2	3	3	1
61	65748000	Kushva urban district	3	4	4	4	4	4	4	1
62	65744000	Kirovgrad urban district	2	2	3	3	2	2	2	1
63	65735000	Volchansk urban district	3	3	3	3	3	3	3	1
64	65755000	Severouralsk urban district	3	3	3	3	3	3	3	1
65	65764000	Pelym urban district	ND	ND	ND	ND	ND	ND	ND	ND
66	65749000	Lesnoy urban district	ND	ND	ND	ND	ND	ND	ND	ND
67	65738000	Ivdel urban district	6	6	6	7	5	5	6	1
68	65742000	Karpi urban district	3	3	3	4	3	3	3	1
69	65715000	Lower Turinsky urban district	4	4	4	5	4	4	4	1
70	65713000	Makhnevskoe urban district	ND	ND	ND	ND	ND	ND	ND	ND
71	65730000	Asbest urban district	3	4	4	4	3	3	3	1
72	65763000	Reftinsky urban district	3	3	3	3	3	3	3	1
73	65739000	Irbit urban district	2	3	3	3	3	3	3	1

Table A3. DTI-Ratio values based on BKI 3 data

№	OKTMO	Name of the municipality (district/urban district)	DTI3: quarter.1 2021	DTI3: quarter.2 2021	DTI3: quarter.3 2021	DTI3: quarter.4 2021	DTI3: quarter.1 2022	DTI3: quarter.2 2022	DTI3: quarter.3 2022	DTI3: quarter.4 2022
1	65758000	Sukhoy Log urban district	4	4	4	4	4	4	4	1
2	65707000	Bogdanovich urban district	3	4	4	4	4	4	4	1
3	65623000	Kamyshlovsky district	7	7	8	8	6	6	6	1
4	65718000	Pysminsky urban district	4	4	4	5	4	4	4	1
5	65724000	Talitsky urban district	4	4	4	5	4	4	4	1
6	65725000	Tugulym urban district	6	7	7	7	7	7	7	1
7	65639000	Slobodo-Turinsky district	5	5	5	6	5	5	5	1
8	65706000	Beloyarsk urban district	7	7	8	8	7	7	7	1
9	65712000	Kamensk urban district	5	5	5	6	5	5	5	1
10	65608000	Baykalovsky district	3	4	4	4	3	3	4	1
11	65711000	Irbit urban district	4	4	4	4	4	4	4	1
12	65713000	Artyomovsky urban district	5	5	5	5	5	5	5	1
13	65713000	Berezovksy urban district	8	8	9	9	8	8	8	1
14	65762000	Malyshevsky urban district	3	3	4	4	3	3	3	1
15	65728000	Alapayevsk urban district	3	4	4	4	4	4	4	1
16	65771000	Alapayevskoye urban district	4	4	4	5	4	4	4	1
17	65750000	Nizhnaya Salda urban district	3	4	4	4	3	3	3	1
18	65708000	Verkhnesaldsky urban district	2	3	3	3	2	2	2	1
19	65720000	Rezh urban district	3	4	4	4	4	4	4	1
20	65701000	Yekaterinburg urban district	3	3	3	3	3	3	3	1
21	65726000	Turinsky urban district	3	4	4	4	4	4	4	1

№	OKTMO	Name of the municipality (district/urban district)	DTI3: quarter.1 2021	DTI3: quarter.2 2021	DTI3: quarter.3 2021	DTI3: quarter.4 2021	DTI3: quarter.1 2022	DTI3: quarter.2 2022	DTI3: quarter.3 2022	DTI3: quarter.4 2022
22	65723000	Tavdinsky urban district	4	5	5	5	5	5	5	1
23	65756000	Serovsky urban district	4	4	4	4	4	4	4	1
24	65754000	Polevskoy urban district	3	3	3	3	3	3	3	1
25	65745000	Krasnoturyinsk urban district	2	3	3	3	3	3	3	1
26	65746000	Krasnoufimsk urban district	3	3	3	3	3	3	3	1
27	65645000	Taborinsky district	4	4	4	5	4	4	4	1
28	65753000	Pervouralsk urban district	4	4	4	4	3	4	3	1
29	65709000	Verkhotursk urban district	4	4	4	4	4	4	4	1
30	65721000	Sosvinsky urban district	ND	ND	ND	ND	ND	ND	ND	ND
31	65710000	Garinsky urban district	3	4	4	4	3	3	3	1
32	65716000	Novolyalinsky urban district	3	3	3	4	3	3	3	1
33	65743000	Kachkanar urban district	2	2	2	2	3	3	3	1
34	65705000	Achit urban district	5	5	5	5	4	4	4	1
35	65704000	Artinsky urban district	4	4	4	4	4	4	4	1
36	65713000	Krasnoufimsky district	5	6	6	6	5	5	5	1
37	65747000	Krasnoufimsk urban district	4	4	4	4	4	4	4	1
38	65741000	Kamyshlovsky urban district	4	4	4	4	4	4	4	1
39	65766000	Staroutkinsk urban district	ND	ND	ND	ND	ND	ND	ND	ND
40	65727000	Shalinsky urban district	8	8	9	9	7	7	7	1
41	65719000	Revda urban district	4	4	4	4	4	4	4	1
42	65736000	Degtjarsk urban district	5	5	5	6	5	5	5	1
43	65765000	ZATO Svobodny	ND	ND	ND	ND	ND	ND	ND	ND

