MOTILAL OSWAL FINANCIAL SERVICES

EcoScope
The Economy Observer

How sustainable is India's household debt?

Presenting estimates of debt service ratio (DSR)

- **According to the recent data published by the Reserve Bank of India (RBI), household liabilities surged in FY23, as annual borrowings stood at 5.8% of GDP (INR15.8t) last year, the second highest since the 1970s. Accordingly, India's household debt surged to 48.1% of their income in FY23, from 43.3% in FY20 and ~35% of GDP a decade ago. A look at the key drivers of bank loans to households confirms that non-housing personal loans have increased at the fastest pace since 2022, followed by housing loans, business loans and agricultural loans. As highlighted in our recent report, non-mortgage household debt in India in FY23 was similar to that in the US, Canada, Japan, China and Australia.**
- **Irrespective of the key drivers of the surge in household debt, it is obvious that such a massive level of borrowings in just one year do not pose any threat to India's financial or macroeconomic stability. But what if it continues for the next few years? How long can it sustain? What is the sustainable level of household debt in India? In this note, we answer these questions and more.**
- **We adopt two different approaches. *First*, we analyze whether higher household debt in recent years is led by credit widening (i.e., more borrowers) or credit deepening (i.e., higher credit per borrower). The higher the share of the former is, the better it is. *Second*, we present our calculations of the debt service ratio (DSR) for Indian households. DSR measures the share of income used to service their loans (i.e., the ratio of interest payments plus amortizations to income). The lower it is, the better it is.**
- **Our analyses confirm that a majority of the growth in household debt in the past decade was driven by 'credit widening' and not 'credit deepening'. It is clear that as much as 90% of the growth in household debt in the past decade was attributed to credit widening. This methodology, however, has serious limitations.**
- **On the contrary, we find that DSR of Indian households is ~12%, similar to that in Nordic countries (where household debt-to-income ratio is 3-4x to that of India), and more than that in China (8.5%), France (6.4%), the UK (8.6%) and the US (7.7%), all of which have household leverage of more than 100%. A combination of a higher interest rate and lower tenure of loans makes DSR much higher for Indian households, even with a debt-to-income ratio of less than 50%.**
- **Historically, only a few nations (Australia, Denmark, Netherlands and Norway out of a sample of 19 economies) have seen household DSR of more than 15%. Doing the reverse calculation and assuming 15% DSR as the threshold, different combinations of an effective interest rate and maturity would yield a different threshold of household debt in India. However, our estimates suggest that Indian households will reach DSR of 15% with a debt-to-income ratio of ~60% (or ~47% of GDP), which was 48.1% (37.6% of GDP) in FY23. Given the recent trends in household debt and income, India can touch this threshold by the end of this decade, i.e. over the next 5-7 years.**
- **One of the most effective ways, in our view, to reduce the obligation burden for Indian households, and thus raise the leverage threshold, is to increase the residual maturity profile of borrowers. An increase in the maturity by six months (or 0.5 year) can push the threshold of household leverage by more than 4pp of income. At the same time, a reduction in the effective interest rate by 1pp raises debt by just 1.6pp of income. As highlighted earlier, a falling savings ratio in India makes it difficult to aim for a lower interest rate over a long term.**

Recent trends in India's household debt

According to the recently **released** data by the RBI, household net financial savings (HHNFS) **collapsed** to a 47-year low of 5.1% of GDP in FY23, compared to 7.2% in FY22 and 11.5% of GDP in FY21. The primary cause of the fall in HHNFS in FY23 vs. FY22 was the rise in their financial liabilities, as gross financial savings in FY23 were broadly the same as in FY22 at ~11% of GDP. HH liabilities increased by 5.8% of GDP (or INR8.2t) in FY23, marking the second highest rise in the past 50 years *(Exhibit 1)*, barring FY07, when it increased by 6.7% of GDP. Accordingly, household debt stood at 48.1% of personal disposable income (PDI) in FY23, compared to 43.3% of PDI in FY20 and ~35% of PDI a decade ago *(Exhibit 2)*.

