O'ZBEKISTON RESPUBLIKASI MARKAZIY BANKI

Debt Service Ratio Analysis for Individuals

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Debt Service Ratio Analysis for Individuals

There are several of indicators that reflect the level of the debt burden of bank loans, including the credit-to-GDP ratio, the debt-to-income ratio, and the debt service ratio[1]. In international practice, the debt service ratio (DSR) is widely used to indicate what share of income of the population or borrowers is spent on debt repayment (principal and interest). Since the DSR takes into account the interest rates and maturities of loans it calculates the debt burden level more accurately than other indicators.

Figure 1. DSR for total loans to individuals (by stocks of loans), percent

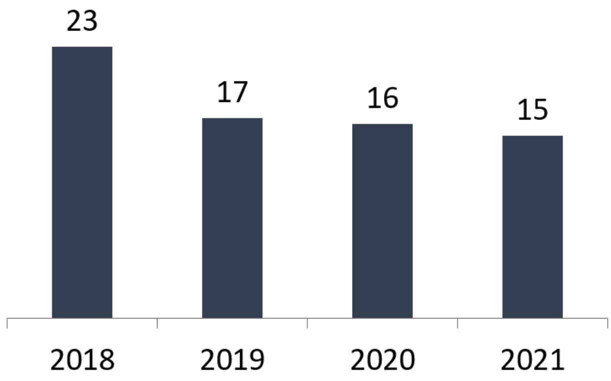
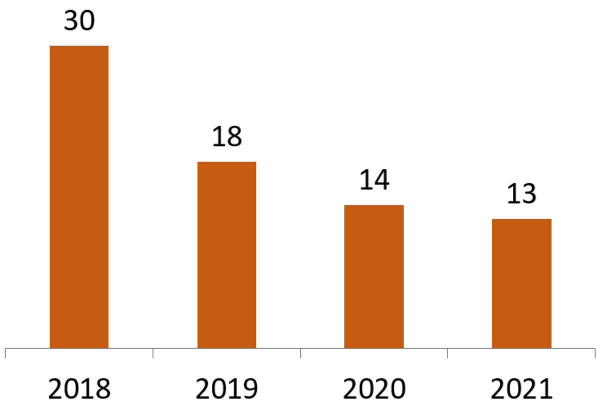


Figure 2. DSR for total loans to individuals (by flows of loans), percent



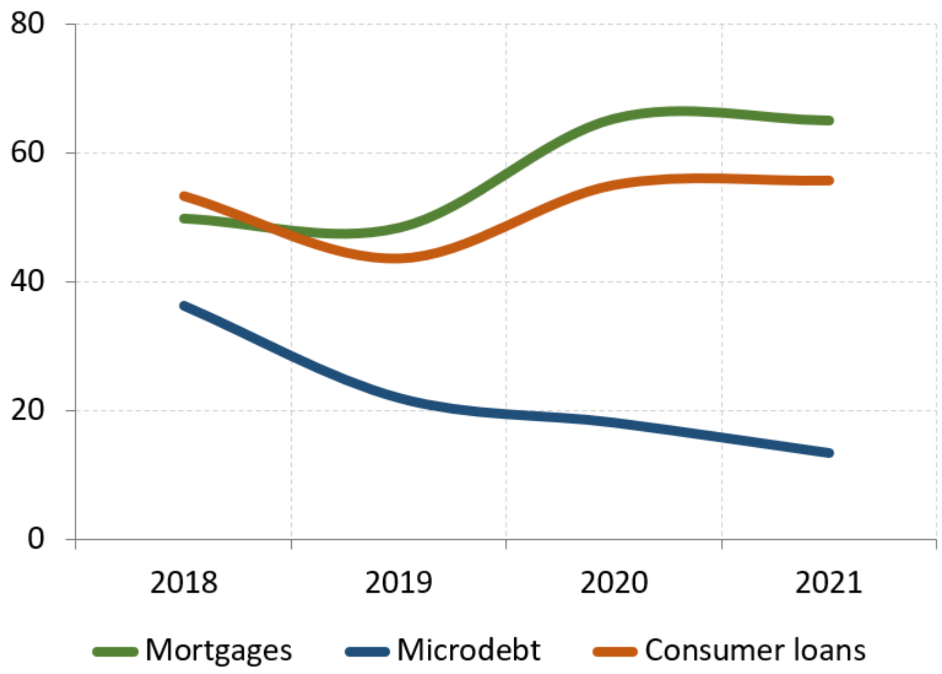
Source: CBU staff calculations.