№	OKTMO	Name of the municipality (district/urban district)	DTI3: quarter.1 2021	DTI3: quarter.2 2021	DTI3: quarter.3 2021	DTI3: quarter.4 2021	DTI3: quarter.1 2022	DTI3: quarter.2 2022	DTI3: quarter.3 2022	DTI3: quarter.4 2022
44	65760000	Upper Dubrovo urban district	ND	ND	ND	ND	ND	ND	ND	ND
45	65737000	Zarechny urban district	3	3	4	4	3	3	3	1
46	65767000	ZATO Uralskiy	ND	ND	ND	ND	ND	ND	ND	ND
47	65628000	Nizhneserginsky district	4	4	4	5	4	4	4	1
48	65759000	Biserksky urban district	ND	ND	ND	ND	ND	ND	ND	ND
49	65732000	Upper Pyshma urban district	3	3	3	3	2	2	2	1
50	65757000	Sredneuralsk urban district	5	6	6	6	5	5	5	1
51	65722000	Sysertsky urban district	7	7	7	8	7	7	7	1
52	65729000	Aramil urban district	ND	ND	ND	ND	ND	ND	ND	ND
53	65740000	Kamensk-Uralsk urban district	3	3	3	3	3	3	3	1
54	65752000	Novouralsk urban district	ND	ND	ND	ND	ND	ND	ND	ND
55	65714000	Nevyansky urban district	4	4	4	5	4	4	4	1
56	65733000	Upper Tagil urban district	4	4	4	5	4	4	4	1
57	65761000	Upper Neivinsky urban district	ND	ND	ND	ND	ND	ND	ND	ND
58	65751000	Lover Tagil urban district	3	3	3	4	3	3	3	1
59	65717000	Gornouralsk urban district	6	6	6	6	5	5	5	1
60	65734000	Upper Tura urban district	3	3	3	3	2	3	3	1
61	65748000	Kushva urban district	3	4	4	4	4	4	4	1
62	65744000	Kirovgrad urban district	2	2	3	3	2	2	2	1
63	65735000	Volchansk urban district	3	3	3	3	3	3	3	1
64	65755000	Severouralsk urban district	3	3	3	3	3	3	3	1
65	65764000	Pelym urban district	ND	ND	ND	ND	ND	ND	ND	ND

№	OKTMO	Name of the municipality (district/urban district)	DTI3: quarter.1 2021	DTI3: quarter.2 2021	DTI3: quarter.3 2021	DTI3: quarter.4 2021	DTI3: quarter.1 2022	DTI3: quarter.2 2022	DTI3: quarter.3 2022	DTI3: quarter.4 2022
66	65749000	Lesnoy urban district	ND	ND	ND	ND	ND	ND	ND	ND
67	65738000	Ivdel urban district	6	6	6	7	5	5	6	1
68	65742000	Karpi urban district	3	3	3	4	3	3	3	1
69	65715000	Lower Turinsky urban district	4	4	4	5	4	4	4	1
70	65713000	Makhnevskoe urban district	ND	ND	ND	ND	ND	ND	ND	ND
71	65730000	Asbest urban district	3	4	4	4	3	3	3	1
72	65763000	Reftinsky urban district	3	3	3	3	3	3	3	1
73	65739000	Irbit urban district	2	3	3	3	3	3	3	1