US Economics Analyst

Credit Tightening: Through the Worst (Abecasis/Peng/Mericle)

- The regional bank crisis this spring led to a further tightening in bank lending standards that threatened to amplify and prolong the tightening in market-based financial conditions kicked off by the Fed's hiking cycle. At the time, we worried about risks to credit availability if banks faced unusually severe deposit flight in a cycle where the size and speed of rate hikes made the public more aware of the higher yields offered elsewhere and technology made it easier to move funds.
- We are increasingly confident that the risk of a serious credit crunch has been avoided and the economy is through the worst of the credit tightening, for two reasons.
- First, the stress on the banking system has not been as severe as feared. Bank-level data show that deposit outflows have remained modest across banks, that deposit betas are only somewhat higher than the historical average at this point in the hiking cycle, and that banks have been able to raise interest rates on loans enough to stabilize net interest margins at normal levels.
- As a result, banks have not pulled back on lending to an unusual extent. The slowdown in bank lending growth from 8% last year to 2% this year has been only modestly larger than would normally be associated with the increase in interest rates since the Fed started hiking, despite the additional pressure from the regional bank stress, concern about regulatory tightening in response, and recession fears.
- Second, nonbank lenders—which have come to play a larger role in US lending in recent decades—have reduced lending to businesses by only half as much as banks this year, softening the impact on total credit availability. This is partly because nonbank lenders are less sensitive to the recent pressures on bank lending—they face fewer regulatory constraints and their lending is less sensitive to interest rates because their business model is different, especially in the case of financing arms of companies that lend to clients who purchase their products.
- In fact, we find that non-bank lenders tend to step up and provide more credit when banks pull back and have done so this year. Using data from Accutrend that summarize local records of business loans by bank and nonbank lenders, we find that nonbank lending increased the most in states where regional banks had provided a larger share of loans. The role of nonbank lenders helps to explain

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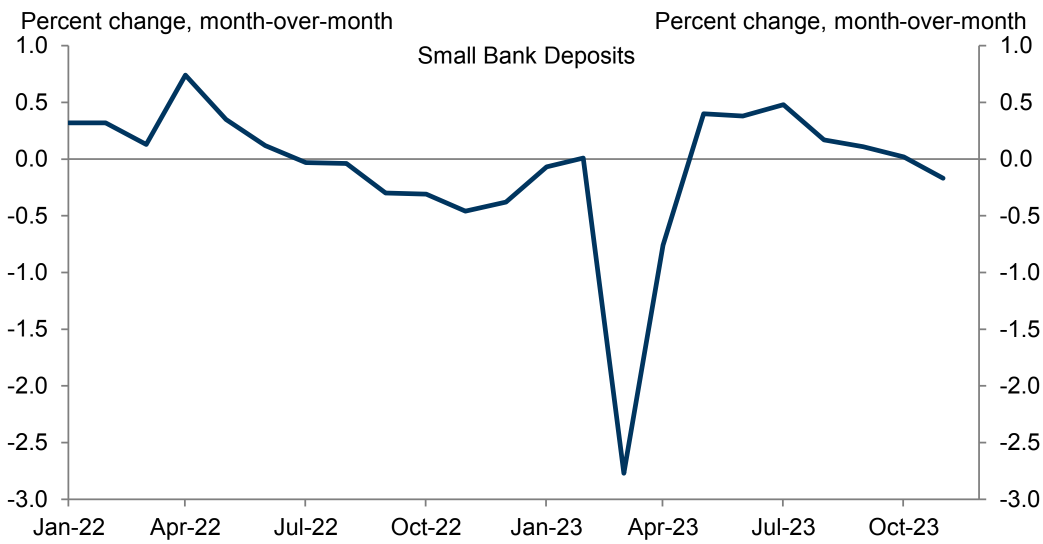
why companies, especially small businesses, have not reported a lack of access to credit in surveys even though banks reported a large tightening in lending standards.

- We expect credit availability to ease next year, supporting our above-consensus growth forecast. Falling interest rates should further reduce concerns about the unrealized losses on bank balance sheets that sparked the initial deposit flight, and we expect non-bank lenders to partly fill financing gaps that could emerge from tighter bank regulation. Using a version of our financial conditions index growth impulse model that also accounts for credit conditions, we estimate a turnaround from a 0.8pp drag on GDP growth in 2023 to a 0.4pp boost in 2024.

Credit Tightening: Through the Worst

The regional bank crisis this spring led to a further tightening in bank lending standards that threatened to amplify and prolong the tightening in market-based financial conditions kicked off by the Fed's hiking cycle. At the time, we worried about risks to credit availability if banks faced unusually severe deposit flight in a cycle where the size and speed of rate hikes made the public more aware of the higher yields offered elsewhere and technology made it easier to move funds.

Exhibit 1: Rapid Deposit Outflows Earlier This Year Triggered Concerns Over the Banking System's Ability to Provide Credit to the Economy



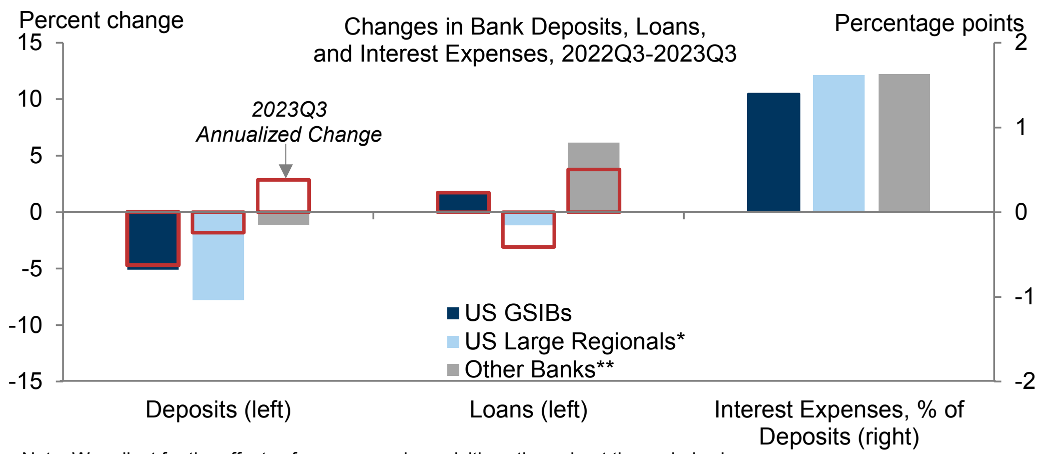
Source: Federal Reserve, Goldman Sachs Global Investment Research

We are increasingly confident that the risk of a serious credit crunch has been avoided and the economy is through the worst of the credit tightening, for two reasons.

