SBI Research

Prelude to MPC Meeting

26-March-2023

See the last page for disclaimer

Global Economic Situation

Silicon Valley Bank: The origin of the crisis

America's 16th largest bank

40 years of existence

USD 173 bn deposits

Deposit Base: Venture Capital backed start-ups

USD 211 bn total assets

USD 74 bn in loans

Rapid Interest Rate increase:
Large MTM loss

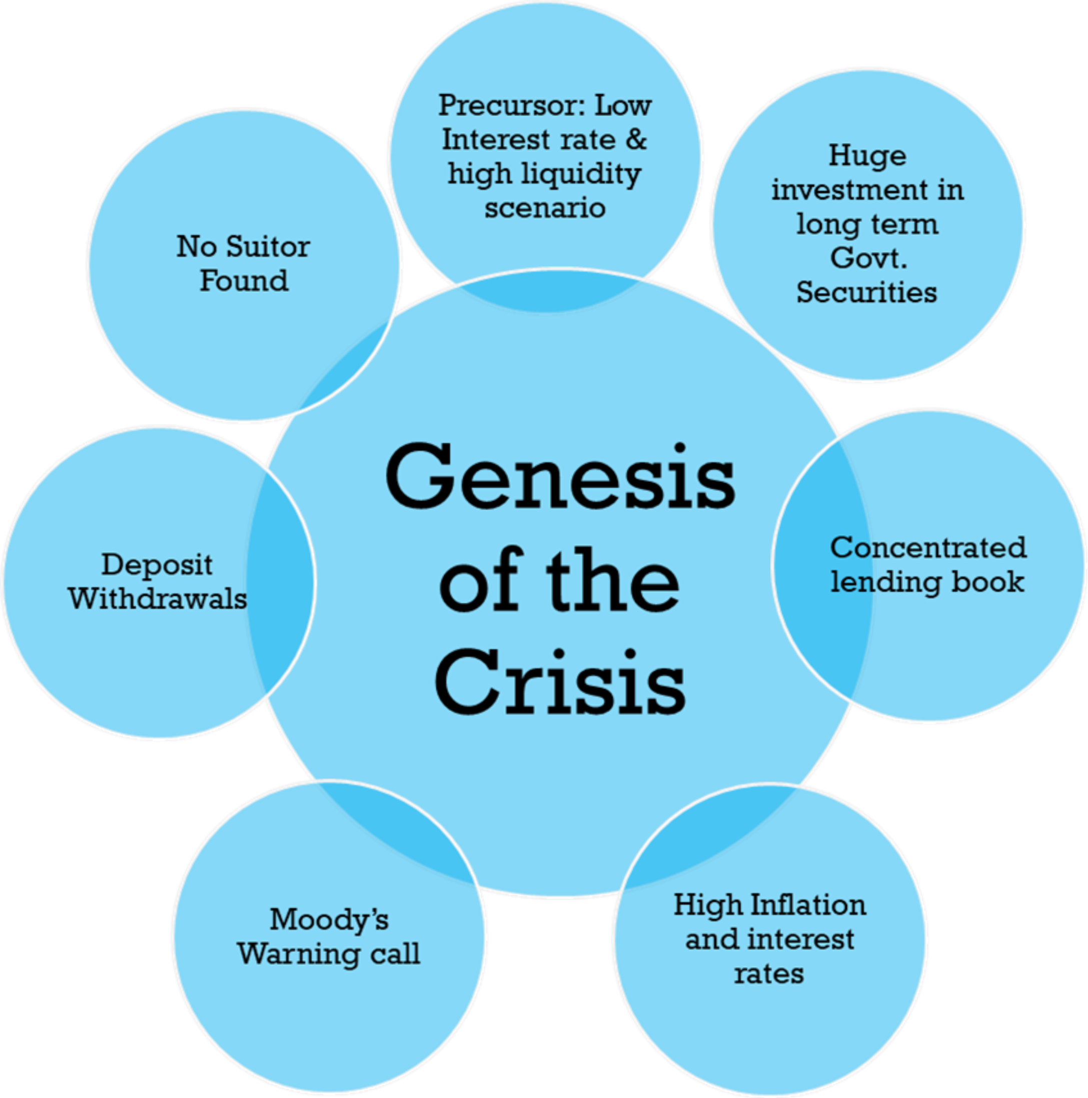
Weak ALM:
Causing Asset Liability mismatch

Weak Interest Rate Risk Management:
Failed to gauge interest rate risk

Segmental Concentration:
Narrow deposit base

Unsustainable Growth:
Asset size doubled in one year

Stress test:
Non-applicability/ Non-disclosure of EVE (Economic Value of Equity) metrics
LCR (Liquidity Coverage Ratio) / NSFR (Net Stable Funding Ratio)



Indian Banks regulatory architecture by RBI & Government is more sound, prudent than even Fed regulation of US Banks & Indian banks more than compliant with RBI regulations

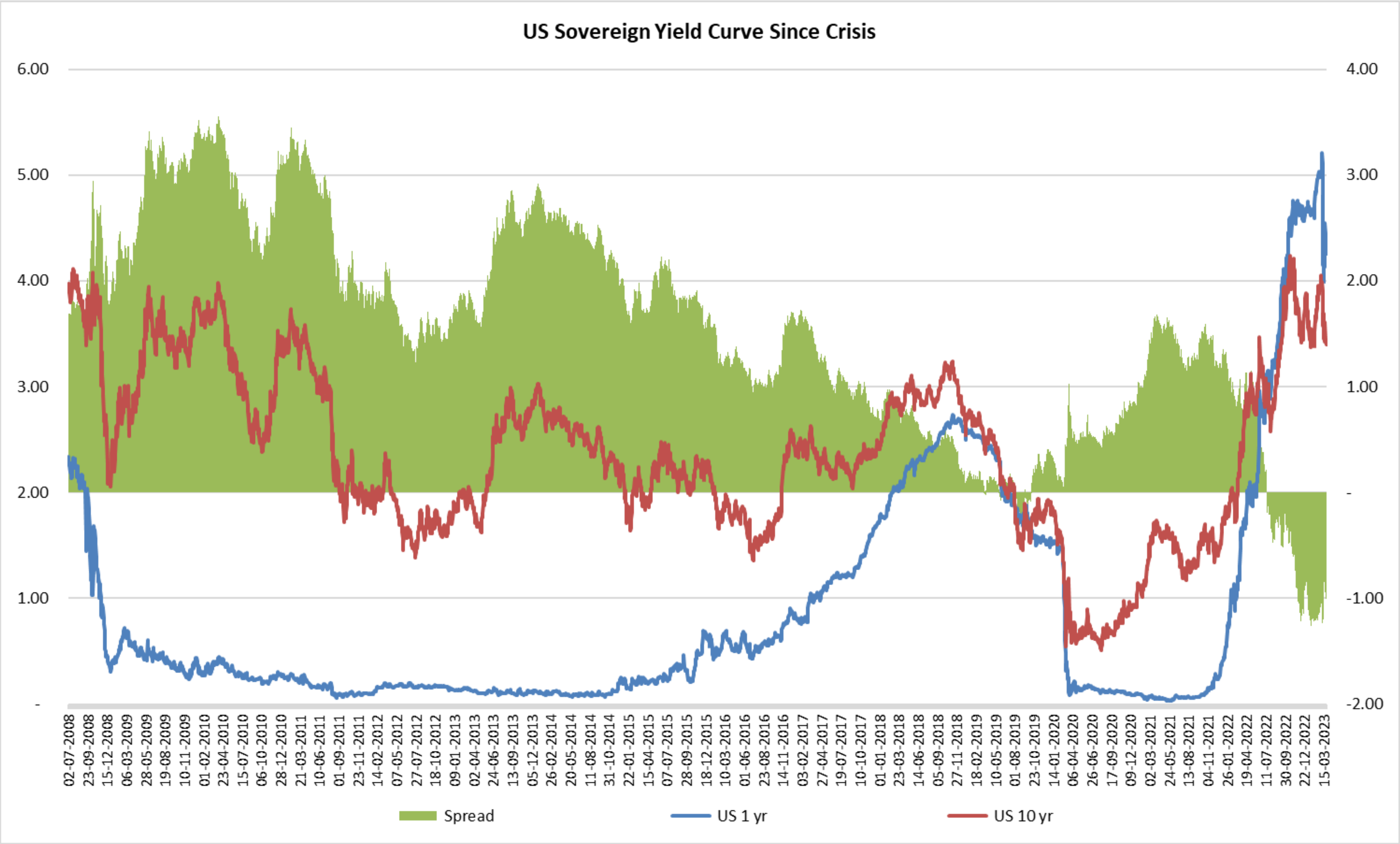
SBI
The banker to every Indian

Banking System Soundness in India vis-à-vis USA					
Sl. No	**Parameter**	**Regulatory Requirement**	**Remarks specific to India**	**Remarks specific to USA**	**ASCB Position**
1	Bank Formation		There is unified law for banking. Banking is subject under Union List. The dual regulation for co-operative banks removed. Most of banks have converged to Basel III, though there are variation related to cooperative banks	Banks can be formed under central law or state specific laws. Thus, there is dual regulation in banking. Most of banks have converged to Basel III, though there is regional variation.	
2	CRAR	9%	Basel Requirement is 8%		16% as on Sep'22
3	HTM/AFS	up to 23%	The Asset Liability Management controls and tools specified by RBI are very specific, such as Maturity Mismatch Report (MMR) and Interest Rate Sensitivity Monitor (IRSM).The HTM limits would be restored from 23% to 19.5 % in a phased manner starting from the quarter ending June 30, 2024	In the case of SVB bank, simple monitoring of MMR and IRSM could have pointed out the risk inherent in the balance sheet of the bank and the fallout could have been avoided	
4	Liquidity Coverage Ratio (LCR)/Net Stable Funding Ratio (NSFR)	100%	LCR 30-Days: 100%; NSFR 1 Yr: 100%	Full LCR requirement in US Banks is applicable to Category I (G-SIB) and Category II institutions with balance sheet size of over $ 700 Bn. As such, full LCR compliance was not mandatory for SVB which could have provided cushion to deposit outflows to a certain extent	LCR :135.6 % as on Sep'22
5	Large Exposure Framework (LEF)	1. 20% of Tier 1 Capital (Single Counter Party); 2. 25% of Tier 1 Capital (Group of Connected Counterparties)	To capture/manage exposures and concentration risk more accurately through defined limits on conterparty (ies)		
6	Deposit Insurance Scheme	Rs 5 lakh deposit insured	Indian law comprehensive & covers 98% of deposit accounts.Small Bank deposits such as RRBs, Cooperative banks, and Local Area Banks are insured at 82.9%, 66.5%, and 76.4% respectively	Some state specific laws insure excess deposits. Top Bank deposits are insured at 50-55% but small bank deposits are insured at 30-45% only	
7	SLR	18.00%	Money markets shielded from global spillovers with an assured liquidity support from RBI		27.9% as on 27 Feb 23