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Exhibit 1: Household liabilities increased to the second-highest level on record in the past 50 years…

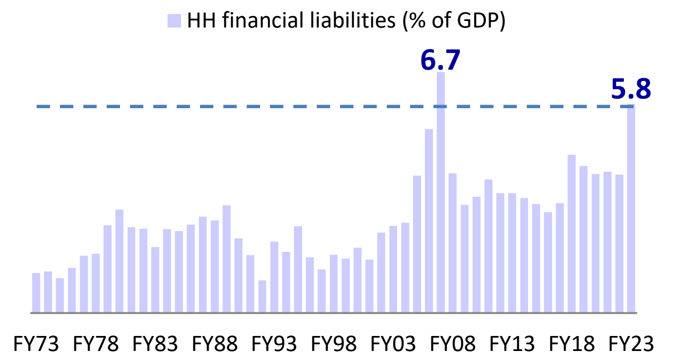
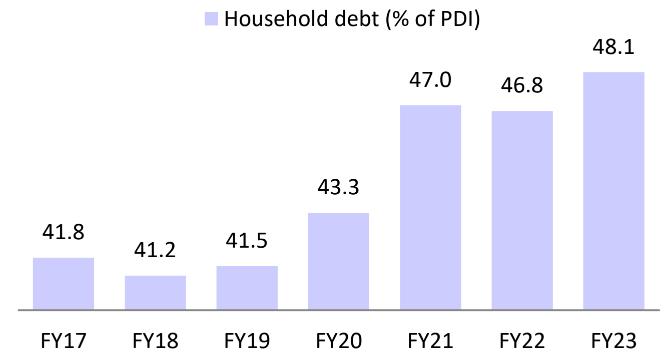


Exhibit 2: … which led to a surge in household debt to 48.1% of PDI in FY23, up from 43% in FY20



Assuming 15% growth in nominal PDI in FY23

Source: Various national sources, CEIC, MOFSL

Key drivers of India's household debt

Non-mortgage household debt at ~26% of GDP in India is comparable to that in the US, Japan, China and Australia

The level of Indian household debt has raised a lot of eyebrows. Some commentators have argued that the rise in liabilities is a reflection of the buoyancy in the residential real estate sector, which means that household physical savings have increased rapidly. On the other hand, some observers have raised concerns regarding the pace of the increase in household borrowings. We have already highlighted in one of our recent research reports that although household debt in India is low compared to other major nations, non-mortgage household debt at ~26% of GDP in India is comparable to that in the US, Canada, Japan and China *(Exhibit 3)*. In fact, a look at the different major components of household debt by scheduled commercial banks (SCBs) that account for ~80% of total household debt confirms that non-housing personal loans have increased at the fastest pace since 2022, followed by housing loans, business loans and agricultural loans *(Exhibit 4)*.

Exhibit 3: Non-mortgage household debt in India is similar to that in the US, Japan and China

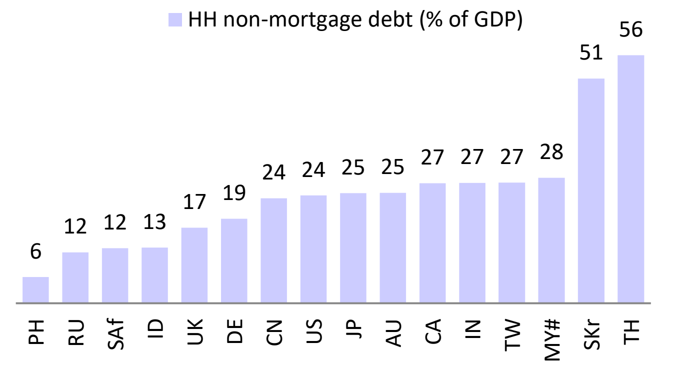
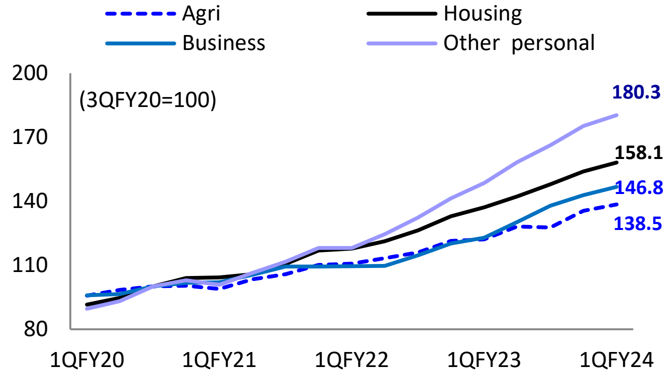