Banking turmoil: better than feared

First, the stress on the banking system has not been as severe as feared. Since the regulatory agencies intervened to shore up confidence in the banking system, deposit outflows have remained modest across banks. And while deposits at regional banks remain depressed relative to last year, outflows from these banks have slowed significantly in the last two quarters. As a result, regional bank deposits are now only modestly lower than deposits at global systemically important banks (-7½% vs. -5%). And while smaller banks have had to raise deposit rates, their interest expenses have risen only modestly more than larger banks' over the last year (1.6pp vs. 1.3pp).

Exhibit 2: Regional Bank Deposit Outflows Have Slowed Since the Bank Turmoil Subsided, Although Lending by These Banks Remains Depressed

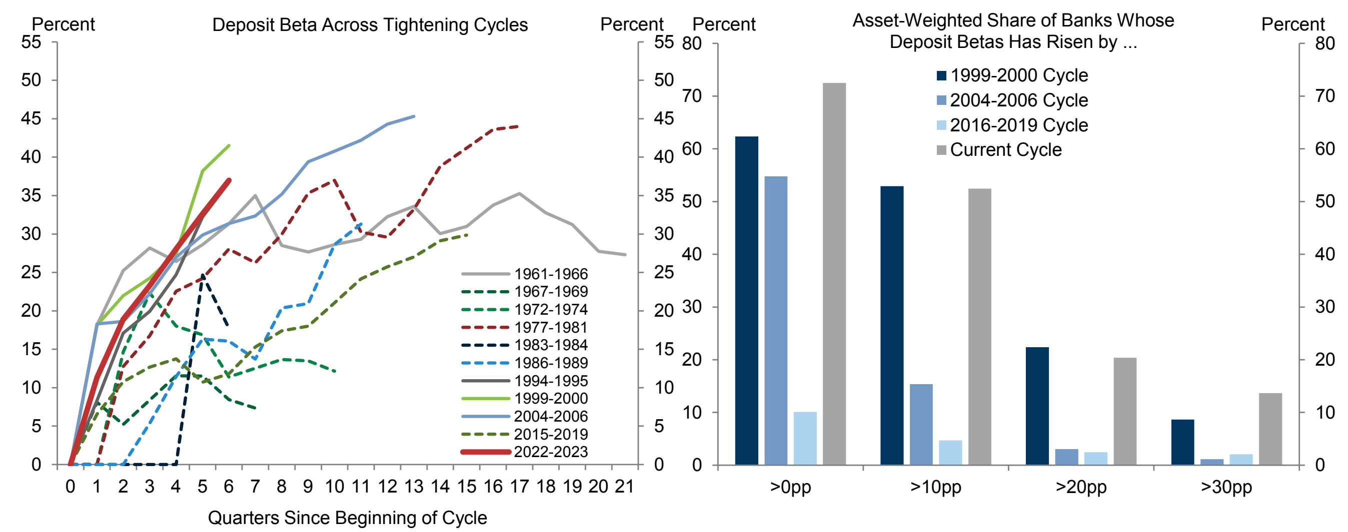


Note: We adjust for the effects of mergers and acquisitions throughout the periods shown.
* PNC, Zions, PacWest, Truist, M&T, Fifth Third, Huntington National, Regions, Citizens, Keybank, Comerica, BMO Harris, First Citizens, US Bank, Ally Bank, Capital One, and Schwab.

Source: Federal Financial Institutions Examination Council, Goldman Sachs Global Investment Research

One key concern in the aftermath of the banking turmoil was that the unusual speed of hiking, the role of technological changes in facilitating runs, and the shift in the composition of bank deposits toward run-prone uninsured depositors could put significant pressure on deposit betas and bank profitability. Deposit betas have risen faster than the typical hiking cycle and currently stand at a relatively elevated 37%, but this is still within the range of historical outcomes in recent cycles and below the levels reached in the 2000 and 2006 hiking cycles (left-hand side of Exhibit 3). And while more banks have seen large increases in their deposit betas than in the post-GFC cycle, the distribution of deposit betas across banks is broadly similar to the early 2000s cycle (right-hand side of Exhibit 3).