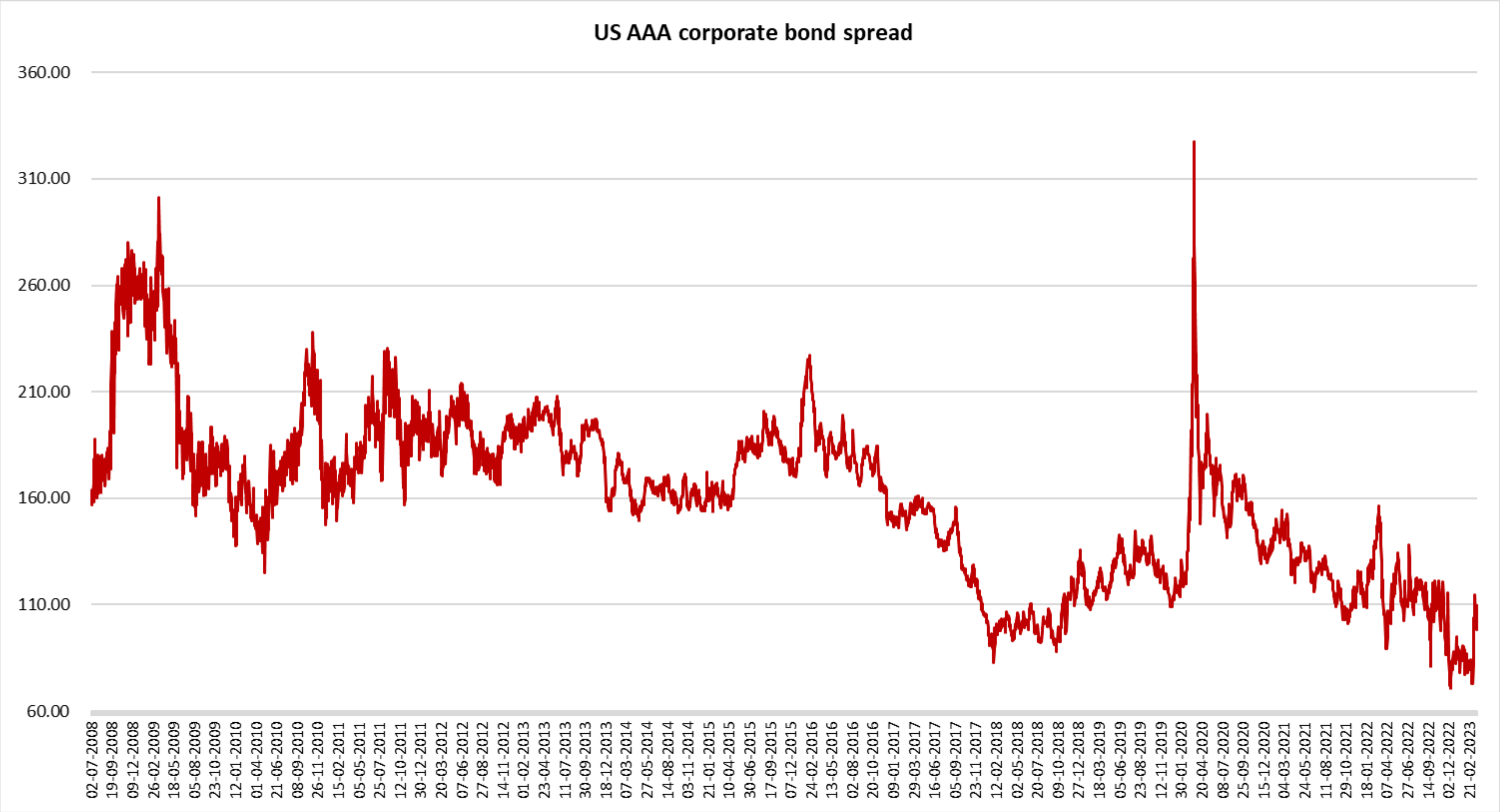
US has unveiled a $30 bn package to bolster the banking sector: RBI has fostered a culture promoting sound underlying playfield

Donor US Bank	Amount ($ Bn)	Domestic Assets of Bank ($ Bn)	RBI moves to foster a culture
Bank of America	5	2291	Pvt Bank in distress steadied through a consortium of Champion banks
Citigroup	5	1069	Financial Services Providers (including NBFCs) brought under IBC
JPMorgan Chase	5	3202	Cash run on select bank(s) during GFC averted through collaborative co -operation from bigger, champion banks
Wells Fargo	5	1693	slew of measures for banks during pandemic
Goldman Sachs	2.5	439	reduction in CRR for liquidity enhancement
Morgan Stanley	2.5	210	Enhancement in Banks’ HTM limit
BNY-Mellon	1	237	50,000 cr to AIFIs for new lending in 2021-22
PNC Bank	1	551	Targeted Long-Term Repo Operations (TLTROs) and enhanced MSF for additional liquidity
State Street	1	209	Moratorium on Term Loans and Deferment of Interest on Working Capital Facilities
Truist	1	546	Support to Real Estate Sector
U S Bank	1	575	Permitting Banks to Deal in Offshore Non-Deliverable Rupee Derivative Markets (Offshore NDF Rupee Market)

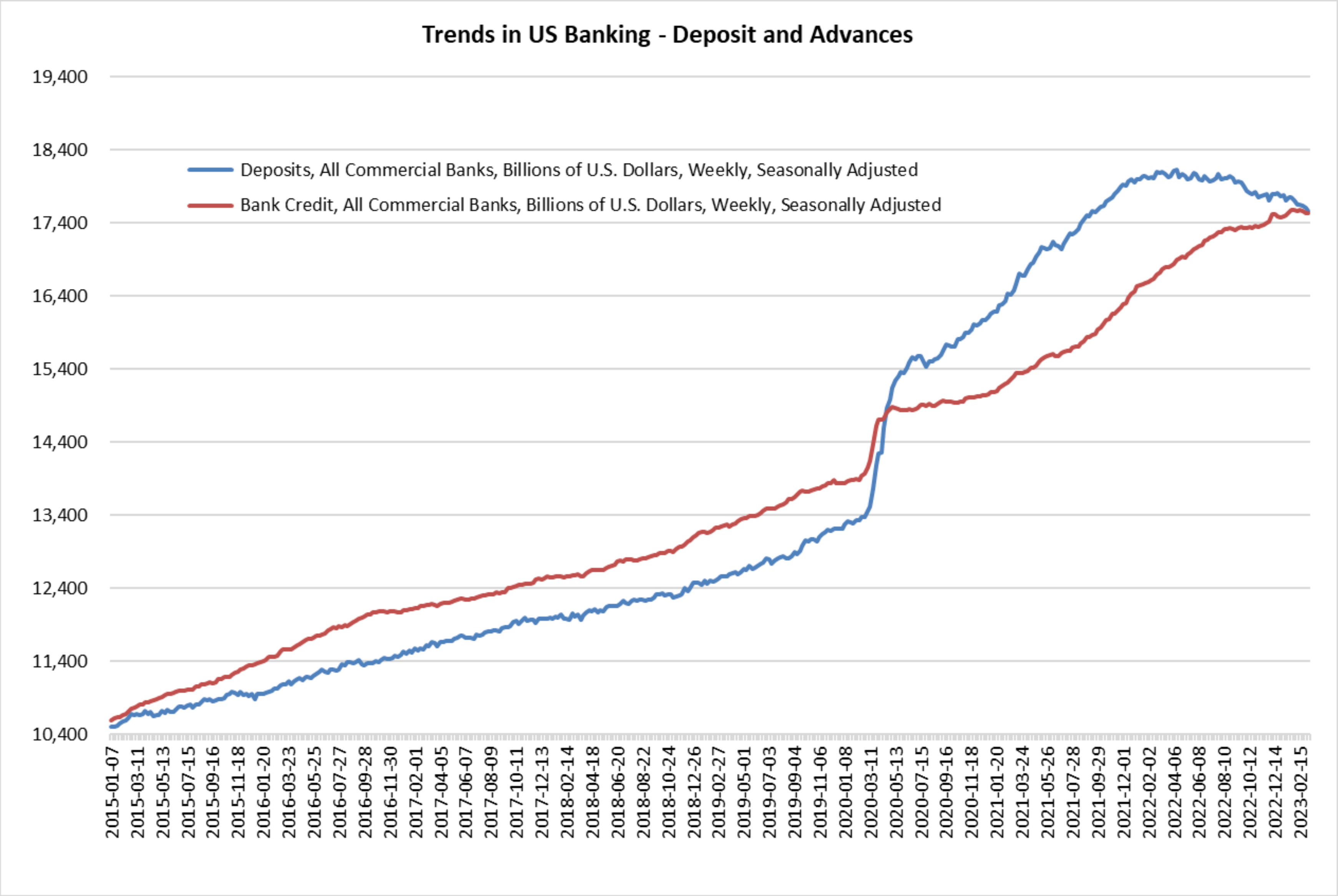
The US yield curve is now inverted, the first time since 2008



