Mechanism of Regulation and Assessment of Degree of Debt Load of the Population of the Russian Federation

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Abstract: This article reveals the problem of debt load of the population of the Russian Federation. The main purpose of the study is to determine the degree of debt load of the population on the basis of publicly available data, with the subsequent development of a final indicator that may be used in the analysis, control and regulation of the banking system of the Russian Federation. Methods of graphical analysis and modeling were used in the work. The authors have developed a coefficient of debt load of the population. On the basis of the presented coefficient and publicly available data, an assessment of the degree of debt load of the population was carried out. As a result of this author's assessment, the necessity of introducing a control system for the RF loan capital market was substantiated. The authors identified the main stages of the implementation of this system, as well as the procedure for the banking sector, taking into account its functioning. The dynamics of the volume of funds provided by credit institutions, consumer and corporate lending in the Russian Federation is considered. The main methods of regulation of the banking sector at the present stage have been studied, the necessity of using the indicator and the system for monitoring the degree of debt load of the population has been substantiated, the procedure for its implementation and the mechanism of functioning have been presented. Based on the results of the analysis, it was concluded that in the Russian Federation there is a significant level of debt load of the population.

1 INTRODUCTION

One of the main mechanisms for increasing the share of profit in the banking sector of the Russian Federation today is an aggressive credit policy. Over the past three years, the volume of loans issued has shown significant growth dynamics, which is perceived as a positive fact that has a beneficial effect on the country's economy.

However, the process of active expansion of the loan capital market is characterized by ambiguity, since under certain conditions it may have a negative impact on the country's economy. The main ones are a decrease in consumer activity as a result of an increase in the debt burden and a decrease in the volume of disposable income of citizens, an increase

in the volume of repeated lending aimed at repaying existing debts. These consequences are reflected in various spheres of the socio-economic life of society, and act as prerequisites for the aggravation of social problems, the development of mistrust in the country's financial system, in particular, in the banking system. This, in turn, leads to the withdrawal of funds from bank accounts by the population, an increase in the cash money supply in circulation.

By itself, the concept of debt load represents the share of loans in the total volume of real incomes of citizens. A high level of debt load, as a rule, leads to the inability of individual citizens to pay off their existing debt, which becomes an impetus for the development of the collection sector. As a result of the lack of the required regulatory framework, the

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actions of collectors over the past years have been of a strict preventive, often illegal nature, which contributed to the accelerated growth of distrust of the banking system on the part of the population and the growth of social tension. Obviously, in such conditions, full development of various sectors of the economy is impossible.

The study of the issue of debt load, credit policy and mechanisms for managing the volume of loans issued, as well as their impact on the economy, have recently been studied by such foreign authors as Leao (2003), Waters (2018), He et al. (2019), Grandi (2019), Chevallier & Joueidi (2019), Nguyen, Papyrakis & Van Bergeijk (2019), Shi et al. (2019), Arestis & Jia (2019). The closest to this paper is the study by Thus, Mue, de Almedia Philo and Thomas (Debtor level collection operations using Bayesian dynamic programming) (So et al., 2019), which raises the question of the need to collect and systematize data on debtors.

The study of the issue of debt load of the population in the Russian Federation was carried out by such scientists, as Shafirov L.A.(2014), Malanov V.I., Yakovleva I.A. & Burlov D.Yu. (2017) reveals the problem of the deterioration of the socio-economic region as a result of the high level of debt burden in his paper "The standard of living as a factor of the population's debt load". This problem is also noted in V.B. Bulatova, I.A. Yakovleva and D.Yu. Burlov's work. (2017). The reasons of increase in level of debt load and growth of arrears of the population are rather in detail considered in the paper of Ibragimova P.A. (Ibragimova, 2018). The author notes that the problem of debt load of the population is aggravated with long fall of the real located income of citizens therefore so-called "vicious circle" is formed.

Moreover, works of such authors as Karanin E.V., Timin A.N. are devoted to studying the matter (Karanina E.V. & Timin, 2017).

The methods of assessment of level of debt load are considered in the paper of Chupryn A.P. and Evdokimov S.S. (2018).

