Outlook for US regional banks

Torsten Slok, Jyoti Agarwal, and Rajvi Shah
tslok@apollo.com

Apollo Global Management

May 2023
Legal Disclaimer

Unless otherwise noted, information included herein is presented as of the dates indicated. Apollo Global Management, Inc. (together with its subsidiaries, “Apollo”) makes no representation or warranty, expressed or implied, with respect to the accuracy, reasonableness, or completeness of any of the information contained herein, including, but not limited to, information obtained from third parties. Opinions, estimates and projections constitute the current judgment of the author as of the date indicated. They do not necessarily reflect the views and opinions of Apollo and are subject to change at any time without notice. Apollo does not have any responsibility to update the information to account for such changes. Hyperlinks to third-party websites in these materials are provided for reader convenience only. There can be no assurance that any trends discussed herein will continue.

The information contained herein is not intended to provide, and should not be relied upon for, accounting, legal or tax advice and does not constitute an investment recommendation or investment advice. Investors should make an independent investigation of the information contained herein, including consulting their tax, legal, accounting or other advisors about such information. Apollo does not act for you and is not responsible for providing you with the protections afforded to its clients.

Certain information contained herein may be “forward-looking” in nature. Due to various risks and uncertainties, actual events or results may differ materially from those reflected or contemplated in such forward-looking information. As such, undue reliance should not be placed on such information. Forward-looking statements may be identified by the use of terminology including, but not limited to, “may”, “will”, “should”, “expect”, “anticipate”, “target”, “project”, “estimate”, “intend”, “continue” or “believe” or the negatives thereof or other variations thereon or comparable terminology.
What is the banking sector response to the SVB collapse and associated deposit outflows? Cutting lending and selling mortgages
Negative growth in deposits

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Negative growth in bank holdings of mortgages
Growth in bank holdings of Treasuries

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Some decline in bank lending growth

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Decline in growth in lending to corporates

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Decline in growth in real estate lending
Decline in growth in lending to multifamily construction

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Negative growth in auto loan lending

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Some decline in growth in credit card lending

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
The FHLB system issued $247bn in debt in March, significantly higher than in 2008.

Source: FHLB, Haver, Apollo Chief Economist.
Overview
$940bn in deposits have left the banks since the Fed began to raise interest rates, the biggest outflow on record

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist. Note: March data as of 5th April 2023. Peak is defined as the month before monthly outflows turn negative
$600bn inflows into money market funds during this Fed hiking cycle

Source: FRB, ICI, Bloomberg, Apollo Chief Economist.
$350bn has been moved into money market funds since SVB went under
Primary method of bank account access:
More and more households use mobile and online banking

Source: FDIC, Apollo Chief Economist. Note: The data shows the sum of households using mobile and online banking, some respondents may use both.
IG and HY primary issuance slowly coming back

Source: Bloomberg, Apollo Chief Economist. Note: Data from NIM <GO>, IG excludes government and financials issuance.
Lagged effects of Fed hikes combined with tighter credit conditions will create a sharper slowdown in the economy.
The Fed funds rate effectively pushed 1.5%-points higher after SVB because of tighter financial conditions combined with tighter lending standards.

Source: Bloomberg, Apollo Chief Economist. Note: Two regression models with the Fed funds rate on the left-hand side were run to quantify the effect from tighter financial conditions and tighter lending standards, and the estimated coefficients show 0.5% higher Fed funds rate from tighter financial conditions and 1% higher Fed funds rate from tighter lending standards.
Impact on GDP if the ongoing banking crisis continues

<table>
<thead>
<tr>
<th>% difference from baseline GDP forecast</th>
<th>1Q23</th>
<th>2Q23</th>
<th>3Q23</th>
<th>4Q23</th>
<th>1Q24</th>
<th>2Q24</th>
<th>3Q24</th>
<th>4Q24</th>
<th>1Q25</th>
<th>2Q25</th>
<th>3Q25</th>
<th>4Q25</th>
<th>1Q26</th>
<th>2Q26</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit Risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monetary Policy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Bloomberg, Apollo Chief Economist. Note: The chart shows difference in baseline forecast adding a 150bps shock to Fed funds rate and 30 bps to credit risk and a two standard deviation shock to VIX, all starting in 1Q23. VIX is currently two standard deviations from its mean since 2010.
QE added $12tn to global liquidity since 2019