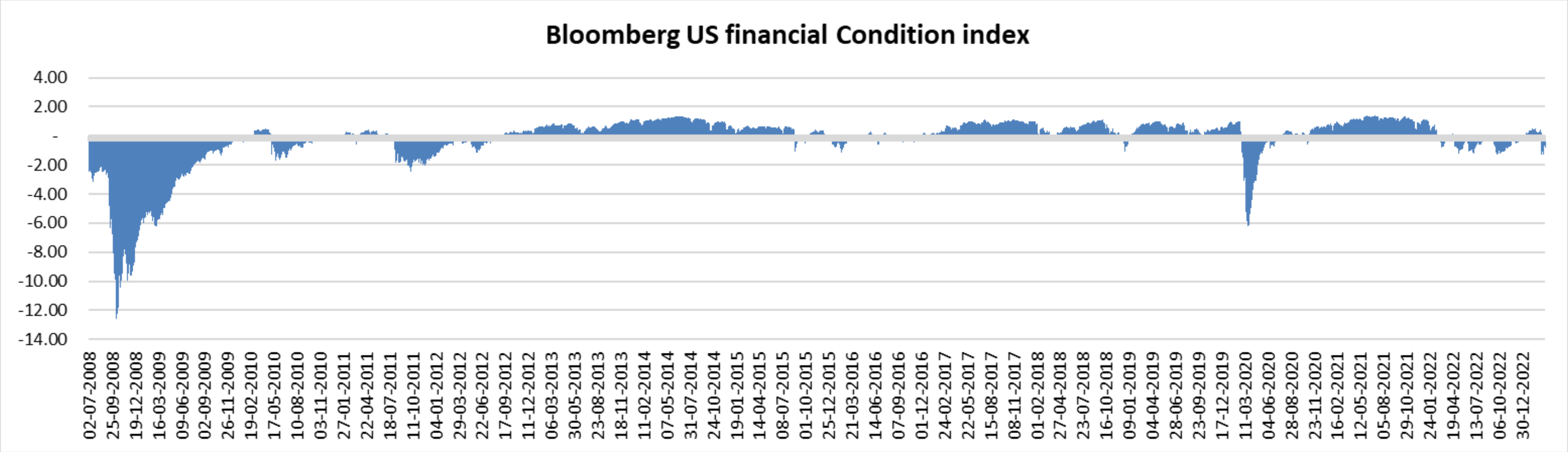
The US AAA corporate bond spreads hardening

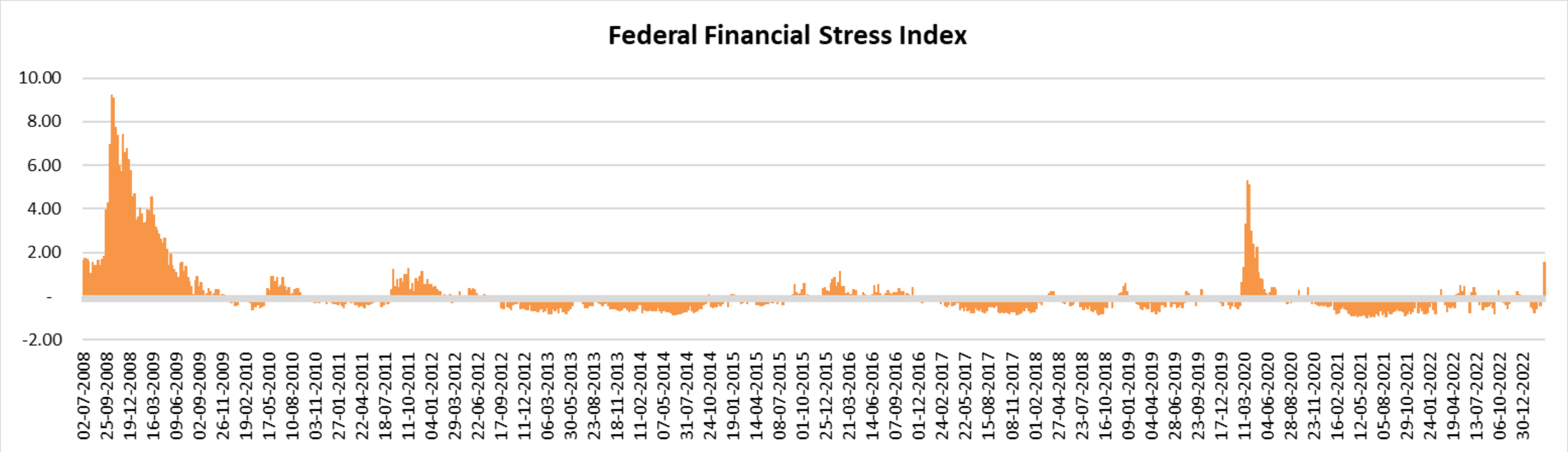


The US banking system inching towards balancing liquidity

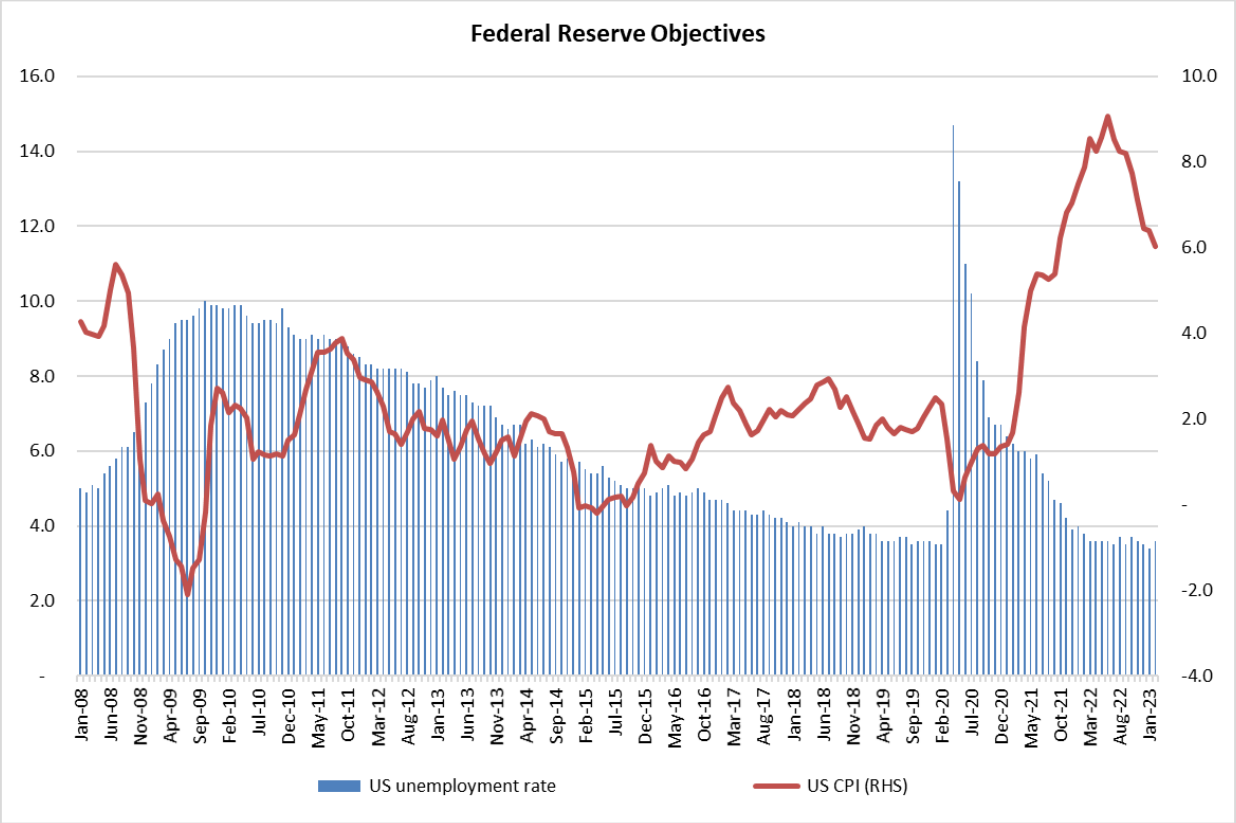


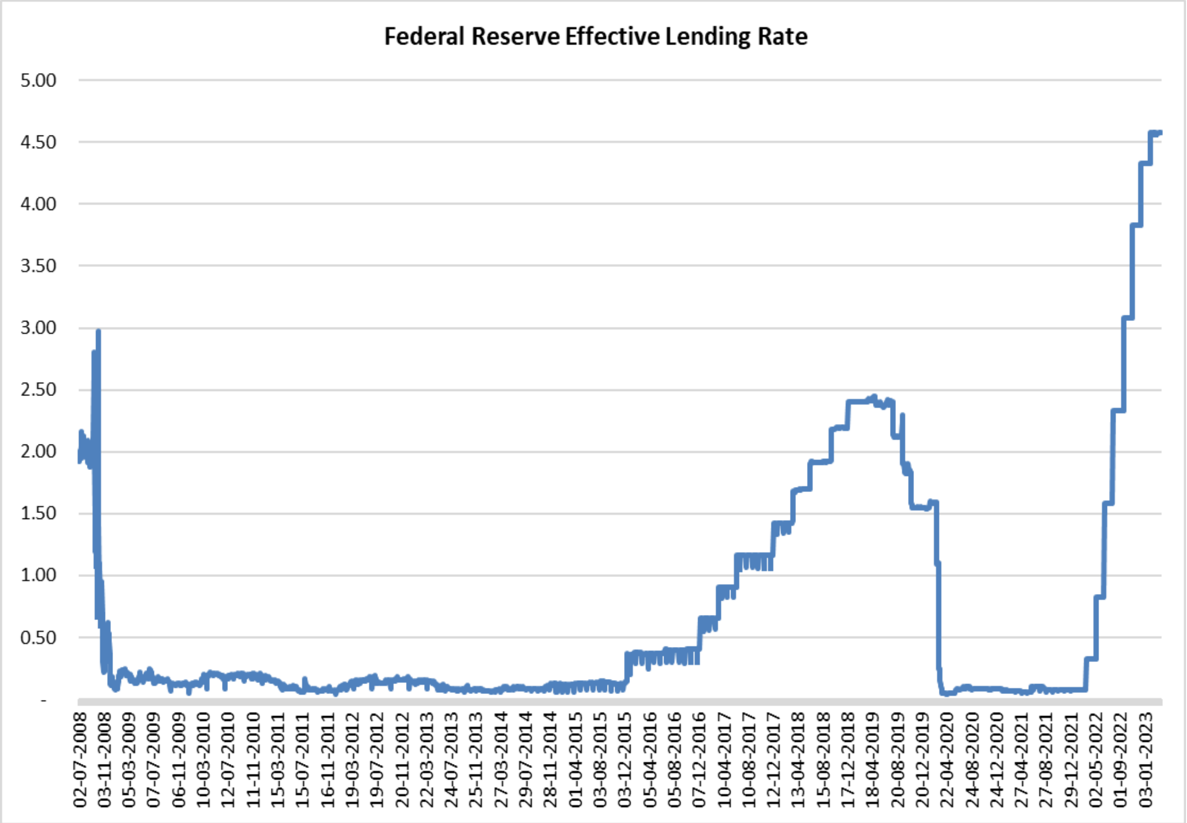
Overall, the US markets inching towards tight financial conditions and stress





