

MATURITY TRANSFORMATION BY BANKS: THE DRIVER OF GROWTH AND SOURCE OF FRAGILITY



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Introduction

History teaches us that often large banks fail for reasons other than frauds. A recent case in point is the Silicon Valley Bank (SVB) in the United States. Before 10th March 2023, SVB was the 16th largest bank in the US. Widely acclaimed for its assets – mostly long-term loans to technology companies and startups, the bank was viewed as a safe bank and was preferred by the technology

Abstract

Banks across the world carry out maturity transformation voluntarily because this is profitable. However, mindless maturity transformation may expose a bank to insurmountable risks. In this short article, explain the concept of maturity transformation and present numerical evidence from India. Further, we describe the theoretical basis of the activity and briefly point to a set of risks. We conclude by indicating some factors that make Indian banking sector somewhat resilient to the risks associated with maturity transformation.

firms in the US and elsewhere for financing their novel investment projects. Its assets were rated investment-grade by Moody's and Standard & Poor's (Al-Sari, 2025). On 10th March 2023, SVB collapsed and the Federal Deposit Insurance Corporation (FDIC) ascertained that the bank will be under its receivership. This episode attracted keen attention among researchers and experts in financial intermediation and banking. Since then, ongoing research has identified a plethora of interrelated factors responsible for the failure of SVB. Severe liquidity crisis due to inadequate liquidity management strategies, over exposure in highly long-term illiquid assets, absence of risk management mechanism, flawed management of balance sheet, absence of contingency funding plan, etc. were some of the major reasons found to have played a role in the collapse of SVB (Cheselka, 2023). Many experts studying the case of SVB have since opined that these anomalies stemmed from an ambitious, if not reckless, maturity transformation

undertaken by this bank (Barr, 2023).

The question, therefore, is, was SVB the only bank to undertake maturity transformation? The answer is a clear 'no'. All banks engage in maturity transformation. However, for SVB, maturity transformation proved to be a source of disaster. This leads us to a set of important questions: why do banks engage in this seemingly dangerous activity of maturity transformation? What are the risks associated with this activity?

In this short article we try to answer these questions. At the onset, we describe maturity transformation and cite evidence from India. Then we undertake a short discussion on the theoretical basis of maturity transformation and the importance of this activity. Finally, we list some of the risks that are associated with this activity of the bank. Finally, we also comment on the regulatory safeguards that make Indian banks resilient.

What is maturity transformation?

Simply stated, maturity transformation is that liabilities are primarily short-term and assets are predominantly long-term (Ho & Saunders, 1981). The difference in weighted average maturity of assets and that of liabilities is the maturity gap, which the banks prefer to enjoy, in anticipation of realizing the term premium. Maturity transformation is often described as a core function of a commercial bank (Bhattacharya & Thakor, 1993).

Banks are highly leveraged entities. The liabilities for a bank are its deposits and borrowings. The assets, on the other hand, are loans and advances, and investments in securities. Maturity transformation necessitates that the liabilities be mostly short-term, callable with lower cost and characterized by floating rates. Assets, in contrast, should be of relatively longer maturity with preferably fixed-rate and promising high returns. When the strategies of a bank have succeeded in ensuring that the balance sheet items have such characteristics, the bank earns positive interest rate spread. The spread is the difference between the return on funds from assets and cost of funds on account of liabilities. If a bank has limited flexibility in adjusting the cost of and return on funds, then the maturity gap that the bank has achieved becomes a key determinant

of its interest rate spread.

Maturity transformation by banks in India

Reserve Bank of India's data (RBI, 2025) on scheduled commercial banks, provide evidence of maturity transformation by banks in India.¹ Among Indian banks, on an average, the short-term (maturity of less than 1 year) liabilities are approximately 11% more than the short-term assets. A reverse situation exists in respect of longer-term assets and liabilities – the assets in these categories are about 11% more than the liabilities. Similar evidence of maturity transformation is witnessed when the data for the years 2020-25 are analyzed. The degree of maturity transformation varies across banks. Foreign banks operating in India prefer to have high concentration of both liabilities and assets as short-term. In contrast, public sector banks are seen to have engaged in somewhat aggressive maturity transformation – holding 46% of liabilities and 25% of assets in the short-term category. Simultaneously, public sector banks are seen to enjoy a considerably high proportion of deposits that are very long-term in nature. Private sector banks are seen to be markedly less aggressive in maturity transformation with liquid short-term assets exceeding the short-term liabilities. Since, difference in behaviour between banks is not the focus of this article, we refrain from extending this discussion.

Figure 1 shows the average maturity profile of assets and liabilities of scheduled commercial banks in India. The information confirms that banks in India to engage themselves, through at varying degrees, in maturity transformation.