Source: Bloomberg, Apollo Chief Economist
Bank funding pressures: Deposits and market-based measures
Bank funding costs widening out: FRA-OIS spread remains elevated


Banking sector stress continues
FRA-OIS spread at levels seen in March 2020
Deposits in small and large banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
IG OAS spreads for banks remain elevated

Fed Discount Window borrowing higher than in 2008

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Fed liquidity program

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Fed liquidity borrowing higher than in 2008

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Fed liquidity programs

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Record-high volatility in fixed income markets

Source: Bloomberg, Apollo Chief Economist
SOFR spreads currently pricing aggressive rate cuts

Source: Bloomberg, Apollo Chief Economist.
What is happening with deposits in regional banks?
Small banks account for roughly a third of all deposits in the banking sector.
Small banks account for about 1/3 of total deposits in the banking sector and the share has been rising since the 2008 financial crisis.
Share of total bank deposits that are uninsured: 43%
Share of insured deposits, by bank size

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Share of insured deposits, by bank size

Source: FDIC, Haver Analytics, Apollo Chief Economist. As of Q4 2022
Share of insured deposits, by bank size

Source: FDIC, Haver Analytics, Apollo Chief Economist. As of Q4 2022
Deposit to asset ratio for large and small banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
The share of bank deposits paying zero interest rate is declining

Source: FDIC, Apollo Chief Economist.
Weekly data for bank lending by small and large banks
Weekly data for overall bank lending

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Weekly data for lending to consumers by small and large banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Weekly data for real estate lending by small and large banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Weekly data for commercial real estate lending by small and large banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Weekly data for residential real estate lending by small and large banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Weekly data for commercial and industrial lending by small and large banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Divergence between small bank and large bank lending growth over the past year

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Lending to consumers has been growing faster for smaller banks

![Graph showing YoY Consumer Loans: Bank Credit](source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist)
Real estate lending has been growing faster for smaller banks.
Commercial real estate lending has been growing faster for smaller banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Residential real estate lending has been growing faster for smaller banks.

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Lending to corporates among small and large banks

Commercial and Industrial Loans: Bank Credit

Small Domestic Commercial Banks
Large Domestic Commercial Banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Small banks lend to small businesses
Banks with less than $250bn in assets account for 50% of commercial and industrial lending
US banks by asset size:
The importance of regional banks for the US economy
Tighter credit conditions are coming: Banks “to the right” of SVB are likely to start reorganizing their balance sheets.
Top 50 US banks by assets

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist. As of Q4 2022.
Balance sheet growth of US banks, ranked by fastest growth in percent

Source: FDIC, Apollo Chief Economist.
Small bank assets as a share of total banking sector assets

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Share of lending by smaller banks

Small domestic commercial bank loans and leases, as a share of all commercial bank loans

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
During the pandemic, banks shifted from lending to holding securities.
Share of securities in the banking sector held by small banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Small banks hold about $1tn in Treasuries

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Securities held by FDIC-insured banks

Securities held by US banks:
- U.S. Treasury Securities
- Mortgage Backed Securities

Source: FDIC, Bloomberg, Apollo Chief Economist.
Deposits as a share of GDP now below trend

Source: Federal Reserve Board, BEA, Haver Analytics, Apollo Chief Economist
Regional banks’ asset concentration in CRE
Where are the problems in CRE?

Normalized as of 20 Feb 2020

- Apartment REITS - Since COVID
- Shopping Mall REITS - Since COVID
- OFFICE REITS - Since COVID
- Health Care REITS - Since COVID
- Industrial/Warehouse REITS

Source: Bloomberg, Apollo Chief Economist
High concentration of commercial real estate in small banks

Dec-2022 to Feb-2023 average loans by commercial banks

- Commercial Real Estate Loans
- Residential Real Estate Loans
- C & I Loans
- Consumer Loans
- All Other Loans & Leases

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist. Note: Data covers average from December 2022 to February 2023.
Small banks account for almost 70% of all commercial real estate loans outstanding.
Banks with total assets between $100mn and $10bn are more exposed to CRE loans.
Nearly $92 bn of nonbank office debt is set to mature this year
US Office vacancy rate rising

Source: Bloomberg, Apollo Chief Economist
Available US office space rising

Source: Savills US Markets, Bloomberg, Apollo Chief Economist.
Price per square foot for US offices falling

