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THE IMPACT OF CREDIT INDEBTEDNESS OF NATURAL PERSONS ON INDIVIDUAL CONSUMPTION OF HOUSEHOLDS

Abstract

In the period 2008-2019, we notice that the available funds-income that households generate are not sufficient to cover the individual consumption of the household, so the question arises how natural persons in Serbia compensate for this shortcoming. On the other hand, there is a significant increase in banks' lending activity in lending to natural persons in the same period. The aim of this paper is to examine the possible connection between the increase in credit indebtedness of natural persons and individual consumption of households. The basis for the analysis is the data of the NBS and SORS. The importance of the research is reflected in the fact that the analysis of individual consumption and credit indebtedness of natural persons is a very important topic that determines the living standard of the population. Banks' receivables from natural persons based on non-residential loans, namely cash, consumer and current account overdrafts, were analyzed, because they can be the basis for individual consumption. The results of the analysis showed that there is a high correlation between the increase in credit indebtedness of natural persons and individual consumption of households, and that households in Serbia certainly use part of the loan to cover individual consumption, because available household resources are not enough. Natural persons in the analyzed period compensate for their insufficient solvency with increased credit indebtedness.

Key words: *loans to natural persons, individual consumption of households, household income*

JEL classification: *D 14, E 21, G 50*

УТИЦАЈ КРЕДИТНЕ ЗАДУЖЕНОСТИ ФИЗИЧКИХ ЛИЦА НА ЛИЧНУ ПОТРОШЊУ ДОМАЋИНСТАВА

Апстракт

У периоду 2008-2019. године, уочавамо да расположива средства-приходи које домаћинства остварују, нису довољна за подмирење личне потрошње домаћинства, па се поставља питање на који начин физичка лица у Србији надокнађују овај недостатак. Са друге стране уочава се значајан раст кредитне активности банака у кредитирању физичких лица у истом периоду. Циљ рада је испитивање евентуалне повезаности повећања кредитне задужености

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физичких лица и личне потрошње домаћинства. Основа за анализу су подаци НБС и РЗС. Значај истраживања огледа се у чињеници да анализа личне потрошње и кредитне задужености физичких лица представља врло важну тему која детерминише животни стандард становништва. Анализирана су потраживања банака од физичких лица по основу нестамбених кредита, и то готовинских, потрошачких и дозвољеног прекорачења по текућем рачуну, јер они могу бити основ за личну потрошњу. Резултати анализе су показали да постоји висока корелација између повећања кредитних задужења физичких лица и личне потрошње домаћинства, и да домаћинства у Србији свакако део кредитних средства користе и за подмирење личне потрошње, јер расположива средства домаћинства нису довољна. Физичка лица у анализираном периоду, недовољну платежну способност надомешћују повећаним кредитним задужењем.

Кључне речи: кредити физичких лица, лична потрошња домаћинства, приходи домаћинства

Introduction

The analysis of personal and family finances is gaining more and more importance in the modern economic environment. There are great challenges that natural persons face in managing personal finances in economic systems that have gone through a period of transition, the transformation of the banking sector and then the global economic crisis. Serbia is among the last countries in the region which, due to the complex socio-economic circumstances of the last decades, started the process of economic transformation, and when the banking market stabilized, a period of world economic crisis occurred, the consequences of which had to be felt in our region.

The topic of individual consumption analysis has a broader socio-economic significance. The indicator of individual consumption of the household is a topic that is a significant indicator of the economic development of the national economy, and the trend of its movement shows the real financial and economic strength of the population. According to the Survey of the Statistical Office of the Republic of Serbia for 2019, the structure of individual consumption is dominated by expenditures for food and beverages (34.2%), followed by expenditures for housing and utilities (16.7%), transport (9.3%), for clothing and footwear (5.3%), communications (5.3%), recreation and culture (5.1%) and others (SORS, 2020). In the structure of individual consumption, as can be seen, necessary consumption dominates. Such a pattern of consumption behavior, as well as the fact that average expenditures are higher than the official average household income, indicates the illiquidity of the average household, which must be settled from certain sources. In economic theory and practice, the inability to settle liabilities in the short term is compensated by borrowed resources. It is to be expected that these sources are credit sources, more precisely different forms of credit indebtedness, i.e. different types of loans to natural persons, which can also be used for individual consumption.