It is worth noting that domestic scientists have not studied the issue of the need to develop a coefficient to assess the level of debt load of the population and to build a unified system of borrowers as the main component of the banking sector infrastructure, which makes it possible to track and adjust the level of debt load of the population. The mechanism for the functioning of the system and its implementation in the infrastructure of the banking sector has not been worked out, despite the existence of objective reasons for this need.

2 MATERIALS AND METHODS

The study of the degree of indebtedness of the population at the moment is possible on the basis of publicly available data, and is a study of the dynamics of individual indicators, conducting surveys of citizens. It should be noted that in this case, obtaining an objective final result is impossible. The data obtained are incomparable, which does not allow studying the dynamics of the indicator, since different authors use different indicators in the assessment.

To assess the degree of debt load of the population of the Russian Federation, we will conduct an analysis based on data from the Central Bank of the Russian Federation. Table 1 shows the amount of funds provided by credit institutions in Russia for the period 2016-2018 The dynamics of the volume of funds provided by credit institutions in Russia for the period 2016-2018 is shown in Fig. 1.

The presented histogram (Fig. 1) shows that the volume of loans provided by credit institutions increases in 2018, compared to 2016, by 14,400,371 RUB mln (+39.2%). Loan debt also tends to increase, in 2018 by 17,592,814 RUB mln or 61%, compared to 2016

As may be seen from the data in Table 1, the share of debt on loans in the total volume tends to increase, which is undoubtedly a negative characteristic - if in 2017 this indicator was 70%, then by the end of 2018 it reached 91%.

Table 1: Amount of funds provided by credit institutions of the Russian Federation in 2016-2018

Line	2016	2017	2018
The volume of loans provided by credit institutions (RUB mln)	36 704 165	41 892 527	51 104 536
Debt on loans extended by credit institutions (RUB mln)	28 975 839	41 089 304	46 568 653
Overdue debt on loans extended by credit institutions (RUB mln)	1 947 563	1 990 463	2 149 829
Share of debt on loans in the total volume of loans issued (%)	78.9	69.8	91.1
Share of overdue debt in total debt (%)	6.9	4.8	4.6

Consumer lending occupies a significant share of the credit market - 23% in 2018, which has been growing rapidly in the Russian Federation in recent years. This is primarily due to the emergence of new loan products and the addition of existing ones.

However, the retail lending market continues to experience a number of problems associated with low

solvency and financial instability of many borrowers, gaps in the legal and regulatory framework for the activities of credit institutions, regional differences in socio-economic and political situations, etc.

From the data presented in the histogram (Fig. 2), it may be concluded that the volume of consumer lending in the Russian Federation has grown over the past three years.
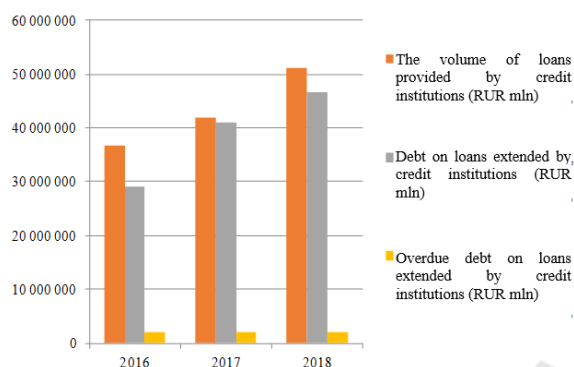

Figure 1: Dynamics of the amount of funds provided by credit institutions of the Russian Federation in 2016-2018

If in 2016 the volume of loans issued amounted to 10,404,324 RUB mln, then already in 2018 this volume increased by 1,483,638 RUB mln. and amounted to 11,887,962 RUB mln.

Corporate lending, unlike retail lending, was characterized by a smaller increase in 2018, but its dynamics is considered sufficient. The volume of corporate loans in 2018 increased by 10.5%. In 2017, the growth was 0.2%, and in 2016, lending decreased by 9.5%. In general, lending to legal entities in 2018 offset the decline in the previous two years. The resumption of lending to legal entities may be explained by an increase in consumer activity, the need for corporate clients to finance fixed and circulating assets.
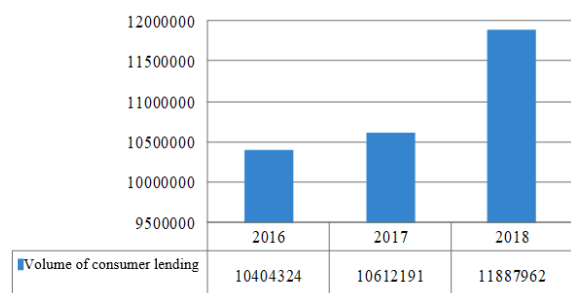

Figure 2: The volume of consumer lending in the Russian Federation in 2016-2018 (RUB mln)

Thus, the debt burden of Russian citizens is quite significant, the amount of debt obligations in the

Russian Federation amounted to about 55 RUB trln, of which about 15 RUB trln is the debt to banks.