Exhibit 4: Non-housing personal loans have increased at the fastest pace since 2022



Data as of Mar'23 for all except Malaysia (Dec'22)

Source: RBI, Various national sources, CEIC, MOFSL

Non-housing personal loans have increased at the fastest pace, followed by housing loans, business loans and agricultural loans

Overall, there is no doubt that housing debt has gone up; however, non-housing personal loans have grown at a faster pace, which means consumption-related loans have also gone up substantially in the past 18 months. And it is a well-established fact that leverage and savings are inversely correlated with each other. Higher borrowings will lead to lower savings since a large portion of household income will be used to service the existing debt.

It is obvious that massive borrowings in just 12-18 months do not pose any threat to India's financial or macroeconomic stability. However, what if they continue for the next few years? How long can this financially irresponsible behavior continue before Indian households are pushed against the wall? What is the sustainable level of household debt in India? Let's answer these questions.

Is the current rise in household debt threatening – credit deepening vs. credit widening?

As much as 90% of the growth in household debt during the past decade was attributed to credit widening.

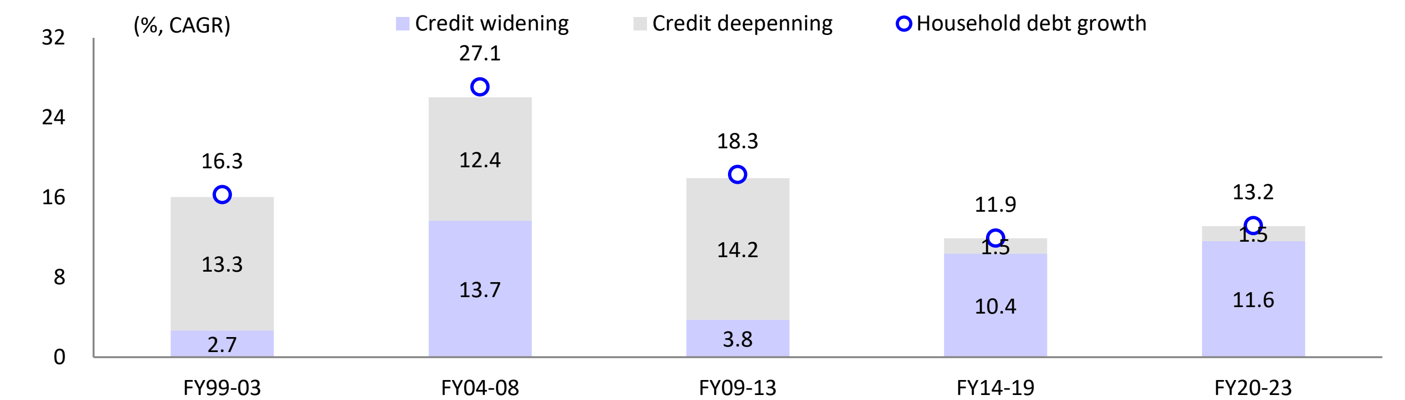
The recent rise in household leverage, which clearly shows a notable shift in the post-Covid period, definitely seems exceptional. Nevertheless, it is widely known that India household debt at 48.1% of PDI (or 37.6% of GDP) is very low compared to most advanced economies and many large emerging nations as well. So, is the current rise threatening? If not, how long can it continue?

We adopt two different approaches to answer these questions. *First*, we analyze whether high household debt in recent years is led by credit widening or credit deepening. The RBI provides data on outstanding debt and the number of loan accounts on a yearly basis. 'Credit widening' implies the increase in household debt driven by an increase in the number of borrowers, while 'credit deepening' implies that higher household debt is led by a higher number of loans per borrower. It is obvious that the higher the share of the former is, the better it is and vice-versa. If higher debt is led by more borrowers, rather than more credit per borrowers, it implies less concentration and more broadening of credit.