The banking sector has undergone a significant transformation in the last twenty years, because many significant regional banking groups have come to Serbia, through the takeover of domestic banks. With the arrival of these banks, the banking sector and its

supply have improved significantly. Among others, the retail lending sector has undergone significant transformations. The household sector is recognized as a profitable sector for many commercial banks. Households are less sensitive to changes in interest rates than, for example, companies. Credit products of natural persons are adjusted to the needs of the population. Banks design and present products that are tailored to different users. By placing one type of loan, the possibility for placing other loan products opens up. By lending, banks in a certain way strengthen financial ties with households in deposit operations as well, which is important for the financial potential of banks, i.e. cheap sources of financing (Ćirković, 2006).

The paper analyzes the credit products of banks that can be considered as a source of household consumption. These are: cash loans, consumer loans and allowed overdrafts on the current account. Cash and consumer loans are loans that can be both short-term and long-term, while maturities of up to two years are allowed. As a rule, these loans require more affordable collateral, so they are very common. By their nature, these loans can also be the subject of individual consumption, especially cash loans and allowed overdrafts because they are non-purpose sources of financing. The aim of this paper is to determine the interdependence of lending to natural persons and individual consumption of households.

The basic hypothesis in the paper is the claim that individual consumption of households in Serbia is influenced by credit indebtedness of natural persons for certain types of loans and that increasing credit indebtedness of natural persons, i.e. households, increases individual consumption and compensates for the lack of average household funds to cover individual consumption. Natural persons, i.e. households, compensate for insufficient available funds for individual consumption with higher credit indebtedness. Certainly, there are other factors that determine individual consumption, which can be the subject of special analysis (for example, remittances from abroad, etc.), which makes this topic significant and this paper a good basis for future research.

The socio-economic significance of the topic is reflected in the fact that the topic of living standard, indebtedness and individual consumption of natural persons and households, especially in the period after the economic crisis, is of great importance not only in economic but also in the wider social sense.

The structure of this paper consists of five segments. After the introductory part and the presentation of the theoretical background, the collected data were presented, followed by the research results and the analysis of the obtained results. At the end, concluding considerations were presented.

Literature review

The interdependence of credit indebtedness of natural persons and household consumption is a topic of great theoretical and practical importance. There are sources in the literature that deal with the analysis of different impacts on the consumption of household members. For the period after the world economic crisis, after 2008, no similar analysis was done in Serbia, which emphasizes the interdependence of credit indebtedness of natural persons (non-residential type) and individual consumption of households. There are separate sources in the literature that deal with the analysis of retail lending, and that deal separately with the analysis of consumption and household income.

In the period of economic crisis and post-crisis period, households generally reduce the consumption of all items, rent food, postpone consumption in the purchase of clothing, footwear, durable consumer goods, even reduce health expenditures, spend savings, or borrow money from relatives and friends (Stošić et al., 2012). When it comes to the first decade of the 21st century, the consumer basket was covered by available household funds 1.4 times, while in 2013, only ten years later, that coverage was 0.86 (Zlatanović, 2015). In periods of recession, households are characterized by certain common behavioural characteristics such as a decrease in the consumption of certain goods and services but also an increase in savings (Crossley et al., 2013).