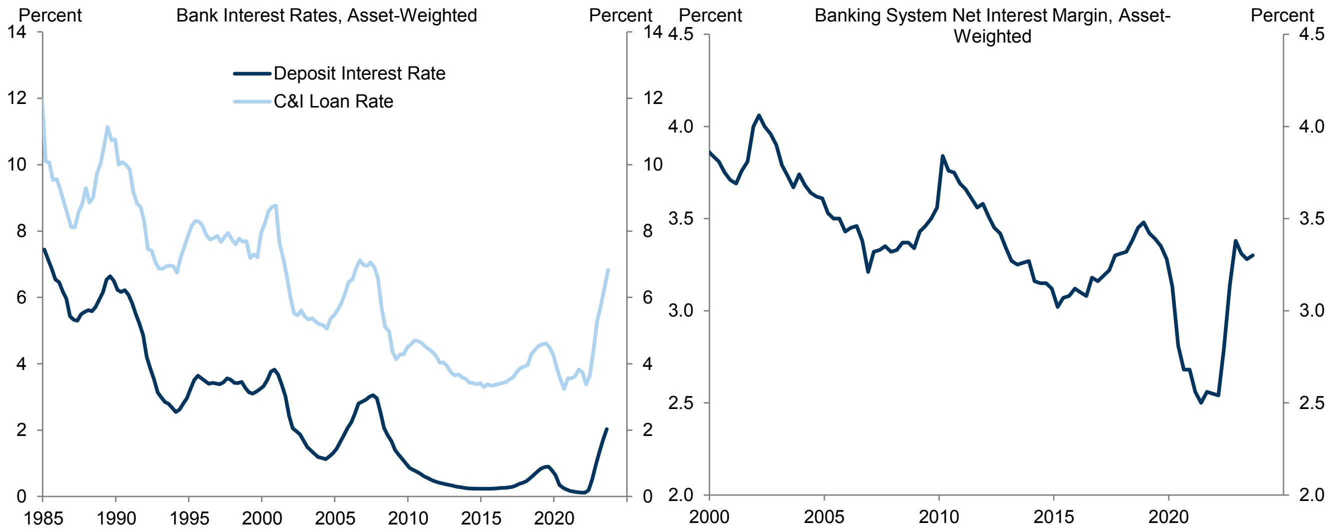
Exhibit 3: Deposit Betas Have Risen but Remain Within the Range of Historical Outcomes for Most Banks



Source: Federal Deposit Insurance Corporation, Federal Financial Institutions Examination Council, Goldman Sachs Global Investment Research

Another concern was that the inverted yield curve could put pressure on banks' interest margins, since banks borrow short and lend long, and lead them to cut back sharply on lending. We were skeptical of this idea, as the academic literature and our own analysis suggested that banks were usually able to hedge interest rate risk effectively. And indeed, banks have been able to raise the interest rates they charge on loans alongside the interest they pay on deposits. As a result, bank net interest margins have stabilized at 3.3% in 2023Q3, close to their 3.4% average in 2019.

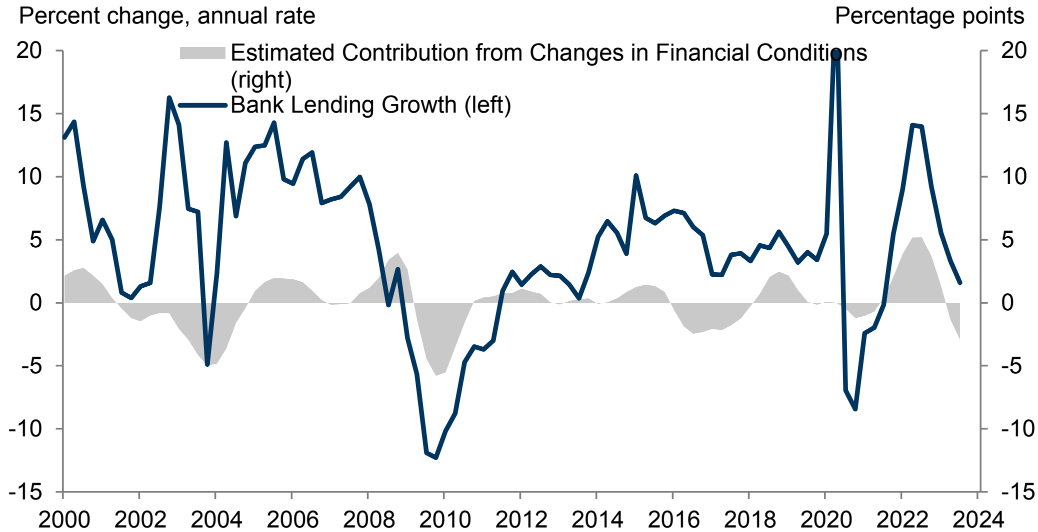
Exhibit 4: Bank Loan Rates Have Risen Alongside Deposit Rates, Keeping Net Interest Margins Around Their Pre-Pandemic Levels



Source: Federal Deposit Insurance Corporation, Goldman Sachs Global Investment Research

With better-than-feared deposit betas and stable net interest margins, banks have not had to pull back on lending to an unusual extent. Exhibit 5 shows the contribution of changes in financial conditions to bank lending growth over time, estimated from a vector autoregression model similar to our financial conditions impulse to GDP growth. The model implies that tighter financial conditions can explain around three quarters of the deceleration in bank lending since its 2022 peak. Our earlier analysis suggests that the remaining deceleration likely reflects a combination of recession fears, pressures on some regional banks' balance sheets, and the widely anticipated increase in regulatory requirements announced in July.

Exhibit 5: A Large Part of the Deceleration in Lending This Year Has Happened in Response to Tighter Financial Conditions



Source: Federal Reserve, Goldman Sachs Global Investment Research

Nonbank lenders dampen the impact of tighter bank credit

The second reason why a serious credit crunch has been avoided is that non-bank lenders have reduced lending to businesses by less than banks.

Nonbank lenders have played an increasingly important role in US lending in recent decades. A recent paper by economists Manasa Gopal and Philipp Schnabl documents that nonbank lending to small businesses increased by 69% between 2010 and 2016, and Greg Buchak and co-authors find that nonbank lending in the residential mortgage market doubled from 2007 to 2015. [1] Just before the pandemic, the number of nonbank loans was around 62% of total loans to small businesses.

Unfortunately, traditional data sources offer limited visibility into nonbank lenders. To gauge how nonbank lending has evolved recently, we leverage granular data on business loans from Uniform Commercial Code (UCC) filings, provided by Accutrend.