The recent rise in household debt, thus, is not a concern, based on the analysis of credit deepening vs. credit widening.

Our analyses using RBI data confirm that a majority of the growth in household debt in the past decade (FY14-FY23) was driven by 'credit widening', and not 'credit deepening'. During the economic slowdown at the turn of century (FY99-FY03) and immediately post the great financial crisis (FY09-FY13), credit widening accounted for only about a fifth of the increase in household debt. In contrast, it contributed as much as 50% during the high growth phase of FY04-FY08. It is also clear that as much as 90% of the growth in household debt during the past decade (even if divided between FY14-FY19 and FY20-FY23 period) was attributed to credit widening. The recent rise in household debt, thus, is not a concern, based on the analysis of credit deepening vs. credit widening.

Exhibit 5: Majority of the growth in banks' household debt was owing to credit widening in the past decade



* Credit deepening means higher loan per account, and credit widening means more loan accounts

Source: RBI, CEIC, MOFSL

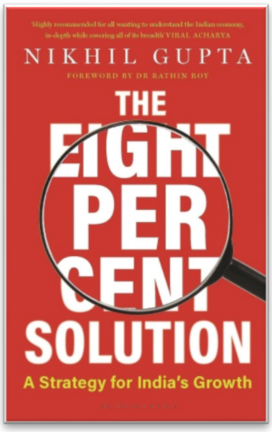
This methodology, however, has a serious limitation. The RBI publishes data on the number of loan accounts, rather than number of borrowers. It is then possible that a borrower could have borrowed from various financial institutions, leading to a higher number of loan accounts. Using the publicly available data, there is no way to address this limitation. Therefore, we present another method to estimate the sustainable level of household debt in India.

Higher leverage leads to lower savings over a period of time because of the rising share of income to be used to service debt

Presenting our estimates of Indian household debt service ratio (DSR)

The primary reason why higher leverage leads to lower savings over a period of time is the rising share of income to be used to service debt. One of the ways to find out the share of income utilized to service household debt is to calculate the debt service ratio (DSR) for Indian households. DSR measures the share of income used to service their loans (i.e., the ratio of interest payments plus amortizations to income). The lower it is, the better it is and the more sustainable household debt is.

The Bank for International Settlements (BIS) defines DSR as the ratio of interest payments plus amortizations to income. However, since the data on amortization is generally not available, BIS follows an approach used by the US Federal Reserve Board to construct DSR for the household sector.



Unfortunately, BIS does not produce estimates for India's household DSR. Using official data from the RBI and National Housing Bank (NHB), we estimate DSR for Indian households with some assumptions (Please see ***Appendix*** at the end for details. Also, the interested readers could also read detailed analysis on the financial position of households and other economic participants in the recently released Book ***"The Eight Per Cent Solution"***, authored by Nikhil Gupta and published by Bloomsbury).

DSR of Indian households was ~12% in the past three years vs. 11.4-11.5% in FY19 and FY20 and ~10% a decade ago

Our estimates suggest that DSR of Indian households was ~12% in the past three years vs. 11.4-11.5% in FY19 and FY20 and ~10% a decade ago *(Exhibit 6)*. Interestingly, Indian household DSR is similar to that in the heavily indebted Nordic countries (where household debt-to-income ratio is 3-4x to that of India's), and more than that in China (8.5%), France (6.4%), the UK (8.6%) and the US (7.7%), all of which have household leverage of more than 100% *(Exhibit 7)*.