Some studies have shown that income inequality is present in Serbia, and observed according to sources, inequalities are mostly contributed to by earnings, while other sources contribute less, and income inequality is more pronounced in Serbia than in other EU countries (Arandarenko et al., 2017). There are also views of authors who believe that when it comes to borrowing policy and social inequalities in Serbia, due to the dominance of the neoliberal concept of development, borrowed funds are invested more in consumption than in the production of goods, knowledge and services (Novakovic, 2019). Poverty has a significant impact on household consumption statistics in Serbia. Only in the period 2013-2014. year, the poverty rate in Serbia increased from 8.6 to 8.9%, which means that in 2014, 620,000 inhabitants were considered poor, which is not a small percentage (Mijatović, 2015).

The economic crisis from 2009 to 2013 caused stagnation or a decline in social product, income and employment, which resulted in a decline in living standards and rising poverty in Serbia (Krstić, 2014).

The problem of over-indebtedness of natural persons is a topic of importance in Croatia as well. According to Bejaković (2010), over-indebted persons are doomed to a poor quality of life and the necessity of debt management is pointed out. The purpose of debt management can be economic, which implies economic recovery and stability, social, which means avoiding social consequences due to over-indebtedness, and regulatory, which implies the existence of out-of-court mechanisms to assist natural persons in debt management.

In Bosnia and Herzegovina, an analysis of the sustainability of changes in expenditure on food and non-alcoholic beverages due to changes in income was made, and the results are that these expenditures are inelastic in relation to income ($E < 1$), and that income is a key determinant of consumption (Dacić & Hanić, 2019). A similar analysis was performed in Serbia, which through the results of econometric evaluation of Engel curves showed the significance of income as a key determinant of consumption (Hanić & Bugarčić, 2019).

There are sources that link indebtedness and personal bankruptcy. In the US, expenditures on durable consumer goods significantly increase bankruptcy claims, while unemployment has a marginal effect (Zhu, 2011). This is understandable given the development of the American labour market and unemployment.

The credit activity of natural persons is determined by creditworthiness. The analysis of the creditworthiness of the borrower implies an assessment of: the characteristics of the borrower, the ability to pay, assets, loan security, but also the credit history (Hadžić, 2018). For the increase in credit indebtedness of natural persons, creditworthiness, credit history, but also the lack of adequate credit security, can be a significant limiting factor. Some banks use different scoring models to assess creditworthiness. These models are based on previous data of the characteristics of credit users, but certainly require a periodic review of factors that affect scoring, first of all the amount of income (Steenackers and Goovaerts, 1989).

Banks basically consider credit risk, which determines the conditions for loan approval. Credit risk is defined as the risk of default based on credit obligations by debtors (Đukić, 2003). Regulations of the National Bank of Serbia in controlling the work of banks and the protection of users of financial services resulted in the entry into force of laws and bylaws that regulate this area. The Law on Protection of Users of Financial Services, in essence, allows loan users, natural persons, a clear and transparent presentation of credit products in terms of all essential elements of credit (Official Gazette of RS, 2014). In addition to this regulation, there is a Decision on the conditions and manner of calculating the effective interest rate (Official Gazette of RS, 2018), according to which banks are obliged to indicate the real-effective interest rate, which includes non-interest loan costs. Both regulations significantly determine the relationship between natural persons and financial institutions. Better understanding of credit products for natural persons reduces the possibility of households getting into a difficult financial situation or even financial bankruptcy, which further certainly affects the individual consumption and standard of living of the population.

Data analysis

The data used in the analysis are official data published by the National Bank of Serbia (NBS) and the Statistical Office of the Republic of Serbia (SORS). NBS data represent indicators of banks' claims on loans to natural persons by different types of loans. The data are published by the NBS monthly, and the data presented represent the claims of the banking sector in December, for each presented year. In order to obtain the amount of bank claims for loans that may have an impact on individual consumption, claims on housing loans as well as claims on interest and fees were deducted from total bank claims. Banks' claims for interest and fees affect disposable income, but the aim of this paper is to examine the effect of lending on individual consumption, so we exclude them. Housing loans are also presented, in order to gain insight into the trends of this type of loan in relation to other types of loans to natural persons, which gives additional useful conclusions.