Because lenders have to fill out a UCC form in order to establish their right to their borrowers' assets in case of default, the Accutrend dataset covers almost all secured lending to businesses in the US. [2] Indeed, Gopal and Schnabl document that UCC filings cover roughly 95% of non-real-estate lending to small businesses. And because larger businesses typically have direct access to capital markets, this dataset captures lending to businesses that are the most reliant on banks to begin with, making it a useful gauge of the supply of credit to businesses by both banks and nonbanks. In addition, the Accutrend data provide rich loan-level information on borrowers, lenders, and loan

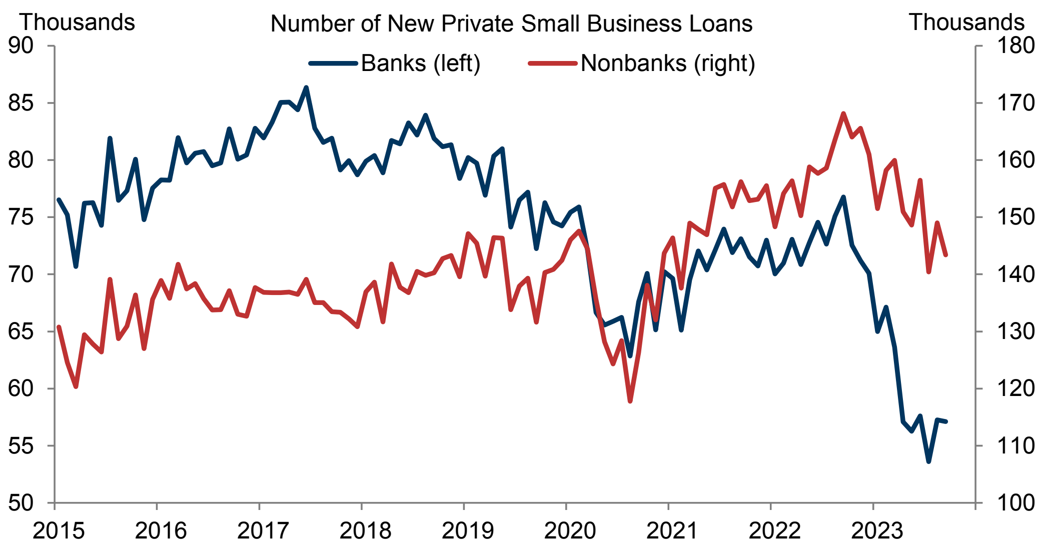
[1] Gopal, Manasa and Philipp Schnabl, 2022. "The Rise of Finance Companies and FinTech Lenders in Small Business Lending," The Review of Financial Studies 35, 4859-4901.
Buchak, Greg, Gregor Matvos, Tomasz Piskorski and Amit Seru, 2018. "Bank Balance Sheet Capacity and the Limits of Shadow Banks."

[2] See Accutrend's website here.

location, allowing us to investigate the composition of nonbank lending over time and across industries and states.

Using this data, we find that that nonbanks have pulled back on lending by only about half as much as banks since 2022 (Exhibit 6). As a result, we estimate that nonbank lending now makes up 67% of the total small business lending, a significant increase from the 62% just before the pandemic.

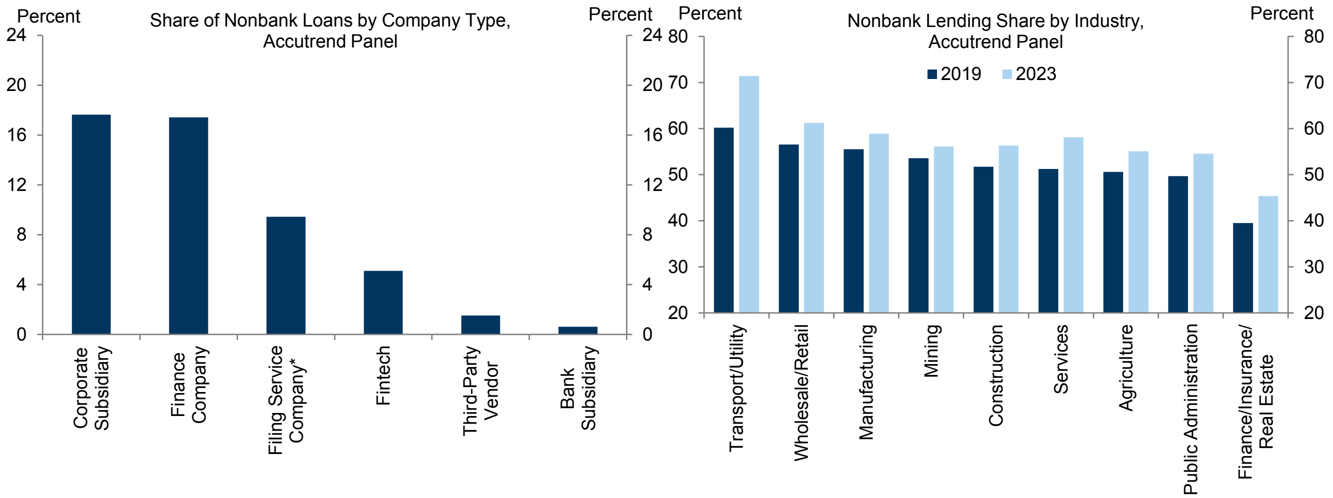
Exhibit 6: New Nonbank Loans Have Declined by Half as Much as New Bank Loans Since the Hiking Cycle Began



Source: Accutrend, Goldman Sachs Global Investment Research

Who are these lenders, and who do they lend to? The Accutrend data suggest that nonbanks are typically the financial arms of large corporates (for example, the financial arm of a truck manufacturer making loans to businesses so they can purchase its trucks), independent finance companies, and fintech lenders (left-hand side of Exhibit 7). At the industry level, nonbanks account for the highest share of lending in capital-intensive sectors like transportation and manufacturing (right-hand side of Exhibit 7).