Exhibit 6: Household DSR is estimated to have risen to ~12% in India in FY23, the highest in two decades…

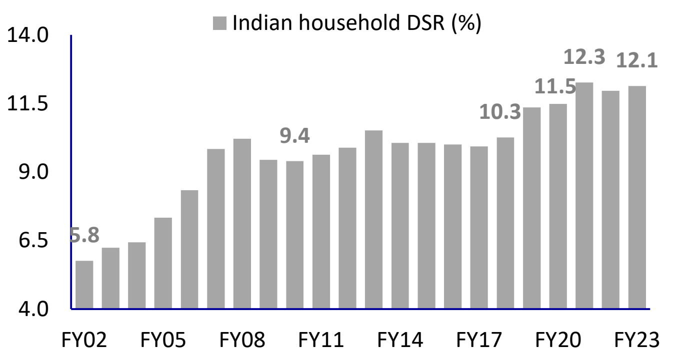
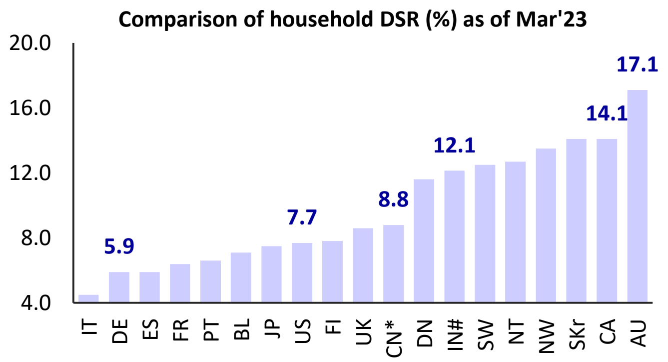


Exhibit 7: …which is much higher than world's many other major economies

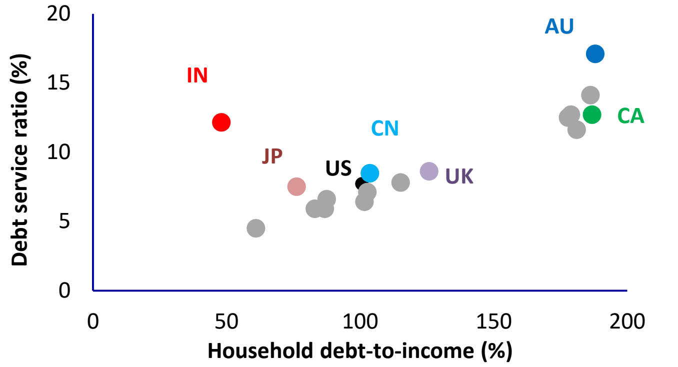


* CY22 data, #FY23 data, quarterly data for all others
Source: BIS, CEIC, RBI, MOFSL

A combination of higher interest rate (~10% per annum) and lower tenure of debt (5.3 years) makes DSR much higher for Indian households

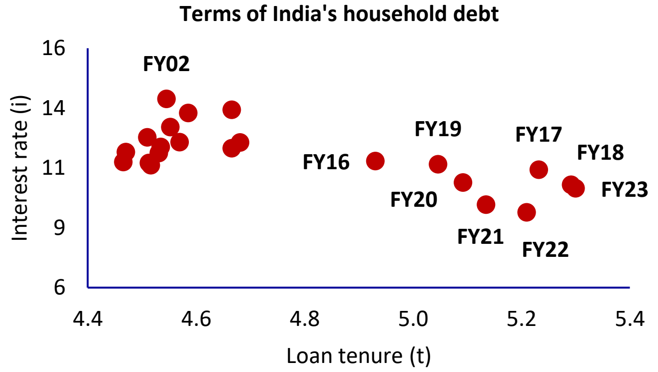
Despite having a much lower household debt-to-income ratio, a very high DSR is definitely a concern for India *(Exhibit 8)*. Using the formulae mentioned above, it is easy to identify the causes of such high household DSR in India. A combination of higher interest rates (~10% per annum) and lower tenure of debt (5.3 years) makes DSR much higher for Indian households, even with a debt-to-income ratio of less than 50% *(Exhibit 9)*. A silver lining here is the fact that the terms of household borrowings have improved in India during the past decade, with extending maturity (from 4.6-4.7 years a decade ago) and falling interest rates (12% in FY13 and FY14).

Exhibit 8: Household DSR is much lower in many other heavily indebted economies…



Based on Mar'23 data (Dec'22 for China/CN)

Exhibit 9: …because of high interest rates and low maturity in India, which has improved in the past decade



FY23 data on tenure is our assumption
Source: BIS, RBI, CEIC, MOFSL

What is the sustainable level of India's household debt?