It also cannot be denied that the mood of the borrowers themselves has a negative impact on the state of the country's credit sector. Studies show that the reason for this attitude lies in the low level of financial literacy of Russians, although herewith unscrupulous market participants who mislead gullible citizens may also cause such a negative reaction.

In 2017-19, the Central Bank adopted a number of measures to regulate the activities of credit institutions. The main purpose of the amendments was to enhance the banking sector by excluding organizations with low financial stability, as a result of which their number decreased significantly (Table 2).

As may be seen from Table 2, the number of non-bank credit institutions (NCIs) did not change during the study period. The high share of debt in the total volume of issued loans, as well as the significant debt load of the population of the Russian Federation, served as an impetus for bringing the collection sector to a new level of state regulation, the attitude towards which among the population of the country in the last decade may be characterized as negative.

Table 2: Structure of credit institutions of the Russian Federation in 2014-2018.

No.	Quantity / Year	Banks	Non-bank commercial institutions
1.	2014	783	51
2.	2015	681	52
3.	2016	575	48
4.	2017	499	43
5.	2018	440	44

As a result of the growth of overdue debt on loans, over the past 3 years, banks have three times more often sold debts to companies specializing in their repayment, which led to the growth of this sector and its active development. The current situation has led to the need to create an appropriate regulatory framework, its detailed study, in other words - to the legalization of the actions of collection agencies.

Collection agencies are represented by commercial organizations involved in the collection of overdue debts from legal entities and individuals. They act as intermediaries between creditors and debtors. After the adoption in 2018 of Federal Law No. 230, the rights of collectors are limited: companies are officially allowed to take actions regarding the collection of debts from Russian citizens, while the methods used should not contradict

the current legislation. The law forbids damage of property, threats etc. As a result of the Central Bank's adoption of additional legislative and regulatory acts, the collection sector received a solid foundation for further development.

The Central Bank exercises control and supervision over the banking sector through a variety of methods. Modern policy is aimed at a qualitative transformation of the banking sector by tightening requirements for credit institutions, however, in parallel, there is an increase in the population's debt load. Control over this problem is exercised by the Central Bank only indirectly, and no corresponding attention is paid to it. Thus, the expansion of the collection sector and its legalization cannot be an effective method of combating the debt burden of the population. In addition, the excessive intervention of collection agencies at this stage may serve to aggravate the current situation and multiply the level of debt load. The reduction in the number of credit institutions also cannot produce the desired effect. Lack of attention to the regulation of the number of NCIs significantly affects the degree of debt load. This is facilitated by the following reasons: the minimum requirements of non-bank credit institutions to the client for issuing loans; issuing loans to customers in a short time; the lack of a check of the client's solvency when deciding on the issuance of a loan.

With all the visible advantages, NCIs set higher, in comparison with bank, interest rates, and the procedure for concluding an agreement is not transparent enough, as a result of which controversial situations arise. Clients counting on a certain amount of debt as a result fall into a "trap" and are forced to apply to another credit institution for a new loan in order to fulfill the terms of the previous agreement. As a result, credit institutions issue loans not to expand the borrower's consumer opportunities, but to pay off his already existing debts. This practice leads to a decrease in real disposable income, and, ultimately, to a decrease in demand for certain groups of goods, works of services. This situation may be illustrated in the graph (Fig. 3).