Exhibit 7: The Financial Arms of Large Corporates, Independent Finance Companies, and Fintech Are the Most Common Types of Nonbank Lenders

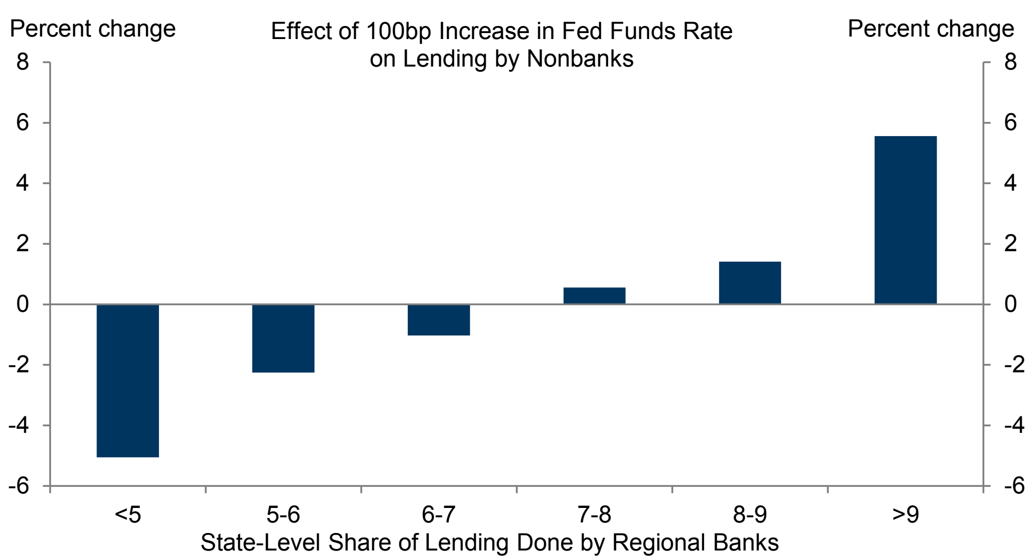


* The academic literature finds that Fintech firms often use filing service companies when submitting UCC forms.

Source: Accutrend, Goldman Sachs Global Investment Research

We see three reasons why nonbank lending has been less impacted by higher interest rates than bank lending. First, the pullback in lending by regional banks (see Exhibit 2 above) probably opened up attractive lending opportunities for nonbanks. Using a panel regression to estimate the relative impact of changes in the fed funds rate on nonbank lending across different states, we find that nonbanks increased lending the most in states where a larger share of lending was done by regional banks (Exhibit 8).

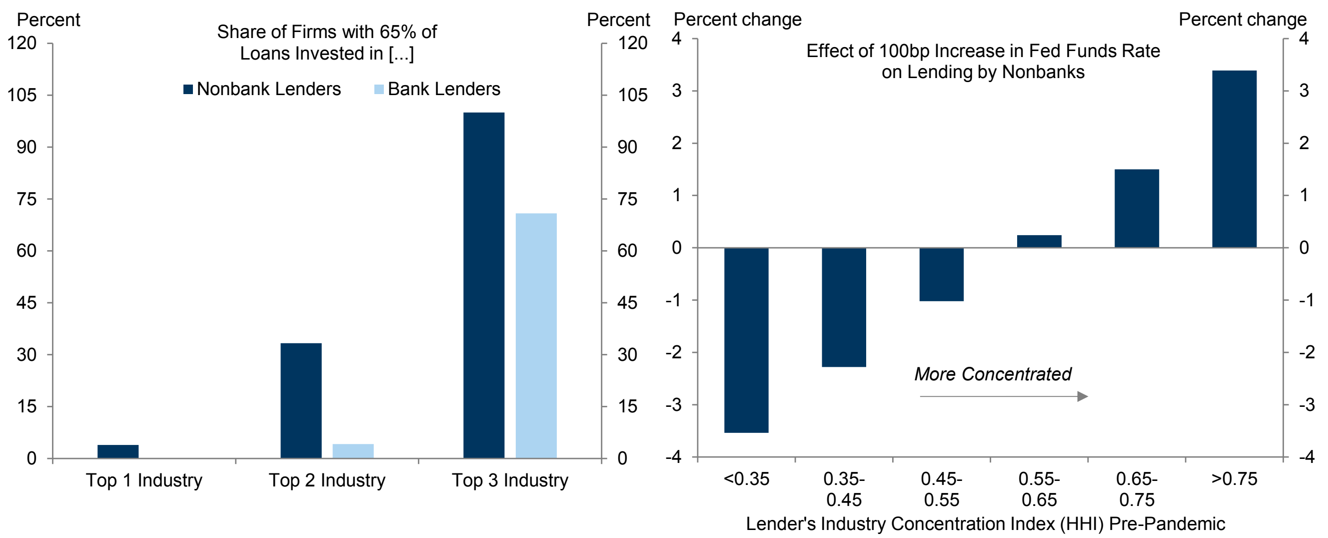
Exhibit 8: Nonbanks Have Been Able to Fill Some of the Financing Gap Left by the Regional Banks



Source: Accutrend, Goldman Sachs Global Investment Research

Second, nonbank lenders profit from loans for reasons other than the interest they charge, likely making their lending decisions less sensitive to changes in interest rates. For example, around 20% of nonbank lending to businesses is done by the financial arm of large corporations, who often lend to clients in exchange for purchases of their products. We also find that nonbank lenders often make concentrated loans to specific industries (left-hand side of Exhibit 9), which suggests that they may have specialized knowledge about borrowers that could make loan returns less sensitive to changes in interest rates. Indeed, lenders who made more concentrated loans before the pandemic have been relatively less responsive to higher interest rates (right-hand side of Exhibit 9).