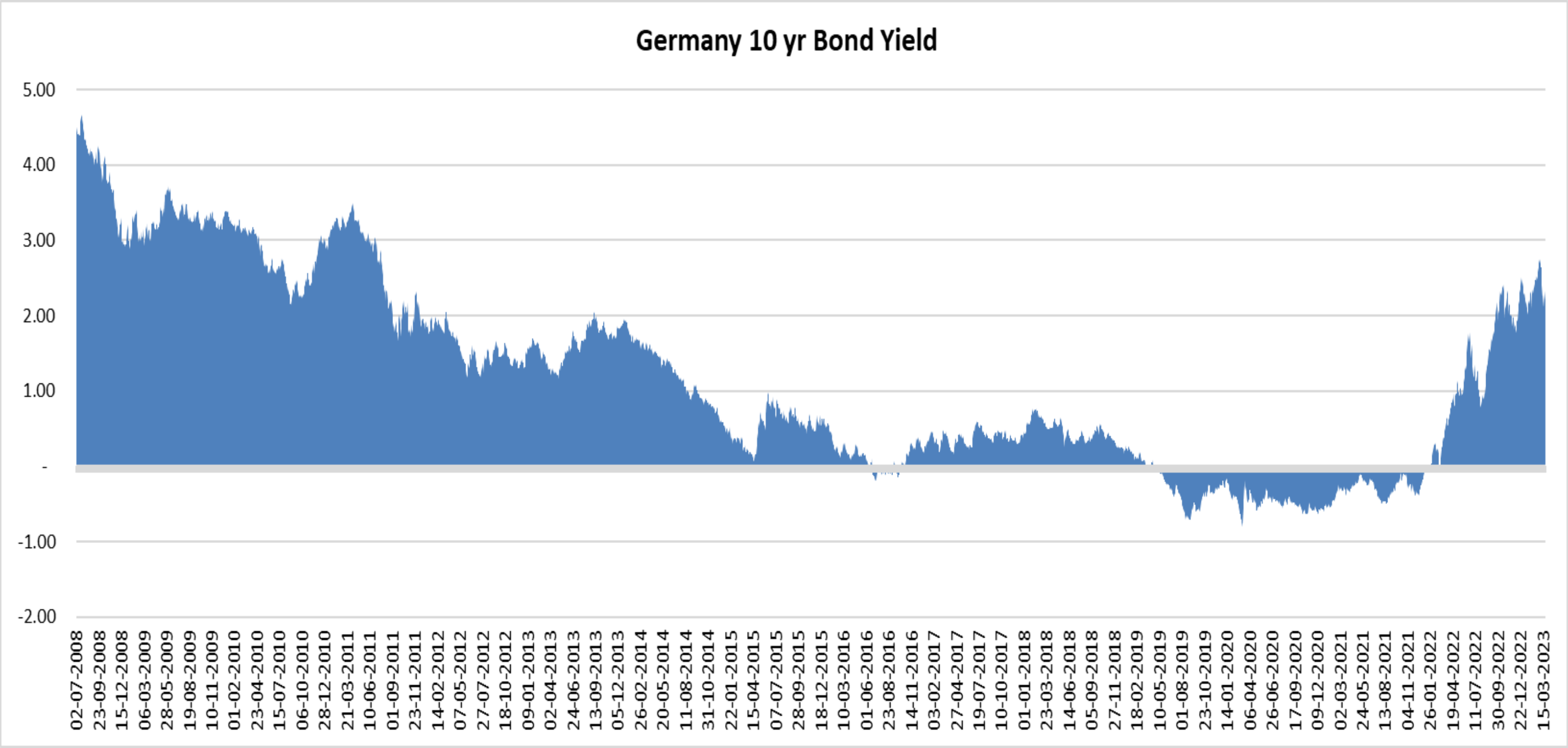
Federal Reserves objectives and lending rates through time show no softening of stance as off now:Dot plot suggests rate cuts are increasingly priced in

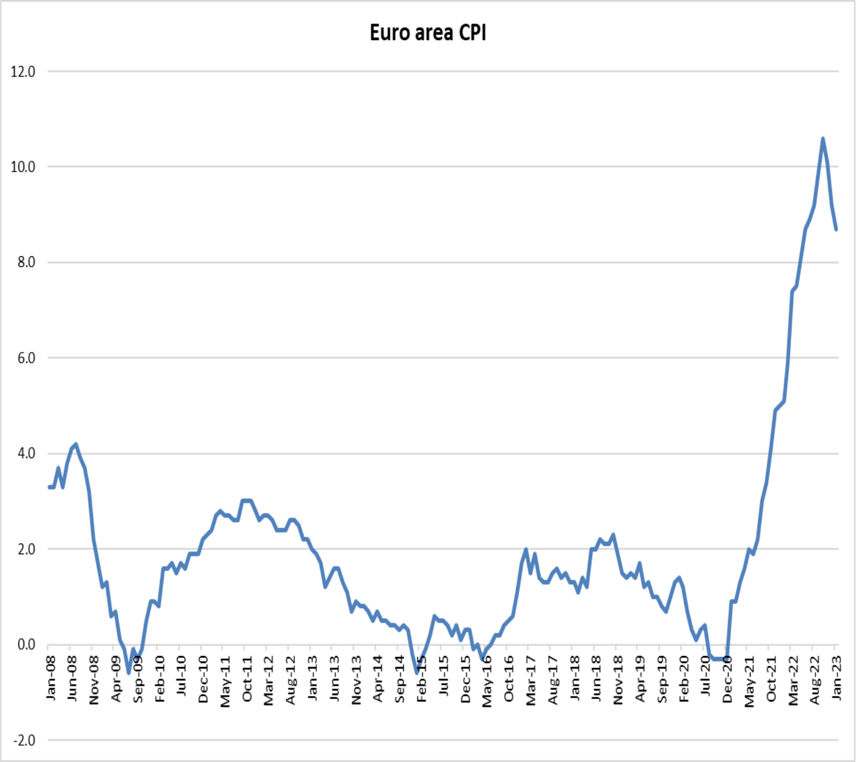




Historical trends indicate no softening of stance in the near future although there might be some reduction in pace

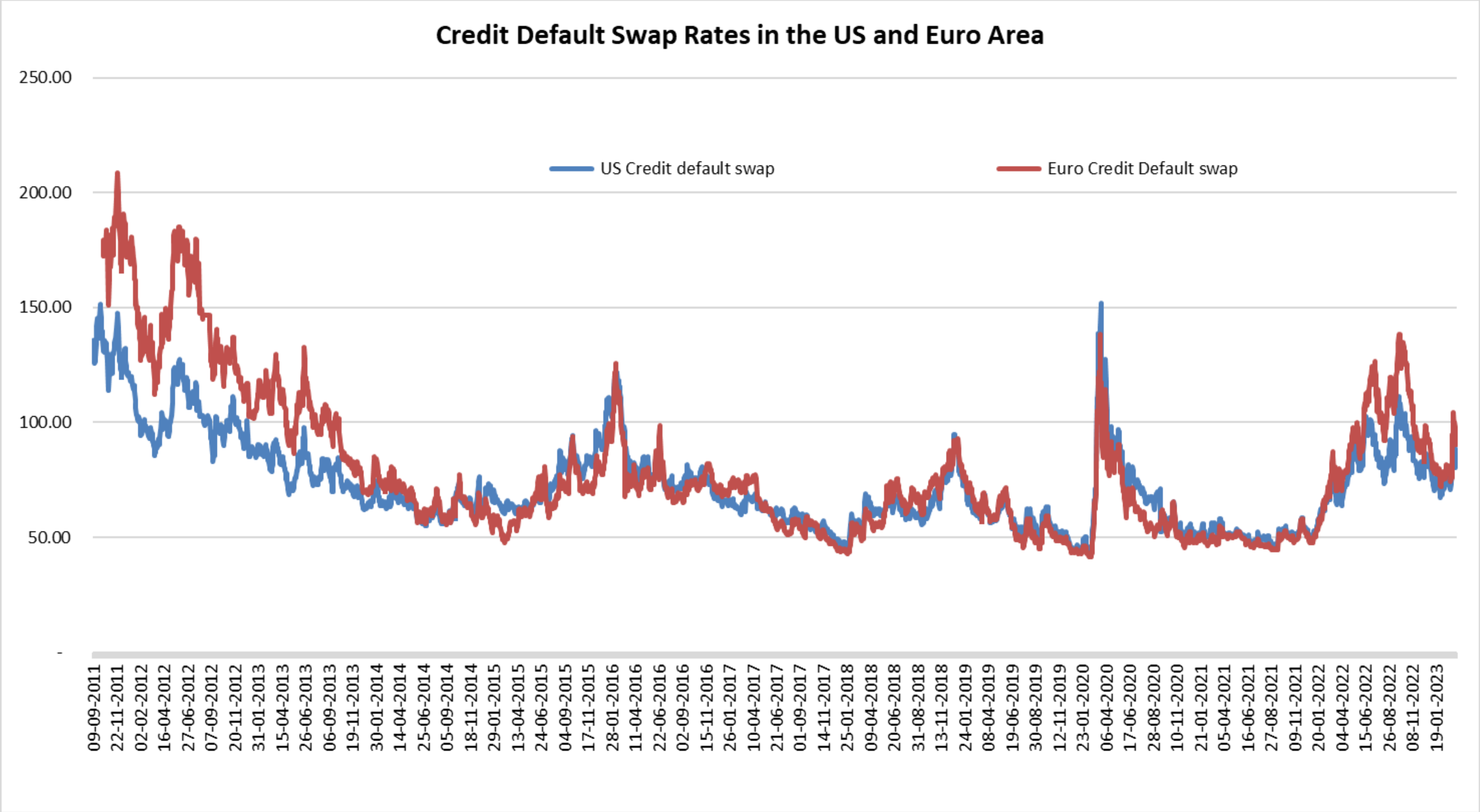
Euro areas inflation and interest rates





- Inflation remains extremely high with reference to peak seen in 2008
- Pressure to withdraw liquidity given the strain on cost of living will stay
- Reversal of negative yields is growth negative