In the figure, point A denotes the consumer's disposable income. When applying for a loan, the amount of available funds temporarily increases, temporarily overcoming the line of marginal income (MI) and moving to point B, and with an increase in the loan - to point C. However, if the borrower draws up an additional loan agreement, then the amount of his disposable income will decrease, since the amount of payments for the loan will increase and move below the level of the marginal income (points –A1

and –A2). Thus, the higher the total amount of borrowed funds, the lower the amount of the consumer's disposable income.
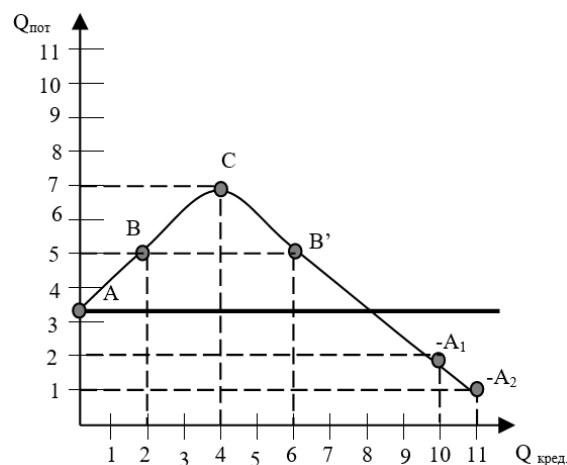

Figure 3: The relationship between the volume of loans received and the volume of consumption

This situation leads to a forced reduction by borrowers in the consumption of goods of certain groups, and in some cases, their exclusion at the time of repayment of funds under loan agreements.

Thus, a situation has developed in the Russian Federation that requires attention from the regulator. When implementing the regulatory policy, the Central Bank does not consider such an indicator as the debt load of the population, despite the fact that it exists objectively. In the terminology of the regulator, there is such a concept as "debt burden", which, however, also has not received development and widespread use, and the calculation of which is carried out in most cases formally. The concept of debt burden is not identical to the concept of debt load. The first indicator is microeconomic, and allows to assess the burden on an individual consumer / economic entity, while debt load refers to macroeconomic indicators. On its basis, it is possible to estimate the volume of loans re-issued to repay previous debts, i.e. assess the degree of debt burden on the economy as a whole. At the moment, there is no single indicator, and the debt load is estimated on the basis of such data as the total volume of loans issued, the total volume of debt, their ratio, etc., as presented at the beginning of this work. Its implementation would greatly simplify the procedure for monitoring the functioning of credit markets, and would allow for their objective assessment and effective correction depending on the nature of the dynamics.

3 RESULTS AND DISCUSSION

There is no separate indicator for assessing the degree of debt load of the population of the Russian Federation. As mentioned earlier, the analysis is carried out on the basis of publicly available data, as presented above, or on the basis of expert judgment. However, a homogeneous final indicator is preferable, since it allows one to more clearly assess not only the percentage of the population using borrowed capital, but also the dynamics of the volume of debt load. For these purposes, we present the following formula, on the basis of which it is possible to make this assessment:

$$DL_p = Q_{loans}/ (I_p \times RDI_p) \qquad (1)$$

where: DL_p - the coefficient of the population's debt load, units;

I_p - income of the population by years, RUB;

RDI_p - real disposable income of the population by years,%;

$Q_{loans.}$ - the volume of loans issued by years, RUB.

We will summarize the required data in a table and make a calculation (tab. 3).

Thus, the percentage of debt load of the population of the Russian Federation has been calculated. As may be seen from the table, in 2016 it is 72%, in 2017 and 2018. - 76 and 89%, respectively. By 2018, there has been an increase in the percentage of debt load. Thus, it may be seen that 100% of citizens' incomes account for 89% of loans in 2018. Analyzing the presented indicator, it is worth noting that a value equal to 1 may be considered critical, which will mean that by 1 RUR of income of citizens will account for 1 RUR of debt. As follows from the calculated data, in 2018 the indicator of the debt load of the population of the Russian Federation is quite close to the critical value and, in addition, shows a trend towards an increase during the study period.

Table 3: Calculation of the indicator of debt load of the population of the Russian Federation for 2016-2018

Indicator \ Year	2016	2017	2018
The volume of loans provided by credit institutions, RUB bln	36704.2	41892.5	51104.4
Cash income of the population, RUB bln	53991.0	55272.1	57457.0

Table 3: Continued.