Source: RCA, Bloomberg, Apollo Chief Economist
CMBS spreads compared with HY spreads

Source: Bloomberg, Apollo Chief Economist. (Note: BBG Ticker: LF98OAS  Index, LC31OAS Index)
Measures of banking sector liquidity and capital ratios
Liquidity ratio, by bank assets: Banks from $1bn to $10bn have the least liquidity

Source: FDIC, Bloomberg, Apollo Chief Economist.
Tier-1 risk-based capital ratio for banks, by size

Small banks: Tier 1 Risk-Based Capital Ratio

Source: FDIC, Apollo Chief Economist. Note: As per FDIC, large banks are defined as institutions with total assets of $10 billion or more and small banks have total assets under $10 billion.
Tier 1 risk-based capital ratio for larger banks

Source: FDIC, Apollo Chief Economist. Note: As per FDIC, large banks are defined as institutions with total assets of $10 billion or more and small banks have total assets under $10 billion.
Reserves for loan losses

Source: FDIC, Haver Analytics, Apollo Chief Economist.
Loan delinquency rates for large and small banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Unrealized Gains (Losses) on investment securities for banks, as of 2022Q4

Source: FDIC, Apollo Chief Economist.
Sources of financing for small businesses
Sources of financing for small businesses

Large bank: 55%
Small bank: 35%
Financial company that is not a bank: 10%
Credit union: 5%
None, business does not use financial services: 3%
Other: 2%

Source: Small Business Credit Survey, Federal Reserve, Apollo Chief Economist
Small banks provide 60% of lending for small businesses in rural areas and 40% in urban areas.

Source: Small Business Credit Survey, Federal Reserve, Apollo Chief Economist
Sources of financing for small businesses, by firm size

Source: Small Business Credit Survey, Federal Reserve, Apollo Chief Economist
Sources of financing for small businesses, by risk of the firm

Source: Small Business Credit Survey, Federal Reserve, Apollo Chief Economist
Sources of financing for small businesses, by firm industry

% of firms surveyed

Financial services provider for small businesses
- Business support and consumer services
- Finance and insurance
- Healthcare and education
- Leisure and hospitality
- Manufacturing
- Non-manufacturing goods production & associated services
- Professional services and real estate
- Retail

Source: Small Business Credit Survey, Federal Reserve, Apollo Chief Economist
Factors influencing where small businesses apply for a loan. Relationship is important for small bank lending.
Purpose of seeking financing for small businesses

- Meet operating expenses: 65%
- Expand business, pursue new opportunity, or acquire business assets: 50%
- Replace capital assets or make repairs: 30%
- Refinance or pay down debt: 24%
- Other: 2%

Source: Small Business Credit Survey, Federal Reserve, Apollo Chief Economist. Note: 2022 survey, prior to 12 months of survey year.
40% of small firms have applied for financing in the past 12 months

Source: Small Business Credit Survey, Federal Reserve, Apollo Chief Economist. Note: 2022 survey, prior to 12 months of survey year
Banks are the most important source of financing for small businesses

Small business loans
Size of small loans to businesses

Originations of small loans to businesses, by size of loan, 2021

Source: CRA, Apollo Chief Economist. [https://www.ffiec.gov/craadweb/raechelp.htm](https://www.ffiec.gov/craadweb/raechelp.htm)
Share of loans to small businesses, by loan size

<table>
<thead>
<tr>
<th>Loan Size</th>
<th>% Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 250,000</td>
<td>54.1</td>
</tr>
<tr>
<td>More than 250,000</td>
<td>45.9</td>
</tr>
<tr>
<td>Loans to firms with revenues of $1 million or less</td>
<td>29.0</td>
</tr>
</tbody>
</table>

Source: CRA, Apollo Chief Economist. [https://www.ffiec.gov/craadweb/raahelp.htm](https://www.ffiec.gov/craadweb/raahelp.htm)
92% of all loans to small businesses in the US are less than $100,000

Source: CRA, Apollo Chief Economist. [https://www.ffiec.gov/craadweb/raochelp.htm](https://www.ffiec.gov/craadweb/raochelp.htm)
Total loans vs loans to small businesses by neighborhood characteristic

Source: CRA, Apollo Chief Economist. [https://www.ffiec.gov/craadweb/raaehelp.htm](https://www.ffiec.gov/craadweb/raaehelp.htm)
Share of loans to small businesses by neighborhood characteristic