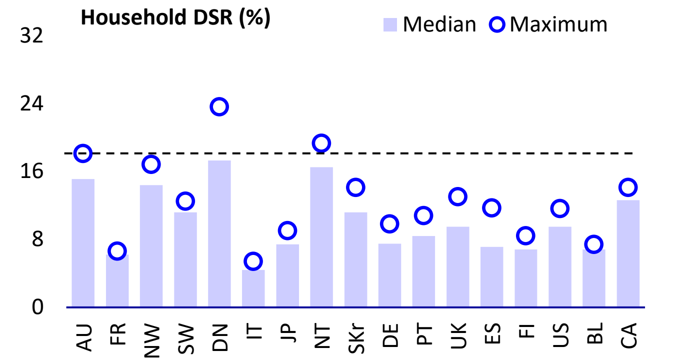
Overall, our analysis suggests that Indian households already utilize about 12% of their income to service their debt, which is among the highest compared to other major nations in the world. This is despite the fact that India's household debt-to-income ratio is less than 50%, which is much lower compared to many other major economies. If so, how long can the sharp increase in household liabilities witnessed during the past 18 months continue?

Historically, only a few nations (Australia, Denmark, Netherlands and Norway out of a sample of 19 economies we have) have seen household DSR of more than 15% *(Exhibit 10)*. Household DSR in the US had touched 11.5% in 2007, before the great financial crisis of 2008.

Assuming unchanged interest rates and maturity, Indian households will reach DSR of 15% with a debt-to-income ratio of around 60% (or 47% of GDP), which was 48.1% (37.6% of GDP) in FY23

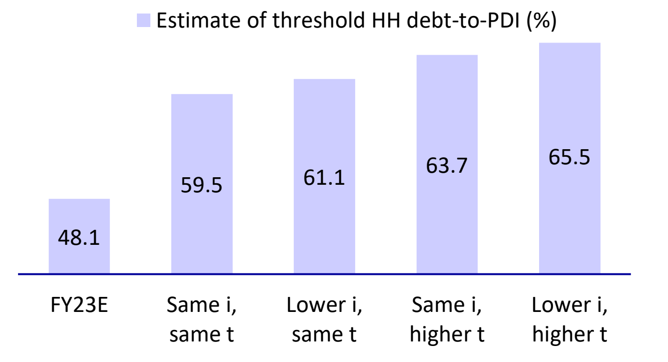
Doing the reverse calculation and assuming 15% DSR as the threshold, different combinations of an effective interest rate and maturity would yield a different threshold of household debt in India. Our calculations suggest that assuming an unchanged interest rate and maturity, Indian households will reach DSR of 15% with a debt-to-income ratio of around 60% (or 47% of GDP), which was 48.1% (37.6% of GDP) in FY23. Going by recent trends (last few years, pre-Covid and/or post-Covid) in household borrowings and PDI, India can touch this ratio by the end of this decade, i.e. over the next 5-7 years.

Exhibit 10: Only a few nations have witnessed a peak of 15% household DSR…



This is based on quarterly data available for 17 advanced economies

Exhibit 11: …and it suggests a threshold of India's household debt-to-PDI of ~60% vs. 48.1% now



E = Assuming 15% growth in nominal PDI in FY23

Threshold @15% DSR

Source: BIS, RBI, CEIC, MOFSL

Household leverage in India is not as low as most public forums, market commentators and many leading multi-international organizations believe and argue it to be

How can we make it sustainable for a prolonged period?

While more analysis with detailed data is required to be done by the regulators, the key lessons are that: 1) since the cost of servicing debt is much higher and the average maturity is very low in India, the headline household debt-to-income ratio is not comparable to other nations; and 2) with unchanged maturity (5.3 years) and effective interest rate (10% pa), if DSR of 15% is considered as the threshold level for India, the sustainable level of India's household debt is ~60% of income, which was 48.1% in FY23; and 3) our analysis confirms that household leverage in India is not as low as most public forums, market commentators and many leading multi-international organizations believe and argue it to be. However, it is not even at alarming levels at this stage, which provides a window to the policymakers to attempt required maneuver to make it more sustainable.