Indicator \ Year	2016	2017	2018
Real disposable cash income,%	94.0	98.9	99.9
Debt ratio of the population	0.72	0.76	0.89

In order to check the objectivity of the obtained coefficient values, we will analyze the dynamics of the main indicators of debt load, presenting their dynamics in the form of a diagram. The most informative in order to analyze the degree of debt load of the population is the consideration of the values of indicators by month. For these purposes, it is required to adapt the previously derived coefficient pursuant to the publicly available statistical indicators required for its calculation. Thus, the calculation of monthly values of the debt load ratio will be made pursuant to the following formula:

$$DL_p = \Delta Q_{ly}/ \Delta ANW_p \qquad (2)$$

where: $\Delta ANW_{p.}$ - change in the average nominal accrued wages of the population by months,% .;

ΔQ_{ly} - change in the volume of loans issued by months,%.

Let's analyze the main indicators of debt load, namely, the volume of lending, debt and arrears, income of citizens, in the form of a diagram (Fig. 4) in order to determine the value of the critical debt load.

Critical debt load should be understood as the outstripping of lending volumes and real incomes by the rate of overdue debt. As may be seen, several areas correspond to this concept on the chart. Regions 1, 2 and 3 are characterized by an increase in the rate of overdue debt and a simultaneous decrease in lending volumes and the level of income of citizens.
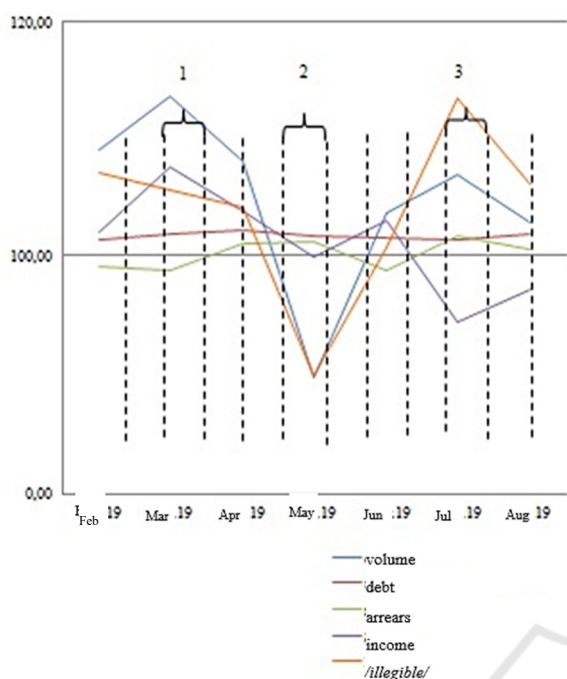
Figure 4: Dynamics of the amount of funds provided by credit institutions of the Russian Federation in 2016-2018.

The most critical is the value of indicators in the period July-August 2019 (area 3), where the level of overdue debt exceeds the level of total debt. Herewith, there is a significant decrease in the level of income with a simultaneous increase in lending volumes. The values of the debt load ratio superimposed on this graph make it possible to assess its sensitivity. As may be seen, the value of the indicator is the smallest in the second area, characterized by a significant reduction in lending volumes with a slight change in income values, and is critical in area 3. Thus, we may say that this indicator is a fairly effective indicator of debt load.

One of the reasons for the population's debt load and a fairly high percentage of overdue debt is the inability to track the status of the borrower, namely, the presence and amount of loan agreements already concluded with other credit organizations, the total amount of debt, the regularity of loan repayment, etc. This problem is obvious, but the mechanism for its solution has not yet been developed.
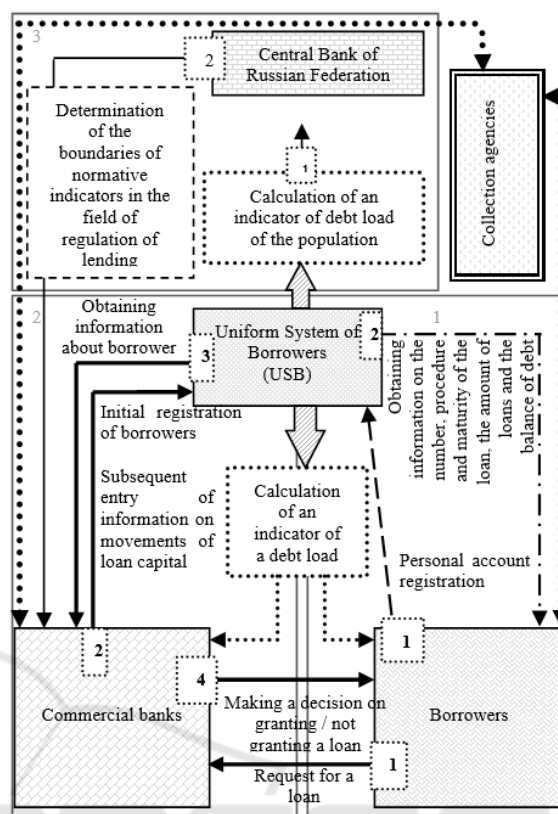

Figure 5: The procedure for the functioning of the banking system of the Russian Federation in the implementation of the Uniform System of Borrowers (USB).