It is important to note, at this point, that if banks undertake maturity transformation, there is most often an asset-liability mismatch in the different maturity buckets. Intuitively, the reader may have realized that this could be a source of risk and have potential to cause a 'bank run' (Diamond & Dybvig, 1983). In section 5, we undertake a very brief mention of a few risks associated with maturity transformation.

¹ Report on Trends and Progress of Banking in India is an annual publication by RBI. For this article, the reports for the financial years 2019-20 to 2024-25 have been considered. The reader may access the reports at <https://rbi.org.in/scripts/AnnualPublications.aspx?head=Trend+and+Progress+of+Banking+in+India>

Table 1 Maturity Profile of select Assets and Liabilities of Banks in India (as at 31st March 2025)

Section	Figures in Percentage						
	Maturity Bucket	Public Sector Banks	Private Sector Banks	Foreign Banks	Small Finance Banks	Payment Banks	Scheduled Commercial Banks
Liabilities							
Deposits	Up to 1 year	39.6	39.4	63.3	55.7	29.1	40.8
	Between 1–3 years	21.7	26.2	29.8	38.5	70.9	24
	Between 3–5 years	10.8	8.9	6.9	3.9	0	9.9
	Over 5 years	27.9	25.4	0	1.8	0	25.4
Borrowings	Up to 1 year	53.1	44.7	89.8	48.5	93.3	54
	Between 1–3 years	16	27	8.5	34.6	6.7	20
	Between 3–5 years	7.4	9.8	0.4	9.1	0	7.6
	Over 5 years	23.6	18.5	1.4	7.7	0	18.5
Assets							
Loans & Advances	Up to 1 year	28.4	28.6	58.7	38.1	NA	29.6
	Between 1–3 years	36.1	34.8	23.6	32.6	NA	35.1
	Between 3–5 years	11.5	12.3	8.7	11.6	NA	11.7
	Over 5 years	24	24.3	8.9	17.7	NA	23.5
Investments	Up to 1 year	21.5	59.9	83.6	68.2	92.8	42.2
	Between 1–3 years	13.5	15.1	9.9	25.1	2.6	13.7
	Between 3–5 years	15.4	6.3	2.2	4.9	0.8	10.7
	Over 5 years	49.6	18.7	4.4	1.8	3.8	33.4
Notes 1. NA = Not Applicable 2. The totals of each subsection may not add to exactly 100% because of rounding errors. 3. For Foreign Banks, the data pertains to operations in India 4. The category, Scheduled Commercial Banks, includes all the banks except the Regional Rural Banks 5. Source: (RBI, 2025)							

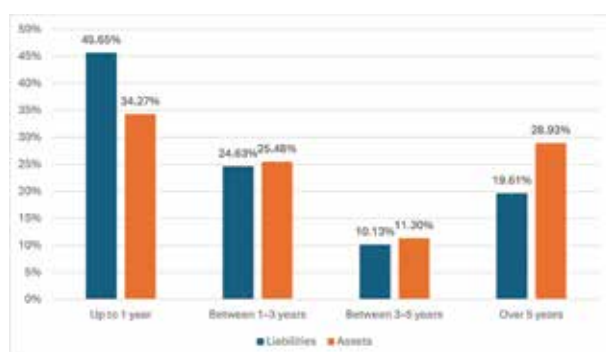


Figure 1 Average Maturity Profile of Assets and Liabilities of Scheduled Commercial Banks in India (2020-2025)²

Why do banks undertake maturity transformation?

Spread, discussed in section 2, may be seen as the gross return for the bank per unit amount under maturity transformation. Spread multiplied by the

² **Source:** Calculations by the authors based on data available from RBI.

volume of interest-earning assets provides the net interest income (NII) of a bank. Therefore, banks, as financial intermediaries, undertake maturity transformation to increase NII. The NII, is an important component of the bank's revenue and is hence a key determinant of its profit.

However, maturity transformation is profitable for the bank when the sovereign yield curve and/or that for the bank is upward sloping. Simply posited, a yield curve depicts the relation between the interest rates or yields and maturity of investments.³ Under normal circumstances, the yield curve is an upward sloping curve – depicting that more the tenor of investment, higher the interest rate. When the yield curve is flat or downward sloping, the gains from maturity transformation vanish.

It is important to observe that together with maturity transformation, another factor that positively impacts

³ For understanding the predictive power of yield curve in the context of Indian economy, the reader may refer to (Krishna & Nag, 2022) .