An increase in the maturity by six months can push the threshold of household leverage by more than 4pp of income

One of the most effective ways, in our view, to reduce the debt servicing burden for Indian households, and thus, raise the threshold debt level, is to increase the residual maturity profile of borrowers. An increase in the maturity by six months (or 0.5 year) can push the threshold of household leverage by more than 4pp of income. At the same time, a reduction in the effective interest rate by 1pp raises the sustainable level of household debt by just 1.6pp of income. As highlighted **earlier**, a falling savings ratio in India makes it difficult to aim for a lower interest rate over a long term. Therefore, the best way to make higher household debt more sustainable in India for a longer period is to increase the average maturity period.

Appendix: Estimation of debt service ratio (DSR) of Indian households

BIS **states** *"At the individual level, it is straightforward to determine the DSR. Households and firms know the amount of interest they pay on all their outstanding debts, how much debt they have to amortize per period and how much income they earn. But even so, difficulties can arise. Many contracts can be rolled over so that the effective period for repaying a particular loan can be much longer than the contractual maturity of the specific contract. Equally, some contracts allow for early repayments so that households or firms can amortize ahead of schedule. Given this, deriving aggregate DSRs from individual-level data does not necessarily lead to good estimates. And such data are rarely comprehensive, if available at all. For this reason, we derive aggregate DSRs from aggregate data directly."*

The formulae used by BIS to estimate DSR for the sector j (households in our case) at time t is:

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

where $D_{j,t}$ denotes the total stock of debt, $Y_{j,t}$ denotes aggregate income available for debt service payments, $i_{j,t}$ denotes the average interest rate on the existing stock of debt, and $s_{j,t}$ denotes the average remaining maturity across the stock of debt.

To address the lack of data on average maturity of loans, we use an RBI publication known as *Statistical Tables related to Banks in India*. It contains the maturity profile of banks' total loan book (not household loans) under eight different baskets: 1–14 days, 15–28 days, 29 days to 3 months, 3–6 months, 6–12 months, 1–3 years, 3–5 years and over 5 years. Taking the mid-point of each period and eight years for loans with maturity of over five years, we find that the average maturity of bank loans increased to 3.2 years in FY22 (the latest data available) from 2.5 years in early 2000s. Considering that household loans comprise housing loans, which are generally of longer maturity, we further assume that the average maturity of bank loans to the household sector was one and a half years more than the average maturity of loans. It means that the average maturity of bank loans to the household sector ranged between 4.0 and 4.7 years during the past two decades.

Additionally, since 97% of outstanding housing loans to individuals with HFCs were of over seven years' maturity as at end-FY22 (and the ratio has been similar in the previous years), we have assumed their average maturity at 10 years for HFCs. Lastly, since no such information is available for NBFC loans to the household sector, we have assumed it to be same as that of bank loans (though with negligible portion of housing loans, it should ideally be lower).

After combining this information on the maturity profile of banks/NBFCs (4.0-4.7 years) and HFCs (10 years), an estimate of the average maturity of household debt in the country can be prepared using the share of each of these lenders into household debt.

Our methodology suggests that the average maturity of household debt in India ranged between 4.5 and 5.2 years during FY02 and FY22. We assume it to have risen to 5.3 years in FY23. To put it in perspective, the average maturity of household debt in 17 advanced nations, for which DSR is calculated by BIS, is estimated at close to 13 years.

Besides tenure, we use the RBI data on banks' exposure to the household sector to estimate the interest rate on household loans every year. This data is also available for the past two decades. Since there are no details on the effective interest rates charged by HFCs and NBFCs, we assume the banks' interest rate as the final rate on Indian household debt (effective interest rate for non-bank lenders; however, is likely to be higher than the rate for banks). Importantly, since the average maturity of household debt has been about five years during the past two decades, we use the debt-weighted average interest rate of the last five years on a rotating basis as a proxy to the effective interest rate.

Now, with the information available on household debt, household income, effective interest rate and maturity, we can build estimates of the DSR for Indian households using equation (1) above and compare it with its counterparts in other nations.

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