From 2018 to 2021, the DSR for stocks of loans to individuals decreased by 8 percentage points, while the DSR for flows of loans to individuals decreased by 17 percentage points. It should be noted that the cost of items purchased with the loans taken out a long time ago are significantly lower than today's market prices due to inflation, while the current income of those borrowers is much higher than their loan payments. This reduces the DSR for total loans to individuals. In addition, due to large differences in the maturities, interest rates, and the number of borrowers by types of loans, there is a deviation in the DSR for individuals.

[1] For more information on the debt service ratio see Dynan, K., K. Johnson and K. Pence (2003): "Recent changes to a measure of US household debt service", Federal Reserve Bulletin, vol 89, pp 417–26, https://www.federalreserve.gov/pubs/bulletin/2003/1003lead.pdf, and Drehmann, M. and M. Juselius (2012): "Do debt service costs affect macroeconomic and financial stability?", BIS Quarterly Review, September, pp 21-34, https://www.bis.org/publ/qtrpdf/r_qt1209e.pdf.

While the aggregate DSR for individuals shows only a general picture, the DSRs by types of loans help develop and calibrate macroprudential policy tools. Thus, we also analyzed DSRs for microdebt, mortgages and consumer loans.

Figure 3. DSRs for different types of loans to individuals (by flows of loans), percent



Source: CBU staff calculations.

From 2020 to 2021, the DSR for consumer loans increased up to 56 percent, i.e., in 2021, borrowers spent 56 percent of their implied discretionary income on loan payments. Such growth is explained by the increase in the volume of consumer loans and the increase in the number of loan agreements per borrower (from 2018 to 2021 the latter increased from 1.1 to 1.2).

The DSR for mortgages grew up to 65 percent in 2021 following the decline during the preceding two years. The combination of the two factors led to this outcome. In 2020, compared to 2019, the number of mortgage borrowers decreased by 26 percent, and the volume of mortgage loans increased by 12 percent. The DSR for microdebt dropped to 13 percent in 2021.

In international practice, DSRs also include loans outside the banking system. In the case of Uzbekistan, the DSR for total loans to individuals is relatively low perhaps because it takes into account only bank loans. Moreover, given that the DSR is calculated using maturities specified in the loan agreements, it indicates the minimum amount of borrowers' income to be used for loan repayment. However, a "real-life" DSR, that is the actual share of borrowers' discretionary income that goes to loan payments, may be higher than our calculated DSR.

The DSR does not capture households' growing additional financial obligations. In particular, installment plans for purchasing consumer goods and services in retail stores, and cars in the primary and secondary markets are gaining popularity. Also, with the expansion of the housing construction real estate developers offer to buy a house in the primary real estate market in installments without taking out bank loans. The CBU has been working to assess these additional financial obligations through various surveys.

Annex 1

Debt service ratio methodology

The debt service ratio for borrowers is calculated using the following formula:

$$DSR_{j,t} = \frac{i_{j,t}}{\left(1 - \left(1 + i_{j,t}\right)^{-s_{j,t}}\right)} * \frac{D_{j,t}}{Y_{j,t}}$$

where:

DSR – the debt service ratio

i – the weighted average annual interest rate on flows of loans

s – the weighted average annual maturity of flows of loans

D – the total loan balances

Y – the annual discretionary income of borrowers

j – a loan type

t – years