Outlook for US regional banks:
Credit growth slowing and credit conditions deteriorating

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Overview:
Credit growth slowing and credit conditions deteriorating
Monthly Fed data for credit standards continue to deteriorate. Near 2020 levels
Small and large bank lending growth slowing rapidly
Bank lending will shrink significantly over the coming quarters.
Tighter credit conditions dragging down the economy
Tighter credit conditions dragging down the economy

Source: NFIB, FRB, Bloomberg, Apollo Chief Economist
Demand for corporate loans is at 2008 levels

Source: FRB, Bloomberg, Apollo Chief Economist.
Demand for commercial real estate loans is at 2008 levels

Source: FRB, Bloomberg, Apollo Chief Economist.
Banks’ willingness to lend to customers approaching 2008 levels

Source: FRB, Bloomberg, Apollo Chief Economist.
Banks are tightening lending standards significantly, near 2008 levels.
Lending standards are tightening for consumers, approaching 2008 levels

Source: FRB, Bloomberg, Apollo Chief Economist.
SVB and FRC lifted funding costs for banks permanently

Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Unweighted average spreads of bonds from ICE 5-10 Year US Banking Index, C6PX Index for bonds issued before 1st Jan 2023. There are 8 banks in the Regional index and 41 banks in the Diversified index, and Regional banks include BankUnited, Citizens Financial, Huntington, and Zions, and Diversified banks include JP Morgan, Citibank, and Bank of America.
Credit card delinquency rates at 2008 levels
Auto loan transitions to serious delinquency approaching 2008 levels
Interest rate on auto loans

Source: FRB, Bloomberg, Apollo Chief Economist
Interest rate on credit cards

Credit Cards Assessed Interest

Source: FRB, Haver Analytics, Apollo Chief Economist
Higher income households starting to worry about whether they can make minimum debt payments.

Source: FRBNY, Haver Analytics, Apollo Chief Economist. Note: The data shows the average probability of not being able to make minimum debt payment over the next three months for people earning (income) greater than $100K.
Loan growth is dramatically weaker than in 2022
Impact of the regional banking crisis on GDP

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.
Small banks lend to small businesses
Banks with less than $250bn in assets account for 50% of commercial and industrial lending
Half of US employment is in firms with fewer than 500 employees

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

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

Source: Census, Apollo Chief Economist
Lagged effects of Fed hikes combined with tighter credit conditions will create a sharper slowdown in the economy.
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

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

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
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 remains elevated

$ bn

Source: FHLL, Haver, Apollo Chief Economist.
Bank funding pressures: 
Deposits and market-based measures
$789bn in deposits have left the banks since the Fed began to raise interest rates

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist. Note: March data as of 10th May 2023. Peak is defined as the month before monthly outflows turn negative
$840bn inflows into money market funds during this Fed hiking cycle

Source: FRB, ICI, Bloomberg, Apollo Chief Economist.
$500bn has been moved into money market funds since SVB went under
FRA-OIS spread

USD FRA-OIS spread 3 month

Deposits stabilizing in small and large banks
Fed Discount Window borrowing higher than in 2008

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.
Record-high volatility in fixed income markets

Successive days of +/-20 bps moves in 2-year rates

Source: Bloomberg, Apollo Chief Economist
SOFR spreads currently pricing aggressive Fed cuts in 2024

Source: Bloomberg, Apollo Chief Economist.
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 coming back

Source: Bloomberg, Apollo Chief Economist. Note: Data from NIM <GO>, IG excludes government and financials issuance.
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.
What is happening with deposits in regional banks?
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: 40%
Share of insured deposits, by bank size

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

<table>
<thead>
<tr>
<th>Bank Assets</th>
<th>Insured Deposits as a % of Total Deposits</th>
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<tbody>
<tr>
<td>$&lt;$100 mn</td>
<td>82</td>
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<tr>
<td>100M-$1B</td>
<td>73</td>
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<tr>
<td>1B-$10B</td>
<td>68</td>
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<tr>
<td>10B-$250B</td>
<td>64</td>
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<tr>
<td>$&gt;$250B</td>
<td>48</td>
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Source: FDIC, Haver Analytics, Apollo Chief Economist. As of Q1 2023
Share of insured deposits, by bank size

Source: FDIC, Haver Analytics, Apollo Chief Economist. As of Q1 2023
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.
Less than 1% of bank accounts have a balance higher than $250k
Weekly data for bank lending by small and large banks
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 is slowing for both small and large banks.