Data on individual consumption of households as well as data on available funds are taken from the website of the Statistical Office of the Republic of Serbia, for each year separately. According to the SORS, the average number of household members in 2019 is 2.86 members (on a sample of 2,464 households). Individual consumption statistically includes consumption for food and non-alcoholic beverages, housing and overhead costs, transport costs, personal items, clothing and footwear, communications, recreation, culture, etc. The available funds - household income are: income from employment, pensions, income from agricultural activities, income from employment, social income and income in kind (which represent the value of products produced and consumed by the household and costs covered by the employer). The survey on household consumption by the Republic Bureau of Statistics was not conducted for 2020 because it was impossible to conduct the survey due to the Covid 19 pandemic.

The table below presents all the described and previously mentioned data, in millions of dinars, for the period of twelve years (2008-2019), from the period of economic crisis to 2019:

Table 1 Loans to natural persons, individual consumption and available household funds 2008-2019.

Year (December)	Total claims of the banking sector on natural persons (excluding interest, fees ...)	Banking sector claims on housing loans	Bank claims for loans to natural persons (cash, consumer, current account overdraft.)	Individual consumption of households	Available funds - household income (in total)
	A (000.000 RSD)	B (000.000 RSD)	A-B (000.000 RSD)		
2008.	347.216	163.051	184.165	40.100	43.518
2009.	376.128	191.482	184.646	42.548	47.639
2010.	483.631	256.159	227.472	42.448	47.376
2011.	516.021	275.784	240.237	47.574	51.641
2012.	559.877	309.473	250.404	56.543	51.504
2013.	582.237	314.869	267.368	56.013	56.073
2014.	635.045	336.645	298.400	58.713	57.054
2015.	669.432	346.199	323.233	59.052	57.814
2016.	739.334	359.495	379.839	60.720	59.624
2017.	800.140	355.483	444.657	62.275	61.407
2018.	900.412	383.364	517.048	64.481	63.734
2019.	986.209	399.974	586.235	67.099	66.880

Source: NBS and SORS

The methods of analysis in this paper are the statistical method of correlation, the comparative method, the method of induction and deduction, and the historical method.

The analysis seeks to determine whether there is an interdependence of credit indebtedness of natural persons with individual consumption, the intensity of this interdependence and whether this correlation is positive or negative. Although data are also available for housing loans by year, the possible interdependence of the growth of these loans and, for example, individual consumption or available household funds will not be analyzed, because the population of housing loan users is far smaller, but this may be the subject of another analysis.

Research results and Discussion

The analysis of the collected data shows that the total claims for loans to natural persons (excluding interest and fees) in the period from 2008 to 2019 increased significantly, more precisely by 184%. In each of the twelve analyzed years, a continuous growth of these claims is noticeable, which leads to the conclusion that the population in Serbia in the post-crisis period was significantly indebted.

Housing loans, which increased by as much as 145.3% in the same period, also contributed to this growth in the indebtedness of natural persons over a period of 12 years. Bearing in mind that housing loans are loans with a rather long repayment period, the

assumption is that the banks' portfolio has only increased. Housing loans are approved for up to 30 years, which leads to the conclusion that in addition to the repayment of existing loans, newly approved housing loans also cancel the amounts that are returned and increase the total claims of banks for housing loans, increasing the total portfolio of housing loans in Serbia. It can be concluded that in the mentioned period, housing loans had a significant growth, except for 2016/2017.

In the analysis in this paper, we exclude claims for housing loans from the total claims of the banking sector, without interest and fees. If we analyze the trend of total claims on non-housing loans without interest and fees, we conclude that banks' claims for cash and consumer loans and allowed overdrafts in the period from the beginning of the economic crisis in 2008 to 2019 increased by as much as 218, 4%. It should be borne in mind that these are loans with a maturity that is certainly shorter than the period analyzed in this paper, and that significant amounts were both placed and returned to banks in that period. This leads to the conclusion that the banking sector in Serbia, we can freely say, has lent intensively to natural persons precisely in those types of loans that can have a basis or can encourage individual consumption. It can be seen that this growth is pronounced in the last three years of the analyzed period. In 2016/2017, the growth was 17% (even when a decline in housing loans was recorded), while in the next two years the growth was 16.4% and 13.3% compared to the previous year.