Source: CRA, Apollo Chief Economist. [https://www.ffiec.gov/craadweb/raahelp.htm](https://www.ffiec.gov/craadweb/raahelp.htm)
Fed funds rate versus national average interest rate on checking accounts
Interest rate on checking accounts versus the Fed funds rate

Source: FRB, RateWatch, Haver Analytics, Apollo Chief Economist.
CD rates have slowly increased as the Fed has raised interest rates
After SVB: Change in 3-month CD rates at US banks, by size of bank

Source: S&P Global Market Intelligence, For a $10K 3-month CD, Apollo Chief Economist
Monitoring repo spreads for stresses in money markets

Source: Haver Analytics, Bloomberg, Apollo Chief Economist
The average efficiency ratio for community banks is around 61% compared with 55% for noncommunity banks.

Source: Haver Analytics, Bloomberg, Apollo Chief Economist. A bank's efficiency ratio is defined as the ratio of a bank's non-interest expense to revenues. Higher efficiency ratios indicate less efficient banks.
Share of bank lending lower in the US

Credit to Nonfinancial Private Sector: Banks

Source: BIS, Haver Analytics, Apollo Chief Economist.
Residential construction spending elevated

Source: Census Bureau, Haver Analytics, Apollo Chief Economist.
Maturity profile for US fixed income

Source: ICE, Bloomberg, Pitchbook LCD, Mortgage Bankers Association, Apollo Chief Economist
CRE maturity profile

Estimated total commercial mortgage maturities

Source: MBA, Apollo Chief Economist. Note: Other CRE includes multifamily, industrial/warehouse, hotel/motel, healthcare and others.
The share of households reporting it is harder to obtain credit than one year ago increased to the highest level since the survey was launched in 2013.

Source: FRBNY, Haver Analytics, Apollo Chief Economist (Harder = much harder + somewhat harder)
9% of small firms reported that financing was harder to get
Less than 1% of bank accounts have a balance higher than $250k

Source: FDIC, Haver Analytics, Apollo Chief Economist
Bankruptcy filings

Source: S&P Capital IQ, Bloomberg, Apollo Chief Economist. Note: Bankruptcy figures include public companies or private companies with public debt with a minimum of $2 million in assets or liabilities at the time of filing, in addition to private companies with at least $10 million in assets or liabilities.
Bankruptcy filings recently have moved lower

Source: S&P Capital IQ, Bloomberg, Apollo Chief Economist. Note: Bankruptcy figures include public companies or private companies with public debt with a minimum of $2 million in assets or liabilities at the time of filing, in addition to private companies with at least $10 million in assets or liabilities.
Half of US population employed in firm size of <500 employees

Share of total employment by employment size of the firm, 2020

- <20 employees: 54%
- 20-99 employees: 16%
- 100-499 employees: 16%
- 500+ employees: 14%

Source: Census, Apollo Chief Economist
Interest rate on auto loan

Source: Bankrate.com, Apollo Chief Economist
Interest rate on credit card

Current credit card interest rates

Source: Bankrate.com, Apollo Chief Economist
Loan growth expected to fall

Source: NFIB, FRB, Bloomberg, Apollo Chief Economist
Office property index is underperforming
Commercial Bank auto loan rates highest since 2008

Source: FRB, Bloomberg, Apollo Chief Economist
Banking crisis having negative impact on small and medium-sized companies
Euro Area credit conditions tightening

Source: ECB Bank Lending Survey, Bloomberg, Apollo Chief Economist
Euro Area loan demand falling

Source: ECB Bank Lending Survey, Bloomberg, Apollo Chief Economist
Community banks
90% of all banks in the US are community banks

Source: FDIC, Apollo Chief Economist.
CRE loans make up a significant share of community banks’ assets

Source: FDIC, Apollo Chief Economist.
Net interest margin higher for community banks

Source: FDIC, Apollo Chief Economist.
Torsten Slok joined Apollo in August 2020 as Chief Economist and he leads Apollo's macroeconomic and market analysis across the platform.

Prior to joining, Mr. Slok worked for 15 years as Chief Economist at Deutsche Bank where his team was top ranked in the annual Institutional Investor survey for a decade. Prior to joining Deutsche Bank Mr. Slok worked at the IMF in Washington, DC and at the OECD in Paris.

Mr. Slok has a Ph.D in Economics and has studied at the University of Copenhagen and Princeton University.