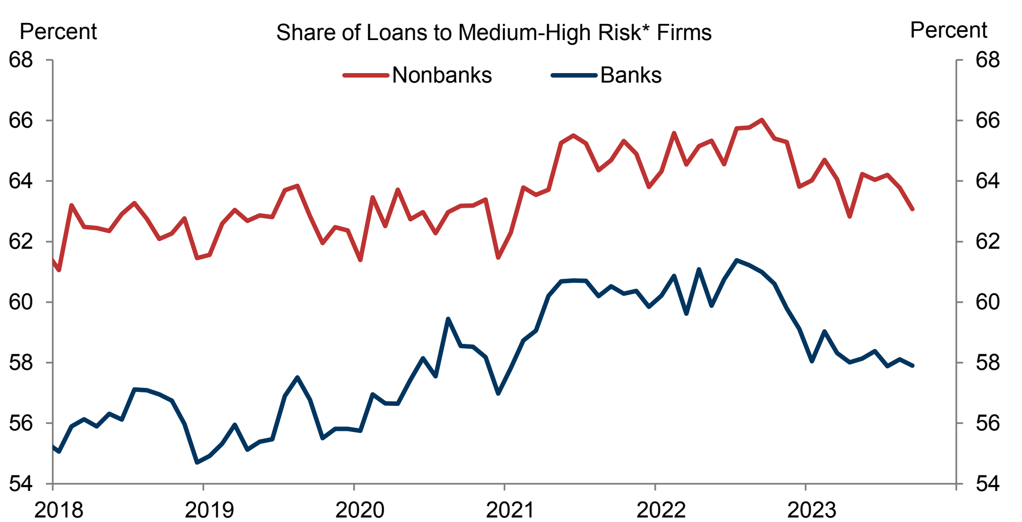
Exhibit 9: Nonbank Lenders Are More Specialized in Specific Industries Than Banks, Suggesting They May Have an Information Advantage That Makes Their Lending Less Sensitive to Changes in Interest Rates



Source: Accutrend, Goldman Sachs Global Investment Research

Third, these lenders face fewer regulatory constraints than banks, which may allow them to take on more risk as interest rates rise and bank regulations tighten. As Exhibit 10 shows, nonbank lenders lend to slightly riskier borrowers than banks.

Exhibit 10: Nonbank Lenders Are More Likely to Lend to Somewhat Riskier Businesses Than Banks



* The risk score summarizes factors like businesses' credit history and is analogous to an individual's FICO score. There are 5 risk classes: low, low-medium, medium, high-medium, and high. The risk score is provided by a third-party vendor through Accutrend.

Source: Accutrend, Goldman Sachs Global Investment Research

The widely-anticipated increase in bank regulatory requirements announced earlier this year probably made banks reluctant to lend in order to preserve capital (see our banks analysts' reports here, here, and here), allowing nonbank lenders to increase their share of total lending. Indeed, the economics literature has found that increases in bank regulatory requirements have been associated with increases in nonbank lending in the past (Exhibit 11).

Exhibit 11: Academic Studies Find That an Increase in Bank Regulatory Requirements Increases Nonbank Lending Relative to Bank Lending

Academic Estimates of the Effect of Bank Regulation Change on Bank and NonBank Lending

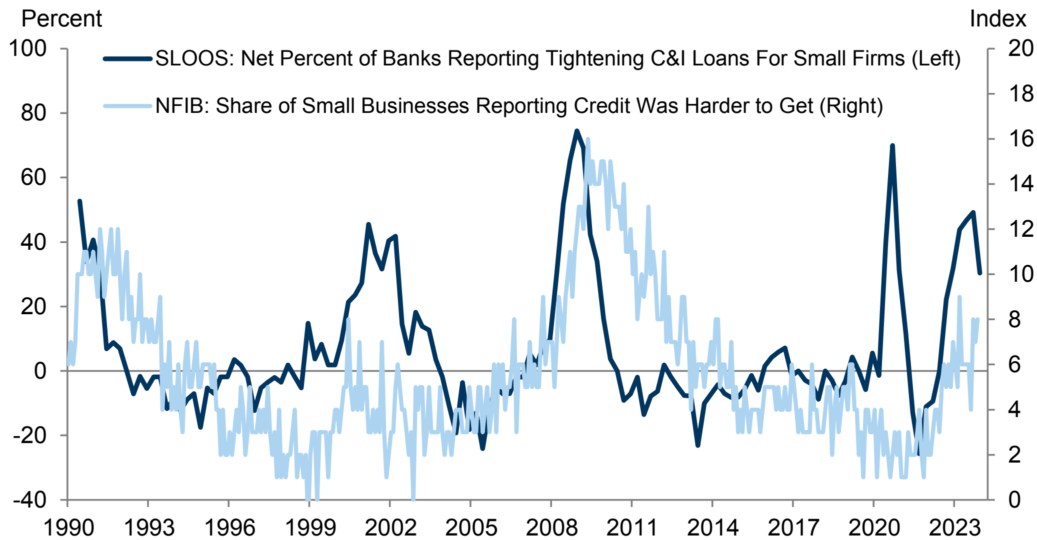
Study	Regulation	Loan Market	Effect on Bank Lending	Effect on Nonbank Lending
Gopal, and Schnabl (2021)	Dodd-Frank	Small Business Loans	1% Increase in Tier 1 risk-based capital leads to 6.0% decline in bank lending.*	1% Increase in Tier 1 risk-based capital leads to a 6.4% increase in nonbank lending.
Buchak, Matvos, Piskorski, and Seru (2018)	Dodd-Frank	Residential Mortgage	1% increase in Tier 1 risk based capital ratio leads to 0.8% decline in bank lenidng.	1% increase in Tier 1 risk based capital ratio leads to a 0.3% increase in nonbank lending.
Chernenko, Erel, Prilmeier (2020)	OCC Supervision	Loans to Public Middle-Size Firms	Supervised banks are 10% less likely to lend to negative-EBITDA firms.	1% increase in share of OCC supervised banks leads to a 0.5% increase in nonbank lending to negative-EBITDA firms.
Kim, Plosser, and Santos (2017)	Interagency Guidance	Leveraged Corporate Loans	LISCC** banks reduced lending by 1.9%.	Nonbank lenders increased lending by 1.3%.

*The authors do not report an effect on bank lending directly but estimate a null effect on total lending. We impute the effect on bank lending using the effect on total lending and the share of nonbank lending in 2006 reported by the authors.
**LISCC refers to banks overseen by the Large Institutional Supervision Coordinating Committee.
Estimates from Gopal and Schnabl (2021) and Kim, Plosser, and Santos (2017) are based on the number of loans, and estimates from the other two studies are based on the dollar amount of loans.

Source: Goldman Sachs Global Investment Research

The resilience of nonbank lending helps to explain why companies, especially small businesses, have not reported a lack of access to credit in surveys even though banks reported a large tightening in lending standards (Exhibit 12).