CDS markets indicate rising cost of credit insurance in both the US and Euro area



E.U. Confidential: The 'Seek & Destroy" wave moves towards the Atlantic

- Fresh bouts of selling pressure in select larger European banks' shares on Friday, after an ultra short-lived relief rally, left markets second guessing if the trust deficit in the empirical / 'housbanking' model of EU has clouded the prospects of banks with arguably better capital / liquidity ratios today (when compared to 2007 pre-crisis)
- The spike in CDS spreads (in particular senior debt) for some banks is somewhat remotely reminiscent of the events preceding the ultimate demise of another big Bank last week as markets appear a little tensed on Commercial Real Estate exposure of certain banks (percentage of CET1) in the US where the tech meltdown and lay-offs can have collateral effect on the sector going forward as also the multi trillion notional OTC derivative book of banks. Write-off in AT1 of CS has also impacted the funding costs with jittery investors demanding a juicier risk premium
- The macro environment remains challenging with a lack of conducive regulatory environment, as also limited opportunities for advanced consolidation of sector when compared to larger market of US which can demand better terms of trade (a few larger banks in US are having much more visibility than 22 large banks in Europe and are challenging the universal banking model of these banks. European MSCI Banking index has continually underperformed the broader MSCI Europe Index for years and the uneven rate hike by ECB through 2022-23 with alarmingly little clarity on glide path to bring inflation within mandate (till 2025, it is predicted to remain above 2%) while seeping issues on impacts of the lingering war have aggravated the matter to a tipping point perhaps!

Federal Reserve and ECB rate outlook

- Fed rate outlook – Moderate pace, possibly one more hike of 25 bps
- The balancing of liquidity in the US banking system to feeds into policy stance thus balancing stability and inflation objectives
- The stress in financial system is in early stage and can be contained
- The ECB will keep the stance as tightening as crisis in Swiss banking is now contained
- Possible resolution of Russia-Ukraine Conflict can alter the path of policy rates
- ECB rate outlook – Uncertain but possibly more than 25 bps

Is it time for decoupling?

Using Artificial Neural Network (ANN) Model of Machine Learning we have constructed 4 scenarios of repo rates

ANN has been trained for the period of Feb 22 to Nov 22, with lag 1 data of CPI, Core CPI and Fed rate

- SCENARIO 1
  - If the MPC had only considered domestic CPI headline inflation numbers, while taking a call on repo rate, the peak rate in the cycle would have been at 5.20% and the current rate at 4.79%
- SCENARIO 2
  - If the MPC had considered only Fed rate hikes, while taking a call on repo rate, the peak rate in the cycle would have been at 6.16% and the current rate also at 6.16%
- SCENARIO 3
  - If the MPC had considered both domestic CPI headline inflation & Fed rate hikes, while taking a call on repo rate, the peak rate in the cycle would have been at 6.20% and the current rate also at 6.20%
- SCENARIO 4
  - If the MPC had considered domestic CPI headline inflation, CPI Core inflation & Fed rate hikes, while taking a call on repo rate, the peak rate in the cycle would have been at 6.27% and the current rate also at 6.27%
- Thus in all the scenarios, the peak rate is lower than current RBI rate at 6.5%. Alternatively, while RBI has managed inflation by frontloading the rate hikes, an appropriate policy response could be now looking through the cycle to gauge the impact of past rate hikes and take a considerate pause in April policy

Repo Rate Decomposition					
		Optimal Repo Rate based on mutually exclusive scenarios			
Month	Repo Rate	SCENARIO 1:If the MPC had considered only CPI for deciding repo rate	SCENARIO 2:If the MPC had considered only Fed rate for deciding repo rate	SCENARIO 3:If the MPC had considered both CPI & Fed rate for deciding repo rate	SCENARIO 4:If the MPC had considered CPI, Core CPI & Fed rate for deciding repo rate
Feb-22	4	3.94	4.01	3.98	3.92
Mar-22	4	4.21	4.01	3.99	4.02
Apr-22	4	5.15	4.23	4.25	4.24
May-22	4.4	5.20	4.23	4.30	4.27
Jun-22	4.9	5.15	4.65	4.64	4.74
Jul-22	4.9	5.15	5.20	5.17	5.15
Aug-22	5.4	5.06	5.60	5.59	5.46
Sep-22	5.9	5.15	5.60	5.60	5.61
Oct-22	5.9	5.19	5.88	5.90	6.02
Nov-22	5.9	5.10	5.88	5.89	5.86
Dec-22	6.25	3.66	6.05	6.07	5.93
Jan-23	6.25	3.11	6.13	6.16	6.04
Feb-23	6.5	4.91	6.13	6.17	6.19
Mar-23	6.5	4.79	6.16	6.20	6.27

Source: SBI Research

CPI Inflation

Even if we assume core inflation to be sticky at 5.6%, the projected terminal repo rate comes at ~ 6.25%

- RBI has projected inflation to remain in the range of 5.2% to 5.5% in FY 24
- Sticky Core Inflation is anticipated to remain in the range of 5.4% to 5.6% in FY 24
- Fed Future implied terminal rate is expected to remain in the range of 4.85% - 4.95% in CY 23
- Considering the combination of all three projections, Optimal Repo Rate will be in the range of 6.2 % to 6.32%
- **Considering Repo Rate is already around 25 basis points higher than optimal requirement (basis CPI, Core CPI and Fed rate), 6.5% Repo Rate could be considered as Terminal rate**
- Therefore, we expect Status Quo from RBI in April MPC meeting

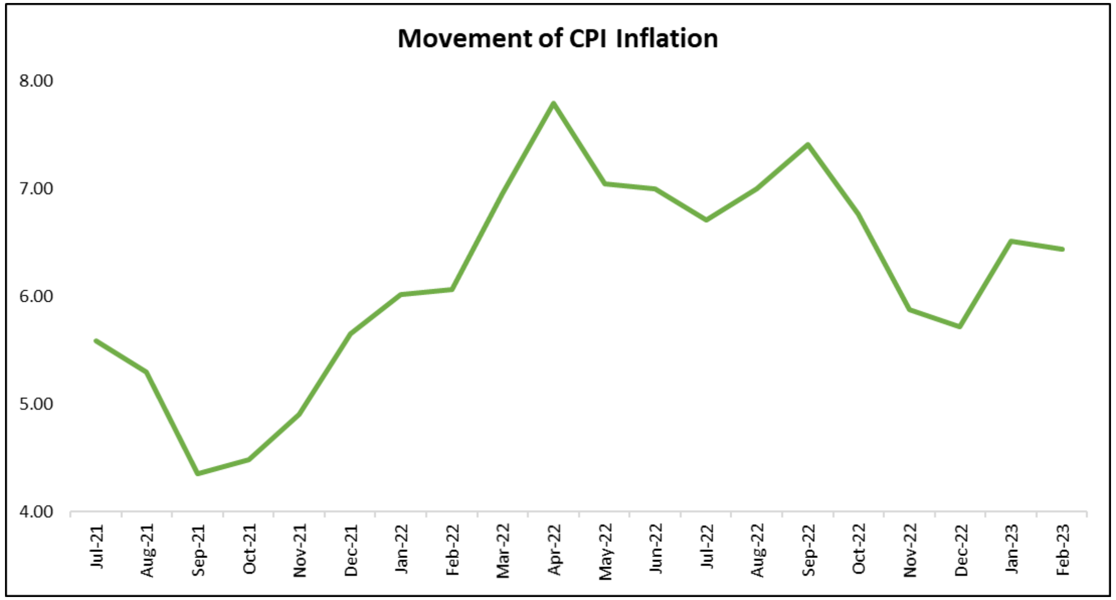
Optimal Repo Rate Projections

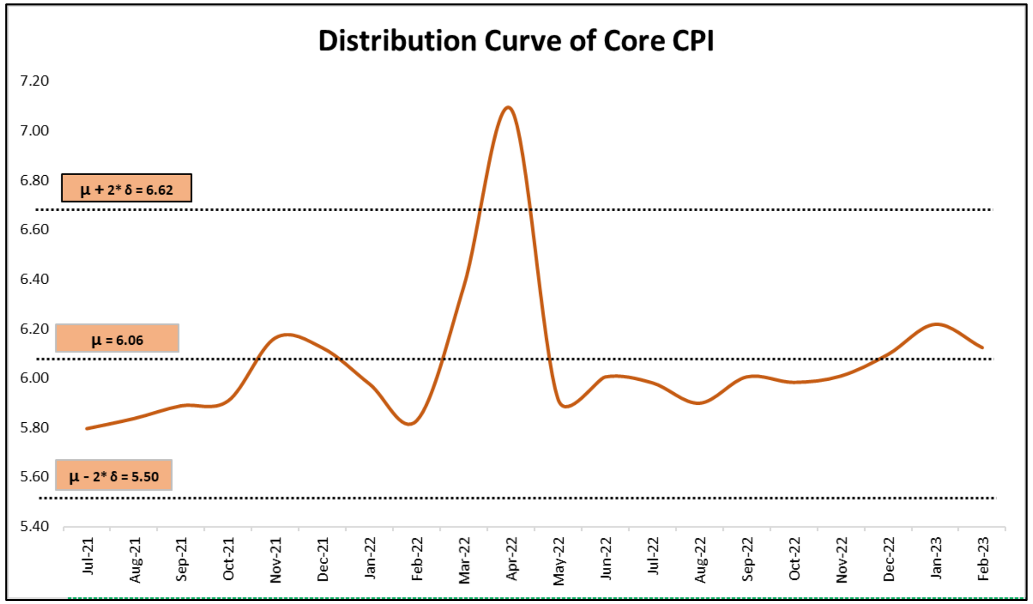
Scenario	CPI	CoreCPI	Fed (Future Implied rate)	Optimal Repo Rate
Scenario 1	5.2	5.4	4.85	6.24
Scenario 2	5.2	5.4	4.95	6.27
Scenario 3	5.2	5.6	4.85	6.20
Scenario 4	5.2	5.6	4.95	6.23
Scenario 5	5.5	5.4	4.85	6.29
Scenario 6	5.5	5.4	4.95	6.32
Scenario 7	5.5	5.6	4.85	6.26
Scenario 8	5.5	5.6	4.95	6.28