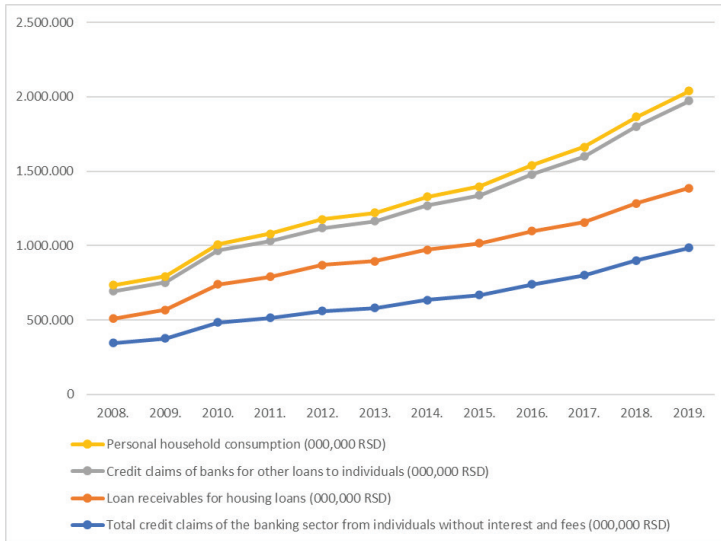
According to the analysis of data on individual consumption of households, in the period 2008-2019 individual consumption increased by 67.3%, with a slight stagnation in 2010 and 2013, since in the previous 2012 the growth of individual consumption was 18, 85% compared to 2011. In that year, the growth of individual consumption of households was the most pronounced. In the years that followed, the annual growth of individual consumption of households was below 5% per year, compared to the previous year.

Finally, there is a very similar trend in individual consumption and credit claims of banks for cash and consumer loans and allowed overdrafts, which indicates the need to examine whether there is a correlation between individual consumption and bank claims for non-residential loans, more precisely for loans that can be used for individual consumption as well.

Applying Pearson's correlation coefficient for data on bank claims for the above types of loans to natural persons and data on individual consumption of households, we find that the correlation coefficient $r = 0.869$, and the determination coefficient $r^2 = 75.46\%$. It can be concluded that there is a high positive correlation between the indebtedness of natural persons for non-housing loans and the individual consumption of households. This means that natural persons use the funds of cash and consumer loans, as well as the funds of the allowed overdraft on the current account (allowed minus) to settle individual consumption as well.

Given the also high coefficient of determination of 75.46%, we conclude that changes in credit indebtedness of natural persons significantly affect individual consumption. Of course, this influence is not the only factor, there are certainly other factors as well. The alienation coefficient $k^2 = 24.54\%$, certainly indicates that the influence of other factors is not negligible, and the analysis of the influence of other factors may be the subject of some future research. The chart below shows the trends in banks' claims for non-housing loans and trends in individual consumption for the period from 2008 to 2019.

Chart 1 The curve of individual consumption of households and the curve of credit claims of banks from natural persons in Serbia in the period 2008-19. in millions of RSD