NII is the structure of the short-term liabilities. A healthy share of CASA (Current Account and Savings Account) in a bank's liabilities increases the gains from maturity transformation. These demand deposits reside in the short-term maturity buckets and provide banks with no cost or low-cost sources of funds for investment in long-term assets. More the share of CASA in the deposits accepted by banks, lower is the overall cost of funds.

What is maturity transformation a source of fragility?

Historically, it has been observed that, lured by the promise of higher NII, often banks which undertake aggressive maturity transformation face disastrous consequences. Banks, very often compete among themselves in respect of maturity transformation and become fragile. This may even make the banking system to collapse (Brunnermeier, 2013). In this section, we touch upon some of the major risks in maturity transformation.

One of the major risks associated with aggressive maturity transformation is the liquidity risk. When creditors, especially, the depositors claim their money back *en masse*, with assets being long-term and illiquid, a bank may face difficulty in settling the claims. The situation is worsened by the losses incurred in trying to liquidate assets under distressed conditions. This may cause a classic bank run (Diamond & Dybvig, 1983).

Interest rate risk in the form of repricing risk occurs when there is a rapid rise of short-term interest rates. With short-term deposits being repriced at higher rates and long-term assets being locked in at fixed rates that are lower (in comparison), the spread becomes increasingly thinner, squeezing the profitability. In an increasing interest rate scenario, the market value of fixed-income assets may decline as yields increase, causing a negative impact on the value of a bank.

Finally, maturity transformation amplifies credit risk. The quality of assets, that are long-term, may worsen and banks are required to provide for the resulting losses. This drains out the equity of the bank and may lead to a breach in the required capital adequacy ratio.

Conclusion

Maturity transformation resides at the core of banking function and drives the profit, growth and the value of a bank. But there is an inherent fragility in the mechanism. The trade-off between risk and

reward merits careful attention. Prudence is required while banks undertake this important activity.

It would be interesting to note here that unlike the western economies, the banking sector in India, has shown a remarkable resilience in falling a victim to the risks related to maturity mismatches. There have been no reported cases since the major bank nationalization. The reason for such resilience can be attributed to the asset structure of banks in India. The assets of Indian banks are more skewed towards loans than investments. It is the latter which attracts higher interest rate risks. Loan contracts are often characterized by floating interest rates, or at least with a provision to reset interest rates at regular intervals. Further, the increase in interest rates in India, has been relatively lower than that in the US and other western economies. These have safeguarded Indian banks from risks related to maturity transformation. Again, the RBI strictly regulates the investment by banks, and there is a cap on investments in the held-to-maturity (HTM) category. This ceiling is defined as investment under HTM category as a percentage of net demand and time liabilities. The RBI periodically revises this ceiling based on the extant macroeconomic outlook. This substantially reduces both interest rate risks and liquidity risks (Sur & Shah, 2023). Overall, Indian banks are discouraged to undertake reckless maturity transformation. Despite this resilience, the Indian banking sector needs to maintain caution and prudence in the light of rapidly changing global economic conditions and competition in the Indian banking sector as maturity transformation is both a driver of growth and source fragility for a bank. MA

Bibliography

1. Bhattacharya, S., & Thakor, A. (1993). *Contemporary banking theory*. *Journal of Financial Intermediation*, 3(1), 2-50.
2. Al-Sari, A. (2025). *The collapse of silicon valley bank: a critical analysis of regulatory shortcomings and risk management under Basel III*. *Journal of Banking Regulation*.
3. Barr, M. (2023). *Review of the Federal Reserve's supervision and regulation of Silicon Valley Bank*. Board of Governors of the Federal Reserve System. New York: Federal Reserve.
4. RBI. (2025). *Report on Trend and Progress of Banking in India*. Mumbai: Reserve Bank of India.
5. Ho, T., & Saunders, A. (1981). *The determinants of bank interest margins: theory and empirical evidence*. *Journal of Financial and Quantitative Analysis*, 16(4), 581-600.
6. Brunnermeier, M. (2013). *The Maturity Rat Race*. *Journal of Finance*, 68, 483-521.
7. Sur, K., & Shah, R. (2023). *Assessing vulnerabilities in India's banking sector*. *Immersive Outlook*.
8. Cheselka, P. (2023, March 16). *The Collapse of Silicon Valley Bank: An FRM Perspective*. Retrieved from Global Association of Risk Professional (GARP): <https://www.garp.org/risk-intelligence/risk-career/collapse-silicon-valley-bank-031623>
9. Diamond, D., & Dybvig, P. (1983). *Bank Runs, Deposit Insurance, and Liquidity*. *Journal of Political Economy*, 91(3), 401-419.
10. Krishna, G., & Nag, B. (2022). *Predictive power of yield curve – Evidence from India*. *IIMB Management Review*, 34(1), 54-67.