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Real estate lending is slowing for both small and large banks
Commercial real estate lending is slowing for both small and large banks

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.
Residential real estate lending is slowing for both small and large banks.
Lending to corporates is slowing for both small and large banks
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

Source: FDIC, Bloomberg, Apollo Chief Economist
Share of securities in the banking sector held by small banks

Small domestic commercial bank securities, as a share of all commercial bank securities

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

US Bank securities held by sector:

- 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
Small banks account for almost 70% of all commercial real estate loans outstanding.
High concentration of commercial real estate in small banks

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

- **Small Domestic Banks**
- **Large Domestic Banks**

Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist. Note: Data covers average from December 2022 to February 2023.
Banks with total assets between $100mn and $10bn are more exposed to CRE loans

Commercial Real Estate Loans, % of Total Assets

- Assets > $250 Billion
- Assets $1 Billion - $10 Billion
- Assets $10 Billion - $250 Billion
- Assets $100 Million - $1 Billion
- Assets < $100 Million

Source: FDIC, Apollo Chief Economist.
Where are the problems in CRE?

Normalized as of 20 Feb 2020

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

Source: Bloomberg, Apollo Chief Economist
Nearly $92 bn of nonbank office debt is set to mature this year

Source: MBA, Bloomberg, Apollo Chief Economist
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)
CRE delinquency rate

Source: FRB, Haver Analytics, Apollo Chief Economist
Number of banks with CRE exposure rising

Number of US banks exceeding 2006 CRE loan concentration guidance

- CRE loans at least 300% of risk-based capital and 36-month CRE growth of 50% or higher
- C&D loans at least 100% of risk-based capital

Source: S&P Global Market Intelligence, Apollo Chief Economist. Note: CRE= commercial real estate and C&D= construction and development, data as of May 2023 and based on regulatory filings.
Measures of banking sector liquidity and capital ratios
Liquidity ratio, by bank assets: Banks from $1bn to $10bn have the least liquidity
Tier-1 risk-based capital ratio for banks, by size

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 2023Q1

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

% of firms surveyed

60%

Financial services provider for small businesses

Large bank
Small bank
Financial company that is not a bank
Credit union
None, business does not use financial services
Other

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
Sources of financing for small businesses, by firm size

% of firms surveyed

Financial services provider for small businesses, by firm size

1-4 employees 5-9 employees 10-19 employees 20-49 employees 50-499 employees

Large bank Small bank Financial company that is not a bank Credit union None, business does not use financial services Other

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

% of firms surveyed

Financial services provider for small businesses, by risk

- High credit risk
- Medium credit risk
- Low credit risk

Large bank
- Small bank
- Financial company that is not a bank
- Credit union
- None, business does not use financial services
- Other

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
- Large bank
- Small bank
- Financial company that is not a bank
- Credit union
- None, business does not use financial services
- Other

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

Source: Small Business Credit Survey, Federal Reserve, Apollo Chief Economist
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
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/raahelp.htm](https://www.ffiec.gov/craadweb/raahelp.htm)
Share of loans to small businesses, by loan size

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

<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/raaahelp.htm](https://www.ffiec.gov/craadweb/raaahelp.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/raachelp.htm
Total loans vs loans to small businesses by neighborhood characteristic

Source: CRA, Apollo Chief Economist. [https://www.ffiec.gov/craadweb/raachelp.htm](https://www.ffiec.gov/craadweb/raachelp.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 and CDs
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

Certificate of Deposit (CD) rates

Source: RateWatch, Haver Analytics, Apollo Chief Economist. Note: For $10,000 Minimum CD
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 63% compared with 52% 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

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

Source: FRBNY, Haver Analytics, Apollo Chief Economist (Harder = much harder + somewhat harder)
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.
Interest rate on auto loans

Source: Bankrate.com, Apollo Chief Economist
Commercial Bank auto loan rates highest since 2008

Source: FRB, Bloomberg, Apollo Chief Economist
Interest rate on credit cards

Source: Bankrate.com, Apollo Chief Economist
Banking crisis having negative impact on small and medium-sized companies

Source: Bloomberg, Apollo Chief Economist
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

Commercial Real Estate Loans as a % of Total Assets

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

Source: FDIC, Apollo Chief Economist.
Regional Bank volatility declined
US banks account for the bulk of CRE lending

Source: S&P Capital IQ, Apollo Chief Economist
U.S. REITs hold approximately $14 billion of debt maturing this year.
Increased borrowing through the Bank Term Funding Program

Fed's funding program

- Bank Term Funding Program
- Discount Window

Source: Federal Reserve Board, Bloomberg, Apollo Chief Economist.
Money market funds during the current tightening cycle
Auto loan rejection rate over the past 12 months

SCE credit access survey
- Auto loan rejected over the past 12 months

Source: FRBNY, Haver Analytics, 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 on the sell-side where his team was top ranked in the annual Institutional Investor survey for a decade. Mr. Slok has also worked at the IMF in Washington, DC and at the OECD in Paris.

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