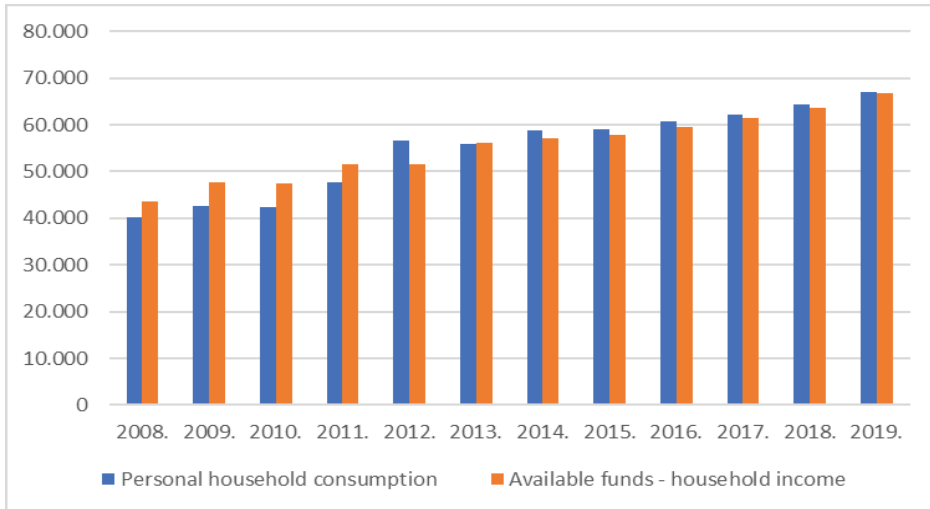
Source: NBS and SORS

The previous chart shows an interesting trend in the banking sector’s claims on natural persons for housing loans, and it can be concluded that due to the increase in indebtedness of natural persons with housing loans, there is an increase in individual consumption. However, the analysis and measurement of the interdependence of the possible impact of this group of loans may be the subject of a separate analysis. It should be borne in mind that the number of users of housing loans in Serbia is significantly lower than the users of other loans to natural persons that we analyze in this paper.

Also, we can talk about the reversible impact of individual consumption on credit indebtedness. Restrictions on individual consumption expenditures certainly determine the real DTI ratio of indebtedness of natural persons. If the average household in the analysis, according to the SBS data in 2019, has 2.8 members, the structure and employment of family members are of crucial importance. So, whether two are employed or two are unemployed, out of almost three members of the average Serbian household, greatly affects the overall creditworthiness of the household. In practice, banks in Serbia consider individual creditworthiness in most cases, while the real financial strength (picture) of the family, perception of family structure, income and indebtedness of all family members, banks conduct in credit analysis only for housing loans, rarely for other types of loans to natural persons. Hence, we can also talk about the limitations of borrowing by natural persons for non-residential loans due to the limitations in creditworthiness as a result of individual consumption.

Individual consumption of households is certainly determined by the income that households earn, so it is necessary to analyze these data as well. The following chart shows the trends in individual consumption of households and available household funds in the analysis period, from the beginning of the global economic crisis in 2008 to 2019:

Chart 2. Trends in individual consumption and available household funds in Serbia from 2008 to 2019.



Source: SORS

Since a significant correlation was observed between the credit indebtedness of natural persons and individual consumption of households, a significant interdependence of both individual consumption and available household income was also observed. According to the official data of the Statistical Office of the Republic of Serbia, we notice that in the last eight years, individual consumption of households has been higher than disposable household income. Bearing in mind that in the last few years, credit indebtedness of natural persons has intensified, ie natural persons are withdrawing a larger amount of non-purpose loans that may be subject to individual consumption, the difference between available funds and individual consumption of households is most likely settled from credit sources.

From the beginning of the economic crisis in 2008 until 2019, the available household funds increased by 53.7%. This growth logically determined the growth of individual consumption. The correlation coefficient of available household funds and individual consumption is, as expected, quite high and amounts to $r = 0.961$. However, a somewhat slower growth of available household funds is observed.

In the presented data, we notice that in 2011/2012 we have a “turning point”, which represents the moment when the annual amount of individual household consumption exceeds the annual amount of available funds until the end of the analyzed period, until 2019. In that period measures were adopted by the Government of the Republic of Serbia aimed at stabilizing public finances, which included reducing salaries in the public sector and reducing pensions, which certainly had an impact on the slow growth of available household funds. We will analyze the impact of credit indebtedness of natural persons to, and from the moment when individual consumption exceeds the available funds-household income in the Republic of Serbia.