One of the most optimum ways is the introduction of a unified system of borrowers, based on the data of the subjects of the banking system, which will allow for effective management. This process may be represented in the form of the following diagram (Figure 5). As may be seen, the introduction of this element may be useful to all participants in the banking system, including directly borrowers. The formation of the system should be carried out directly by credit institutions during the execution of credit agreements, as well as on the basis of already existing documents. The system should contain information about the volume, quantity, timing, regularity and timeliness of repayment of loans by the borrower, etc.

For borrowers, as a result of using the system, information will be available on the volume and number of loans taken, the timing and sequence of their repayment (repayment calendar), the part of the outstanding loan, the procedure for calculating and repaying interest, the personal indicator of the debt burden, as well as the credit limit (opportunities for a given volume income and already received loans,

obtaining an additional amount of loans) (area "1" in Fig. 5).

When connected to the system, credit institutions, in turn, will be able to assess the reliability of the borrower, calculate the optimum amount of the issued loan, which will avoid the risk of non-repayment of funds in the future, thus allowing banks to exercise effective financial management (area "2" in Fig. 5). On the basis of the data entered into the system, the indicator of the population's debt load, which is required for the control of the credit industry by the regulator (area "3" in Fig. 5), may be calculated.

Stages of introduction of a system are presented on the figure (fig. 6).

4 CONCLUSIONS

Thus, on the basis of public data and the indicator developed by authors in this article assessment of degree of debt load of the population of the Russian Federation for 2016-2018 is made. Based on the results of the analysis, it may be said that in the Russian Federation there is a significant level of debt load $DL_{p.}= 0.89$ in 2018), which justifies the need to develop and implement a unified system of borrowers. As a result of its implementation, the regulator represented by the Central Bank will be able to effectively regulate the banking system. This indicator may be used as the basis for the regulatory documents of the Central Bank and applied in the implementation of monetary policy.

The regulation of the credit sector of the Russian Federation, in particular, the loan capital market, has significant drawbacks. The introduction of the indicator and system presented in this work may open up new opportunities for the development of the country's banking system.
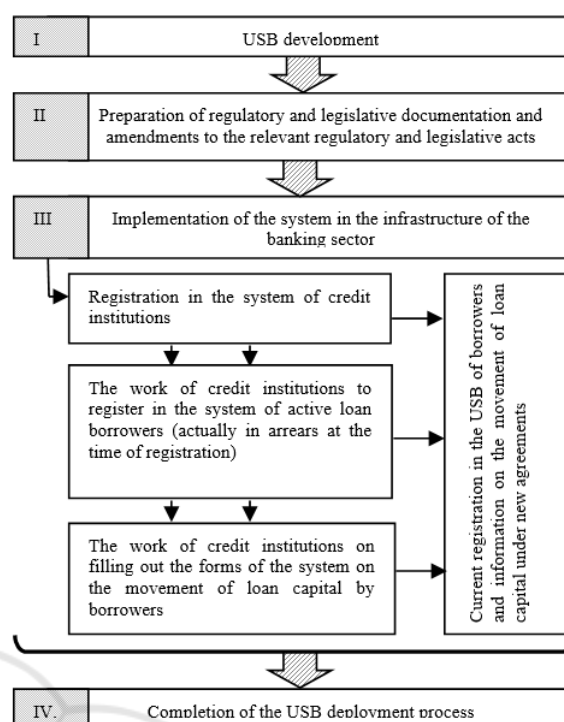

Figure 6: Stages of introduction of a uniform system of borrowers

First of all, their task should be to exercise control over the volume of loans issued, in order to prevent a situation of debt load on the country's population, which entails extremely negative consequences for the economy as a whole, up to default.

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