Exhibit 12: The Share of Small Businesses Reporting That Credit Is Harder to Get Is Low Compared to the Large Tightening in Bank Lending Standards, Suggesting That Nonbank Lending Has Filled Some of Gap



Source: National Federation of Independent Businesses, Federal Reserve, Goldman Sachs Global Investment Research

The growth drag from financial and credit conditions is set to fade in 2024

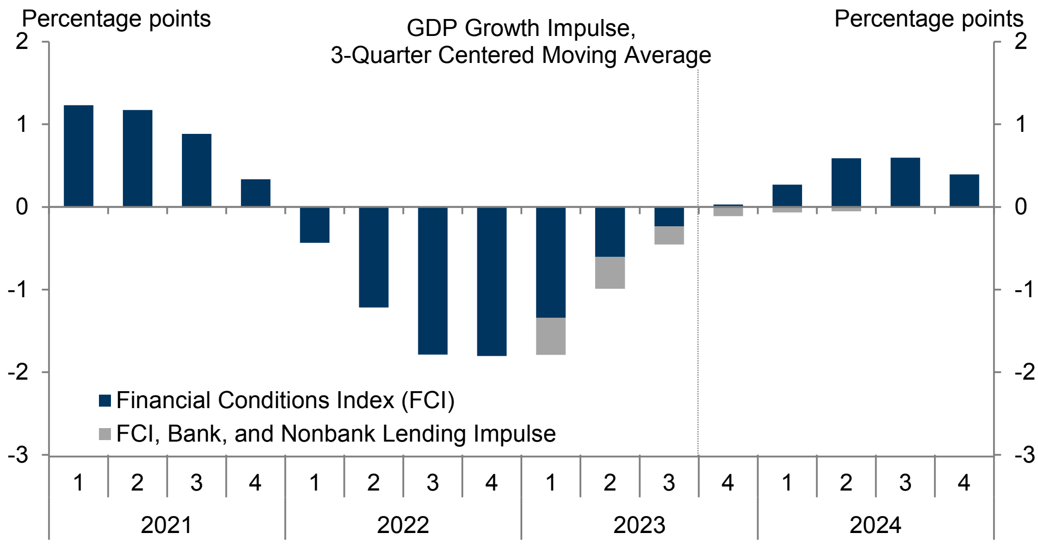
We expect credit availability to ease next year, supporting our above-consensus growth forecast. Falling interest rates should further reduce the concerns about unrealized losses on bank balance sheets that sparked the initial deposit flight, and non-bank lenders should be able to partly fill financing gaps that could emerge from tighter bank regulation.

To gauge the growth implications of recent developments in both bank and nonbank lending, we modify our standard financial conditions index growth impulse model to also account for both bank lending standards and credit availability from nonbank lenders, weighting the two based on their shares of loans in the Accutrend data over time.[3]

Taken together, our analysis suggests that changes in financial and credit conditions are likely to provide a roughly 0.4pp boost to GDP growth next year, compared to a 0.8pp drag in 2023 and a 1.3pp drag in 2022 when the Fed started hiking.

[3] We backcast nonbank lending before 2015, when the Accutrend data starts, using data on economywide loan growth from the Fed's flow of funds accounts. We include data on the share of nonbank loans over time when estimating the vector autoregression model underlying our SLOOS-augmented FCI impulse.

Exhibit 13: Our Combined Credit Impulse Suggests That Financial and Credit Conditions Are Likely to Turn From a 0.8pp Drag in 2023 to a 0.4pp Boost in 2024



Source: Goldman Sachs Global Investment Research

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The US Economic and Financial Outlook

THE US ECONOMIC AND FINANCIAL OUTLOOK
(% change on previous period, annualized, except where noted)