Namely, from 2008-2012, there was an increase in claims of banks for non-residential loans to natural persons of 30.4%, but in that period the available household funds were above the individual consumption of households. For the period from 2012-2019, banks' credit claims for non-residential loans to natural persons increased by as much as 134.4%, and in the entire period, according to official SORS data, household individual consumption was above household disposable income.

If we divide the observation period of 12 years into two periods, the first from 2008 to 2012 and the second from 2012 to 2019, and if we compare arithmetic means (\bar{X}), average individual consumption (\bar{X}_{lp}) and average available funds (\bar{X}_{rs}) for the period 2008-2011 we get that the arithmetic mean of individual consumption $\bar{X}_{lp} = 54,797$ dinars and the arithmetic mean of available funds $\bar{X}_{rs} = 55,355$, we notice that in this period the average individual consumption is covered by the average income of households, because the average household income is higher.

For the period from 2012-2019, by comparing the arithmetic means, we get that the arithmetic mean of individual consumption is $\bar{X}_{lp} = 60,612$ dinars and the arithmetic mean of available funds is $\bar{X}_{rs} = 59,261$, which indicates that the average household income in this period is not enough to cover the average individual consumption of households.

This leads to the conclusion and additionally confirms the main hypothesis in the paper that natural persons in Serbia in the post-crisis period, since 2011 are more intensively borrowing non-residential loans, which affects the growth of individual consumption of households, because households do not have enough funds (income) to settle individual consumption. This may also lead to the conclusion that the income of natural persons is to some extent compensated by credit indebtedness, that natural persons due to insufficient solvency resort to credit funds specifically those credit funds that can be used for consumption (cash and consumer credit and allowed overdraft). The table below presents the summarized results of the research for the period 2008-2019.

Table 2. Review of the results of the analysis of the impact of credit indebtedness of natural persons, individual consumption and available funds of households in Serbia in the period 2008-2019.

	Loans to natural persons / individual consumption of households (2008-2019.)	$\bar{X}_{rs} > \bar{X}_{lp}$ (2008-2011)	$\bar{X}_{rs} < \bar{X}_{lp}$ (2012-2019)
Correlation coefficient-r	0,869	with an increase in credit indebtedness of natural persons (excluding housing loans and without interest and fees) of 30.4%	$\bar{X}_{rs} - \bar{X}_{lp} = 59.261 - 60.612 = -1.351$ with an increase in credit indebtedness of natural persons (excluding housing loans and without interest and fees) of 134.4%
Determination coefficient $-r^2$	75,46%.		
Alienation coefficient-k ²	24,54%		
Growth of banks' claims on natural persons for non-residential loans without interest and fees 2008-2019	218,4%		

Source: Author's calculation

It should be borne in mind that the expected motive for borrowing precisely when it comes to natural persons, i.e. households with lower incomes, where the gap, ie the difference between individual consumption and available funds, is "more negative".

Incomes of natural persons are not the same in all regions of the Republic of Serbia, so for a more detailed analysis we should have more precise data by regions, and for credit indebtedness of natural persons, to compare with data for individual consumption and household income. That may be the motive for some new research. The result of this paper is an analysis of available, official data, which are collectively presented, and which relate to the state of Serbia.

The obvious high level of positive correlation indicates that natural persons in Serbia are intensively borrowing and that they are paying off insufficient solvency with credit funds, having in mind the movement of available household funds and individual consumption of households. But it should be noted that natural persons make decisions on indebtedness due to the increased availability of loans to natural persons. Precisely in the period of analysis from 2008 until today, the permanent "liberalization" of the criteria for borrowing by natural persons from commercial banks is noticeable. Thus, we have that the once rigorous credit policy of the NBS, which implied a maximum burden on natural persons DTI ratio up to 30% (Debt to income), has reached today's 60% with most banks, for dinar cash and consumer loans (without indexation in foreign currency), as well as for allowed overdraft on the current account. The maximum amounts of credit indebtedness for these loans have been increased, maturities have been extended with fewer requirements for collateral than in previous years.