Source: SBI Research

Food inflation drives Headline Inflation as Core CPI is sticky and unlikely to decline much

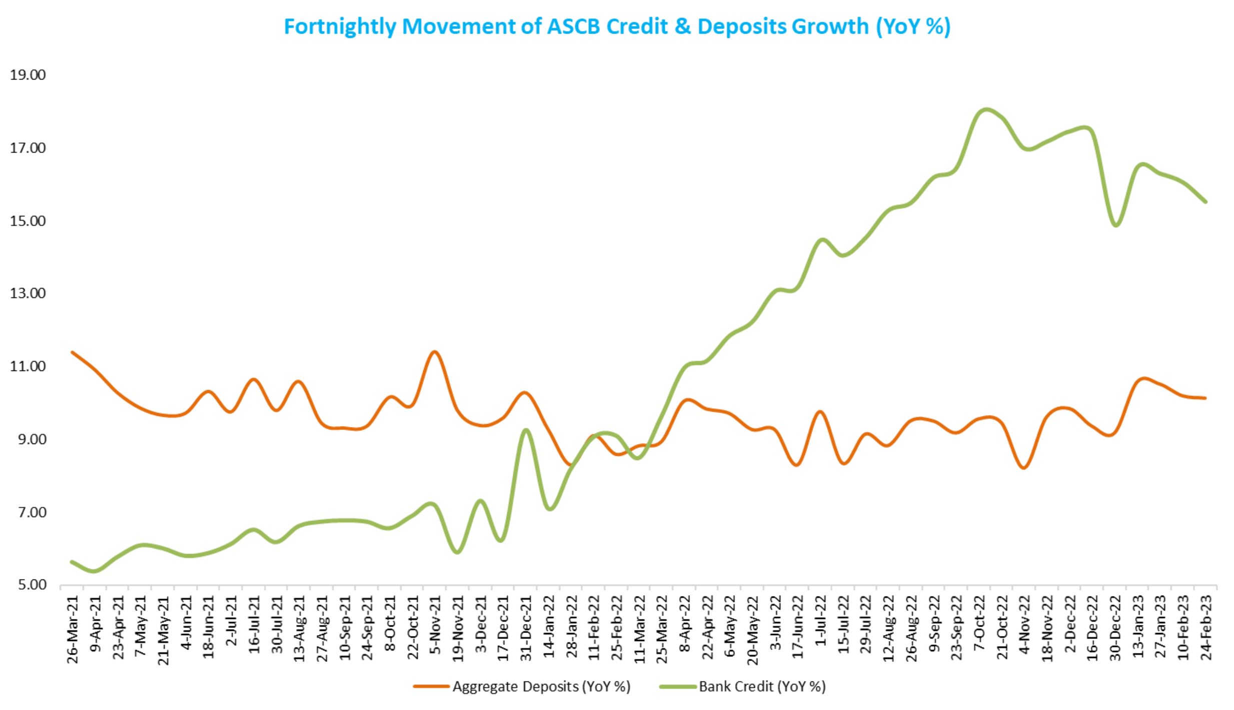
- While CPI inflation has fluctuated in the range of 4-8% (since July-21) and is at 6.44% in Feb’23, while core CPI is sticky around 6% during the same period and is at 6.12% in Feb’23
- However, the core CPI data indicates that stickiness is the normal property of core inflation. The average core CPI is 5.84% since January 2012 and the distribution indicates that the peak is hovering around 6-6.5%
- Additionally, health, education & gold contribution has jumped. This has more to do with post pandemic expenditure shifts and purchase of gold to beat inflation
- The distribution of core CPI over the last 20-months indicates a nicely shaped Bell curve, with mean Core CPI at 6.06%. Interestingly, if we look at 95% confidence interval, except 1-month (Apr’22) all the Core CPI numbers are within that range, indicating that core CPI has nicely settled in the range of 5.5-6.6% range, with average at 5.99%





An update on Affordable Housing

- In 2022-23, Bank credit growth continues to be strong. As per the fortnightly bank credit data, incremental bank credit till 24 Feb’23 was at Rs 15.59 lakh crore. On an YTD basis deposits grew by Rs 13.96 lakh crore
- With economic activity gaining momentum, growth in bank credit for working capital has also caught up in recent months reflecting an optimistic outlook for demand conditions. However, the continuous increase in repo rate will impact retail borrowers as interest cost through EBLR passed directly
- We expect credit may grow up by 12%-13% (YoY) in FY24 after 15-16% (YoY) in FY23 and deposits growth at 10-11% in FY23 & FY24



Transmission of Policy Rate	Mar-22	Latest	Change (in bps)
Repo Rate	4.00	6.50	250
Wt Avg. Lending Rate (WALR) on O/S Rupee Loans	8.74	9.58	84
WALR on Fresh Rupee Loans	7.63	9.00	137
Wt Avg. Domestic Term Deposits (WADTDR) on O/S Deposits	5.03	5.90	87
ASCB-MCLR (1 Year)	7.25	8.45	120
SBI Term Deposits (400 Days)	5.10	7.10	200
SBI EBLR	6.65	9.15	250
SBI MCLR –6 Months	6.95	8.40	145
SBI MCLR –1 Year	7.00	8.50	150

Impact of Rate hike on Home Loan Buyers

- Home loans have been linked with repo rate since Oct'19. Repo rate was reduced by RBI during Oct'19 to May'20 while it was increased from May'22 to Feb'23
- Meanwhile, the rapid increase in EBLR has resulted in banks to either increase the loan tenure or increase in EMI or both depending on the age of the borrower, tenure of the loan and the residual tenure of the loan
- Our analysis indicates that: Of around 55 lakh home loan accounts linked to EBLR, ~47 lakh customers with loans amounting to ~Rs 8 lakh crore witnessed increase in tenure or EMI or EMI & tenure in their existing home loan

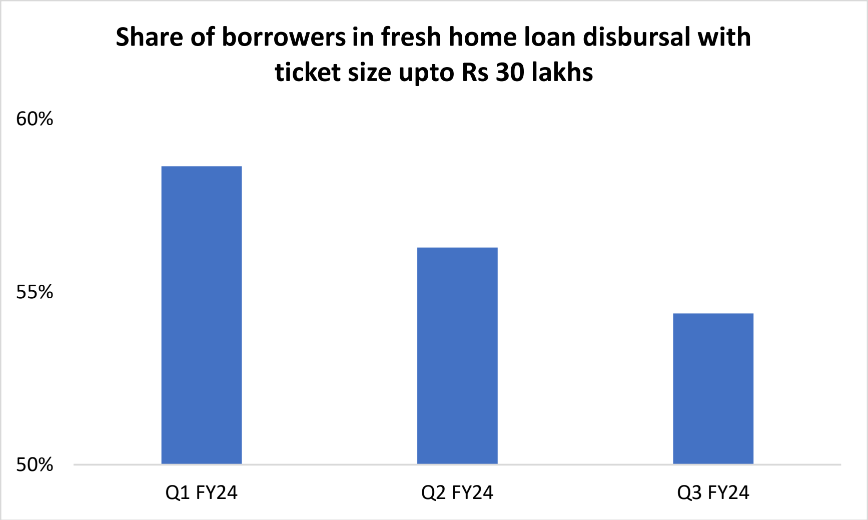
Estimate of Impact of Rate Hike on Home Loan Buyers		
	# of Accounts (in lakh)	Amount oustanding (Rs lakh crore)
Total Home Loan Customers	115	18.9
EBLR share	48%	
Total Home Loan a/c linked with EBLR	55.2	9.1
Out of which:		
Borrowers who have either increase in loan tenure or increase in EMI or increase in both EMI & tenure	47.0	8.2
Borrowers who have capability to prepay	8.2	0.9
Source: SBI Research, RBI		

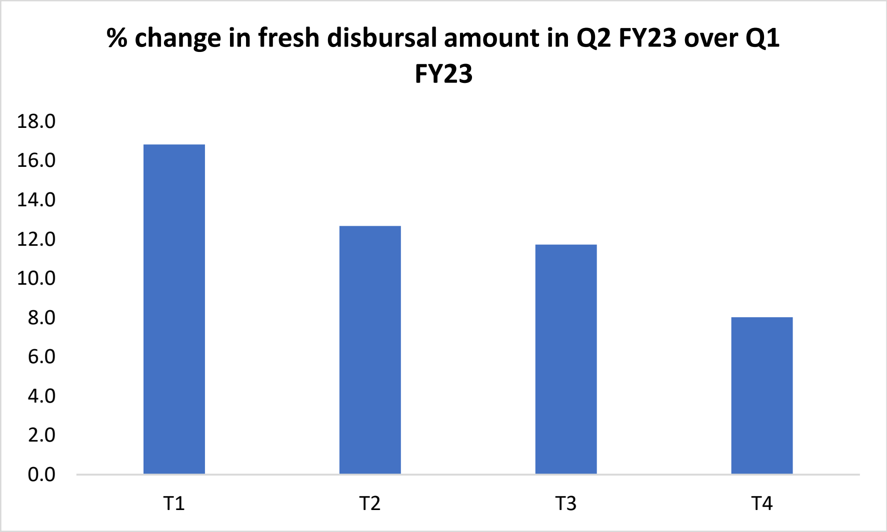
Affordable Housing slowing down?