	2022	2023	2024	2025	2026	2027	2023				2024			
		(f)	(f)	(f)	(f)	(f)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
OUTPUT AND SPENDING														
Real GDP	**1.9**	*2.5*	*2.3*	*1.9*	*1.9*	*2.0*	**2.2**	**2.1**	**5.2**	*1.5*	*2.2*	*1.9*	*1.9*	*1.9*
Real GDP (annual=Q4/Q4, quarterly=yoy)	**0.7**	*2.7*	*2.0*	*1.9*	*1.9*	*2.0*	**1.7**	**2.4**	**3.0**	*2.7*	*2.7*	*2.7*	*1.9*	*2.0*
Consumer Expenditures	**2.5**	*2.3*	*2.3*	*1.9*	*1.9*	*2.0*	**3.8**	**0.8**	**3.6**	*2.9*	*2.2*	*1.9*	*1.9*	*1.9*
Residential Fixed Investment	**-9.0**	*-11.3*	*-0.1*	*2.8*	*3.2*	*2.4*	**-5.3**	**-2.2**	**6.2**	*-8.4*	*0.0*	*3.0*	*2.0*	*2.0*
Business Fixed Investment	**5.2**	*4.4*	*2.5*	*2.7*	*3.7*	*3.6*	**5.7**	**7.4**	**1.3**	*3.4*	*2.8*	*2.1*	*0.8*	*1.1*
Structures	**-2.1**	*12.2*	*2.6*	*0.1*	*3.2*	*3.0*	**30.3**	**16.1**	**6.9**	*4.5*	*4.0*	*0.8*	*-6.0*	*-6.0*
Equipment	**5.2**	*0.1*	*2.0*	*3.0*	*3.5*	*3.2*	**-4.1**	**7.7**	**-3.5**	*3.6*	*2.0*	*2.0*	*2.5*	*2.8*
Intellectual Property Products	**9.1**	*4.5*	*2.9*	*3.9*	*4.3*	*4.5*	**3.8**	**2.7**	**2.8**	*2.5*	*2.8*	*3.0*	*3.5*	*4.0*
Federal Government	**-2.8**	*4.2*	*1.4*	*0.0*	*0.0*	*0.0*	**5.2**	**1.1**	**7.0**	*2.0*	*0.6*	*0.0*	*0.0*	*0.0*
State & Local Government	**0.2**	*3.7*	*1.4*	*0.9*	*1.0*	*1.0*	**4.6**	**4.7**	**4.6**	*1.8*	*0.0*	*0.1*	*0.9*	*0.9*
Net Exports ($bn, '17)	**-1,051**	*-934*	*-918*	*-914*	*-919*	*-906*	**-935**	**-928**	**-935**	*-938*	*-926*	*-921*	*-913*	*-910*
Inventory Investment ($bn, '17)	**128**	*40*	*53*	*60*	*60*	*60*	**27**	**15**	**84**	*35*	*50*	*50*	*50*	*60*
Industrial Production, Mfg.	**2.7**	*-0.3*	*2.2*	*3.2*	*3.4*	*3.4*	**-0.3**	**0.4**	**-0.3**	*2.5*	*2.8*	*2.7*	*2.8*	*3.1*
HOUSING MARKET														
Housing Starts (units, thous)	**1,551**	*1,390*	*1,335*	*1,430*	*1,515*	*1,535*	**1,385**	**1,450**	**1,367**	*1,358*	*1,335*	*1,325*	*1,325*	*1,355*
New Home Sales (units, thous)	**637**	*680*	*723*	*771*	*781*	*858*	**638**	**691**	**703**	*690*	*708*	*708*	*728*	*747*
Existing Home Sales (units, thous)	**5,081**	*4,092*	*3,834*	*4,240*	*4,369*	*5,001*	**4,327**	**4,250**	**4,020**	*3,770*	*3,737*	*3,793*	*3,860*	*3,949*
Case-Shiller Home Prices (%yoy)*	**7.5**	*3.5*	*0.6*	*3.8*	*4.9*	*4.9*	**2.3**	**-0.2**	*2.5*	*3.5*	*3.1*	*1.6*	*0.2*	*0.6*
INFLATION (% ch, yr/yr)														
Consumer Price Index (CPI)**	**6.4**	*3.2*	*2.9*	*2.3*	*2.2*	*2.2*	**5.8**	**4.1**	**3.6**	*3.2*	*2.9*	*2.8*	*2.8*	*2.9*
Core CPI **	**5.7**	*3.9*	*3.2*	*2.4*	*2.3*	*2.3*	**5.6**	**5.2**	**4.4**	*4.0*	*3.8*	*3.5*	*3.6*	*3.3*
Core PCE** †	**4.9**	*2.9*	*2.2*	*2.1*	*2.0*	*2.0*	**4.8**	**4.6**	*3.8*	*3.1*	*2.5*	*2.1*	*2.2*	*2.2*
LABOR MARKET														
Unemployment Rate (%)^	**3.5**	*3.7*	*3.6*	*3.6*	*3.6*	*3.6*	**3.5**	**3.6**	**3.8**	*3.7*	*3.7*	*3.6*	*3.6*	*3.6*
U6 Underemployment Rate (%)^	**6.5**	*6.9*	*6.8*	*6.8*	*6.7*	*6.7*	**6.7**	**6.9**	**7.0**	*6.9*	*6.8*	*6.8*	*6.8*	*6.8*
Payrolls (thous, monthly rate)	**399**	*224*	*121*	*75*	*75*	*75*	**312**	**201**	**221**	*163*	*160*	*125*	*100*	*100*
Employment-Population Ratio (%)^	**60**	*60.5*	*60.4*	*60.2*	*60.1*	*59.9*	**60.4**	**60.3**	**60.4**	*60.5*	*60.5*	*60.5*	*60.5*	*60.4*
Labor Force Participation Rate (%)^	**62**	*62.8*	*62.7*	*62.5*	*62.3*	*62.1*	**62.6**	**62.6**	**62.8**	*62.8*	*62.8*	*62.8*	*62.7*	*62.7*
Average Hourly Earnings (%yoy)	**5.3**	*4.3*	*4.0*	*3.6*	*3.6*	*3.6*	**4.5**	**4.3**	**4.2**	*4.1*	*4.1*	*4.0*	*3.9*	*3.8*
GOVERNMENT FINANCE														
Federal Budget (FY, $bn)	**-1,375**	**-1,700**	*-1,700*	*-1,900*	*-1,900*	*-2,050*	--	--	--	--	--	--	--	--
FINANCIAL INDICATORS														
FF Target Range (Bottom-Top, %)^	**4.25-4.5**	*5.25-5.5*	*4-4.25*	*3.25-3.5*	*3.25-3.5*	*3.25-3.5*	**4.75-5**	**5-5.25**	**5.25-5.5**	*5.25-5.5*	*5-5.25*	*4.5-4.75*	*4.25-4.5*	*4-4.25*
10-Year Treasury Note^	**3.88**	*3.90*	*4.00*	*4.00*	*4.00*	*4.00*	**3.48**	**3.81**	**4.59**	*3.90*	*3.85*	*3.75*	*3.85*	*4.00*
Euro (€/$)^	**1.07**	*1.10*	*1.12*	*1.15*	*1.15*	*1.15*	**1.09**	**1.09**	**1.06**	*1.10*	*1.08*	*1.10*	*1.11*	*1.12*
Yen ($/¥)^	**132**	*142*	*140*	*130*	*125*	*120*	**133**	**144**	**149**	*142*	*145*	*142*	*141*	*140*

* Weighted average of metro-level HPIs for 381 metro cities where the weights are dollar values of housing stock reported in the American Community Survey. Annual numbers are Q4/Q4.
** Annual inflation numbers are December year-on-year values. Quarterly values are Q4/Q4.
† PCE = Personal consumption expenditures. ^ Denotes end of period.
Note: Published figures in bold.
Source: Goldman Sachs Global Investment Research.

Source: Goldman Sachs Global Investment Research

Disclosure Appendix

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We, Jan Hatzius, Alec Phillips, David Mericle, Spencer Hill, CFA, Ronnie Walker, Manuel Abecasis, Tim Krupa and Elsie Peng, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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