All of the above leads to the conclusion that natural persons in the post-crisis period until today, used the possibility of additional credit borrowing, which is a consequence of permanent long-term and gradual liberalization of the so-called retail credit market in Serbia. Bearing in mind that the banking sector's receivables from natural persons more than doubled in this period, we can say that in the long run such indebtedness, after a short-term positive impact on the amount of available household funds, may later negatively affect the purchasing power of natural persons ie households. The needs of individual consumption are met in a short period of time, and credit obligations last longer, and up to several years later. Then credit indebtedness becomes a burden for natural persons in a broader sense, and a problem of greater socio-economic significance.

Conclusion

The analysis of the presented data confirms the main hypothesis, which is that the increase in credit indebtedness of natural persons in the period after the global economic crisis and the recovery of the banking sector, replaces the lack of funds for individual consumption, especially given that according to official data, for the last eight year, the average available funds of households in Serbia are not enough to cover the average individual consumption of households.

From the total receivables of the banking sector from natural persons, housing loans and receivables for interest and fees are excluded in the analysis, which leaves cash and consumer loans and allowed current account overdrafts, because these funds can be used for individual consumption. In addition to the high positive correlation between credit indebtedness of natural persons and individual consumption of households, there is a significant increase in receivables from these loans to natural persons in the period from 2008-2019 by more than two times.

In this period, there is an accelerated increase in average individual consumption in relation to the average available funds of households, so according to official data, the last eight years of the analyzed period identifies a lack of funds to meet the average individual consumption of households. At the same time, the accelerated growth of credit indebtedness of natural persons for non-housing loans is noticeable.

Certainly, there are other factors that have an impact on individual consumption, but also on the credit indebtedness of natural persons. It should be borne in mind that the data are average and that there are certainly differences in the regions in Serbia in terms of disposable household income, as well as in individual consumption and indebtedness. If each region in Serbia were analyzed separately, we would get more precise results.

During the analysis period, the gradual liberalization of the retail credit market (retail loans) is noticeable, due to greater availability and higher amounts of primarily cash and consumer loans, which banks approve. During this period, banks to some extent lowered the criteria for the required minimum creditworthiness of natural persons, which certainly contributed to the increase in indebtedness of natural persons.

Household indebtedness may be the basis of economic growth, but this thesis is debatable in import-dependent economies. Increased individual consumption does not have a sufficient return impact on employment and gross domestic product, which would generate higher wages, and thus higher disposable household income. Higher disposable household incomes would reduce or eliminate the gap between individual consumption and available household resources, and most importantly, would reduce the need of natural persons for additional, often excessive borrowing.

The reduction of interest rates (Belibor for dinar loans), which has made loans to natural persons cheaper and more affordable, should not be a motive for borrowing by natural persons. A more rigorous DTI ratio, limiting the maximum loan amount, to changes in the classification of banks' balance sheet assets, where non-purpose loans to natural persons would entail a poorer classification and higher provisioning costs, could be some of the measures that can be applied. This would increase interest rates on non-housing loans, and to some extent reduce excessive household borrowing (Decision on the classification of balance sheet assets and off-balance sheet items of banks) and reduce the negative impact on individual consumption of over-indebted households.

Economic policy makers should pay special attention to the indebtedness of natural persons and the impact on individual consumption of households. The available funds of the average household should be sufficient to cover the average individual consumption in order to reduce the need for excessive borrowing, and on the other hand it is necessary to systematically limit excessive borrowing of natural persons and direct the credit potential of banks to the real economic growth of the domestic economy, employment, which would ultimately generate an increase in wages and the economic standard of the population.

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