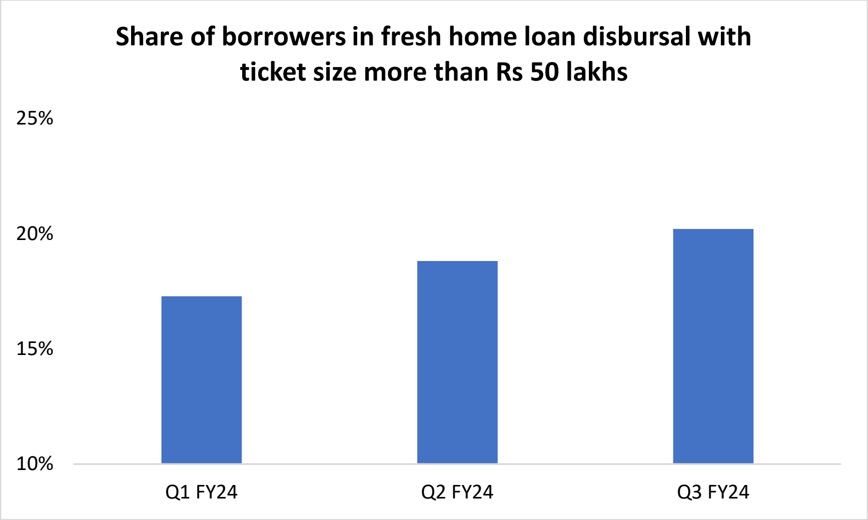
- Estimation of fresh disbursal of home loans by the ASCB show that on an average the proportion of home loans upto Rs 30 lakhs in total loans disbursed has declined in FY23. Moreover, if we look at above Rs 50 lakh loans, their share has increased indicating an increasing asymmetry

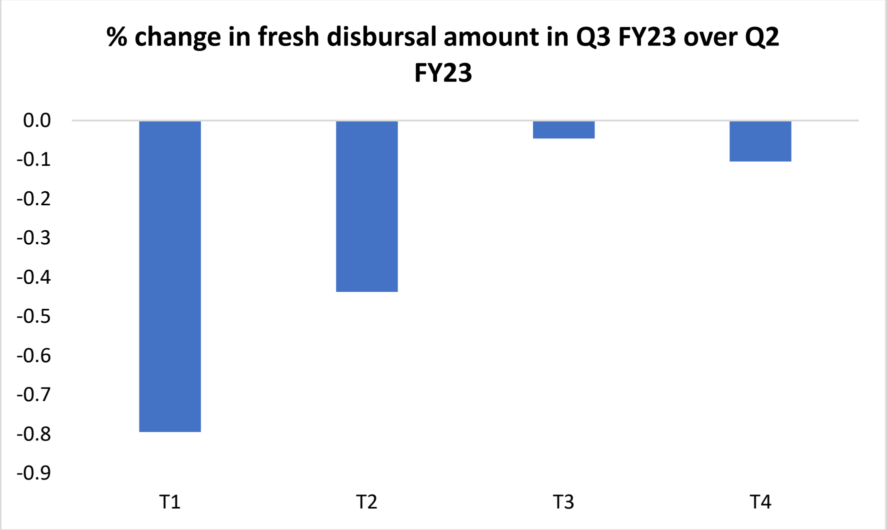
- Further, the amount of fresh home loans by people at the lower end of the strata staying in tier 3 and tier 4 areas (rural areas) who take loans for affordable housing sector has been hit

- Sequential growth has perceptibly slowed down in Q3FY23 over Q2FY23



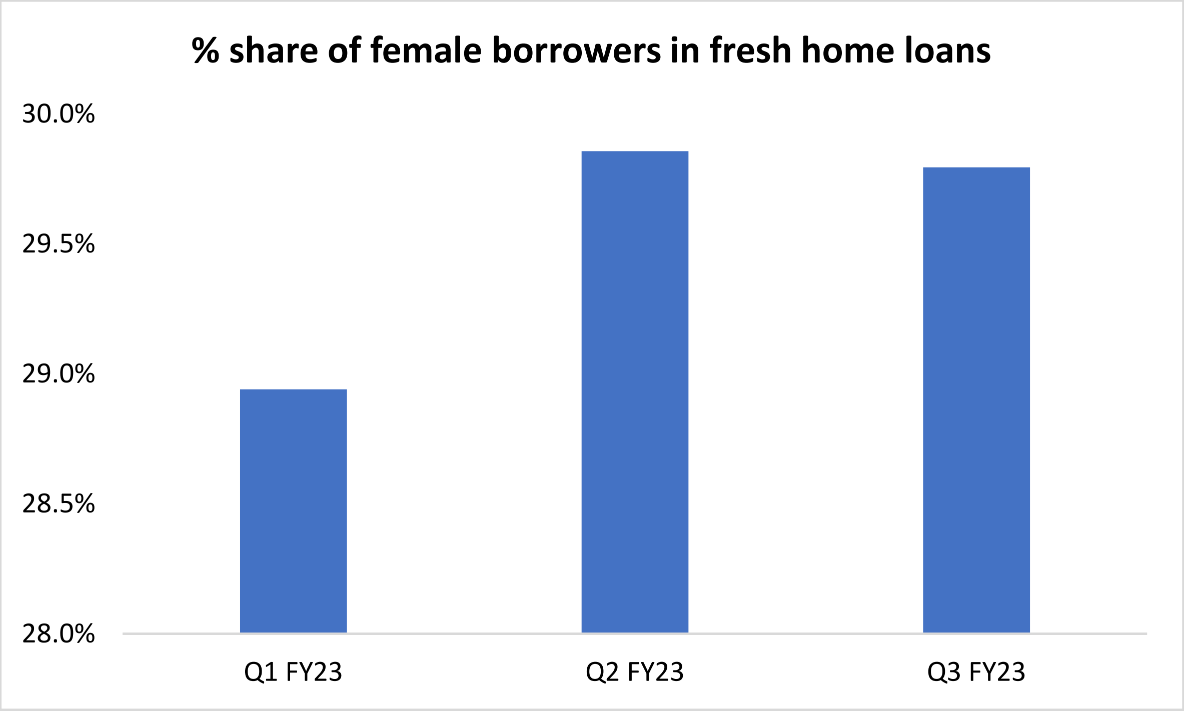


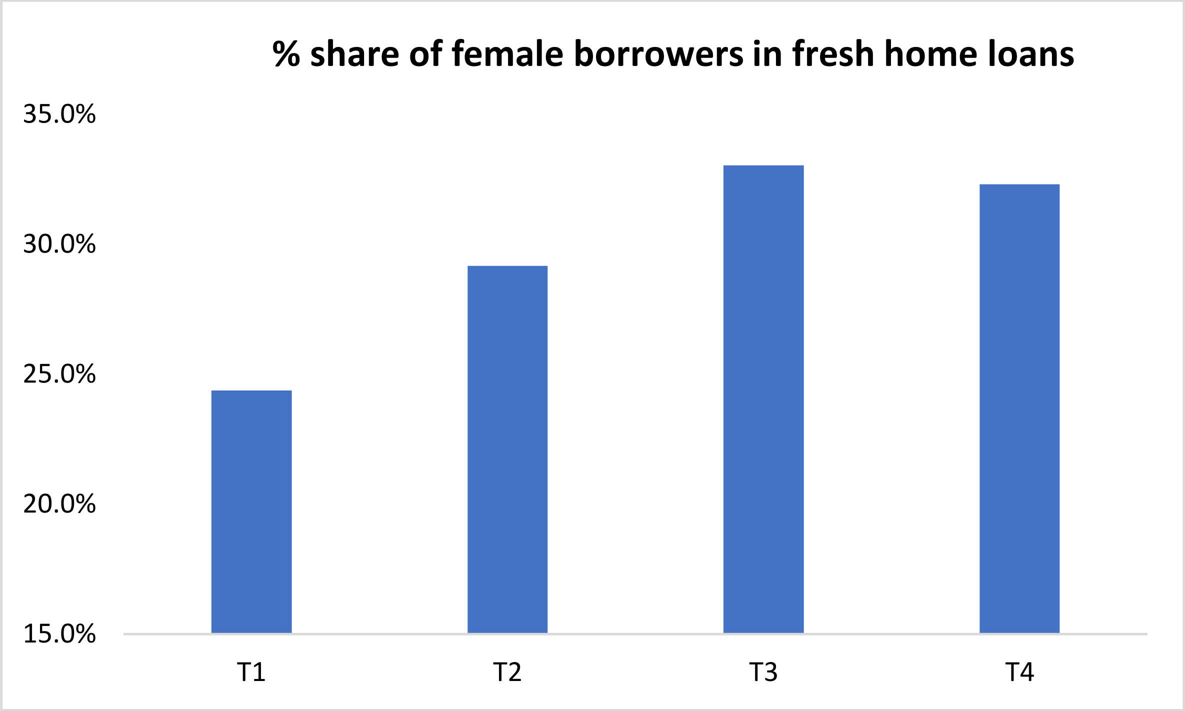




The good thing is female home loan borrowers is rising gradually

- Female borrowers in fresh home loans disbursal has risen in this fiscal
- Overall, the share of women borrowers is more in T3 and T4 regions (rural areas)





Domestic Liquidity: Liquidity has again turned deficit

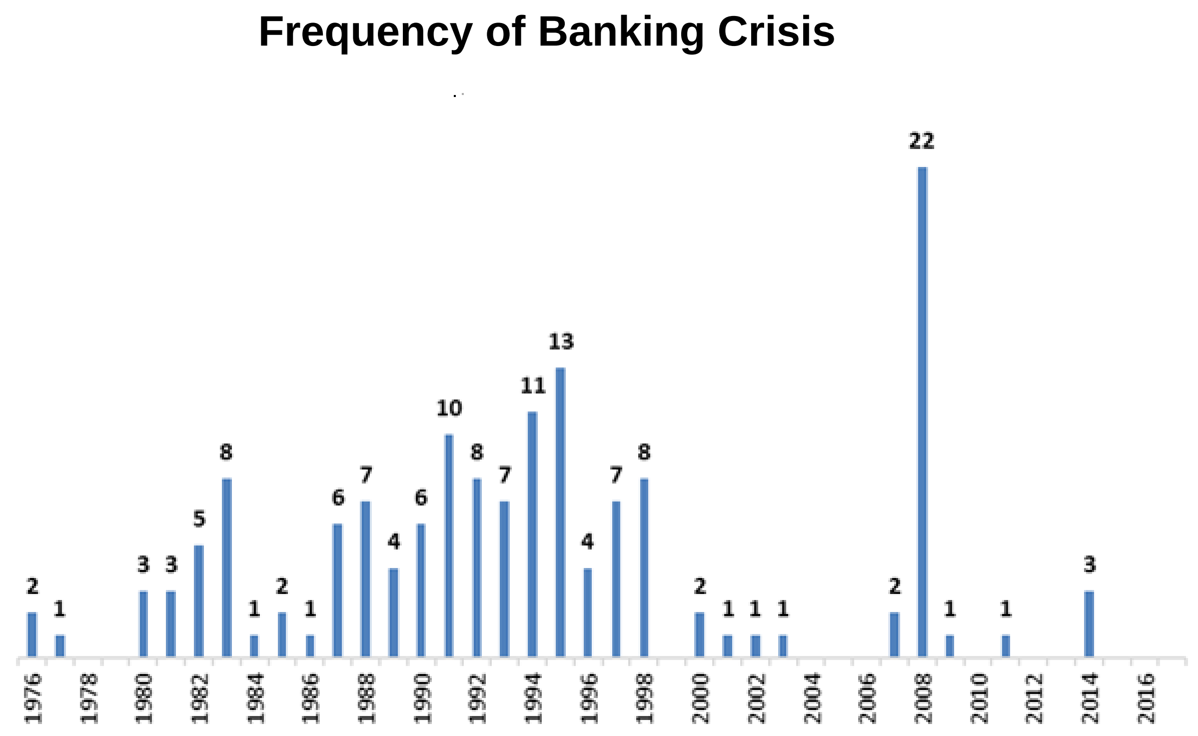
- Liquidity inflows to the financial system could be either policy induced by the central bank (for example changes in reserves, open market operations etc) or non-policy induced (foreign exchange reserves, government cash balances, and currency in circulation)
- Liquidity in the system has turned deficit with the Net LAF injection at Rs 0.45 lakh crore as on 22 Mar'23 compared to surplus of Rs 6.35 lakh crore at the beginning of the fiscal year. Average core liquidity has reduced to Rs 1.59 lakh crore, which is lower than the non-inflationary amount considered by RBI (1.5% of NDTL currently at Rs 2.86 lakh crore)
- By March-end, we expect that the system might be in liquidity deficit within tolerable limits if there are no liquidity injection / withdrawals

Liquidity Position (Rs lakh crore)			
	01-Apr-22	22-Mar-23	Average in FY23
Repo Outstanding	0.84	1.65	0.89
Reverse Repo Total	6.78	0.00	1.47
SDF statrted on 08.04.2022	2.35	1.42	1.42
MSF	0.01	0.01	0.04
Net LAF (+absorption)	6.35	-0.45	1.57
Government Cash Balance	1.08	2.02	2.55
Core Liquidity (+Surplus)	8.32	1.59	4.15
Source: RBI, Bloomberg, SBI Research			

Banking Crisis

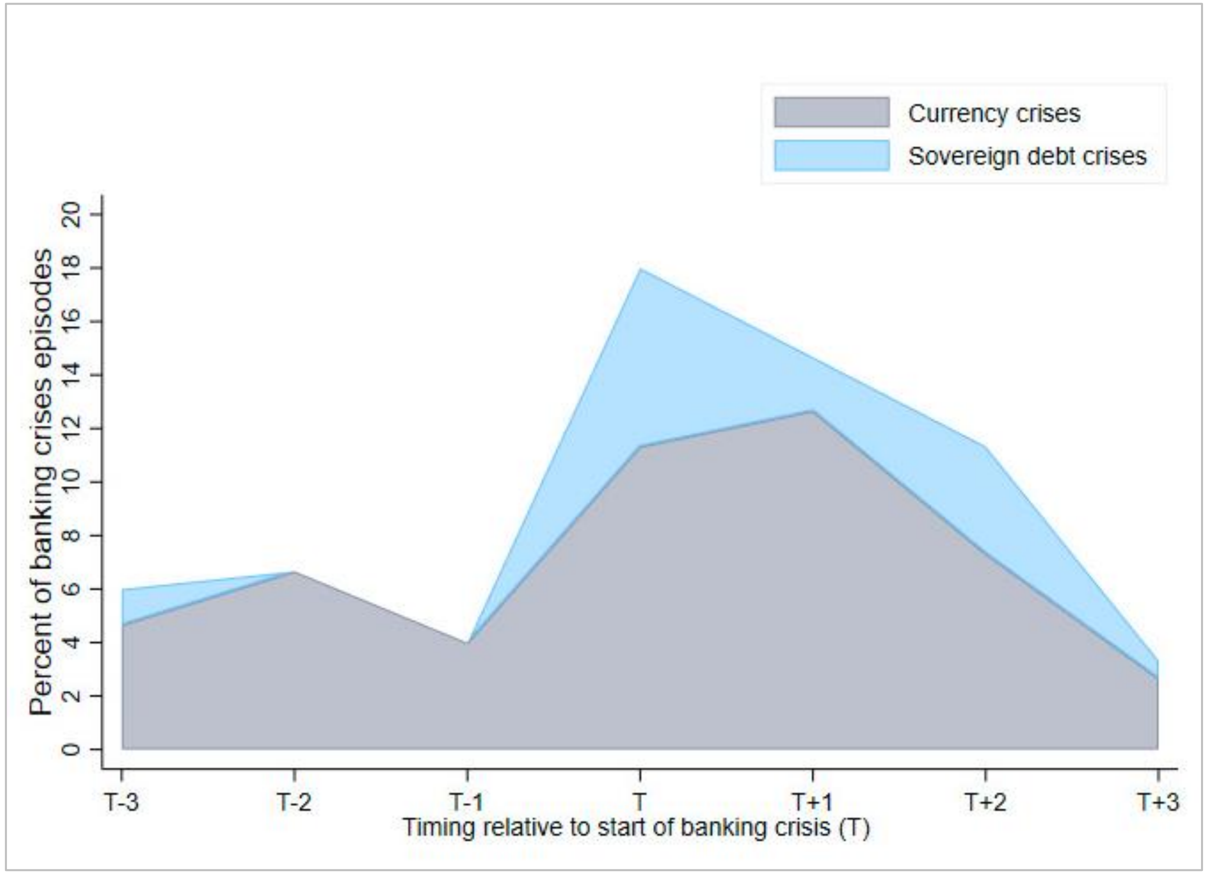
Frequency of Banking Crisis

- Systemic banking crisis are highly disruptive events which lead to sustained declines in economic activity, financial intermediation, and ultimately in welfare
- A banking crisis is defined as an event that meets two conditions:
  1. Significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations)
  2. Significant banking policy intervention measures in response to significant losses in the banking system
- As per this definition and based on database created by Laeven and Valencia, a total of 151 systemic banking crisis occurred between 1970-2017



Sequencing of crisis

- Why understanding/timing of banking crisis is important?
  - Because it is common for banking crisis to happen at the same time or precede currency and sovereign debt crisis
- Research suggests that currency and sovereign debt crisis, on average, tend to coincide or follow banking crisis, with currency crisis peaking at one year after the beginning of the banking crisis



Indian Banking System: Epitome of Resilience

- In case of crisis and spread of balance sheet contagion, countries with limited direct and indirect exposure will remain resilient

- Foreign Claims on India are $104.2 bn on Immediate Counterparty basis, and $81.5 bn as Guarantor Basis. When compared with other major countries, India has least Foreign Claims, both as counterparty basis, and also as guarantor basis

- Further, our ratio of Foreign claims to Domestic claims is also least among countries signifying that our banking and financial system is very disciplined, and no international balance sheet contagion can start from India

Q3 2022 Foreign Claims by nationality of Banks (Immediate Counterparty basis) (USD Billions)

	Foreign claims	International claims				Local Currency Claims
		Total	By remaining maturity			
			Up to one year	one year to two	Over two years	
All bank nationalities	32696	19151	9123	937	6226	13541
Japan	4692	3547	465	183	1545	1145
United States	4345	2708	2042		666	1637
United Kingdom	4039	1992	1275	75	179	2048
France	3090	1593	799	111	544	1496
Canada	2415	906	404	58	331	1510
Germany	1913	1427	571		391	486
Spain	1903	570	275	57	221	1333
Switzerland	1504	1000	662	64	219	501
Netherlands	1408	693	467	35	176	716
Italy	925	511	153	41	260	414
Australia	745	282	200	18	58	463
Singapore	649	350				299
Austria	446	217	78	22	116	229
Chinese Taipei	431	315	121	31	160	116
Sweden	404	141	96	8	34	263
Belgium	264	130	70	7	51	134
Korea	262	209	108	17	77	53
India	**104**	**78**	**59**	**4**	**15**	**26**

Source: BIS

Final Thought: A Pause

- So, what will be the RBI's policy look like:

Indicator	Our View
Repo rate	• We expect the RBI to pause in April policy • Latest data suggests that bank borrowings from the recently announced Fed Bank Term Funding Programme /BTFP & FHLB window reveal that fears of a greater bank contagion is receding, though deposits of small banks continue to decline at expense of larger banks. Smaller banks seems to be borrowing from Fed to overcome any deposit run. Thus, global conditions are still evolving and fluid. • We believe at 6.50%, it could be the terminal rate for now…
Stance	• The stance could continue to be withdrawal of accommodation, even as liquidity is now in deficit mode. RBI can always keep the options open in June policy • The RBI has enough reasons to pause in April. There are concerns of a material slowdown in affordable housing loan market and financial stability concerns taking centre stage. While concerns on sticky core inflation is justified, it may be noted that average core inflation is at 5.8% over the last decade and it is almost unlikely that core inflation could decline materially to 5.5% and below as post pandemic shifts in expenditure on health and education and the sticky component of transport inflation with fuel prices staying at elevated levels will act as the constraint. By this logic, RBI may then have to go for more round of rate hikes • Inflation data of March and April will only be known to RBI before June MPC meeting. Our expectations are that March inflation could be around 5.5% -5.6% and April inflation print will be around 4.7%-4.8%. Thus, the RBI will have a delicate balancing job of either looking forward to the June meeting with clear signs of inflation trending downwards or look backwards at the Jan and Feb prints in April policy. Thus, it will be a delicate choice
Risks for growth/inflation	• Fed rate hikes could be smaller in magnitude, and one last in May policy of 25 bps • The challenge is now to decouple from Fed. But the good thing is that a dovish Fed means soft dollar and thus lower depreciation risk for the Indian rupee in the short to medium term
Forward Guidance	• In an environment of rising rates, it is clearly not advisable to give a forward guidance

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