J.P. Morgan's 10th Annual Large Bank Forum

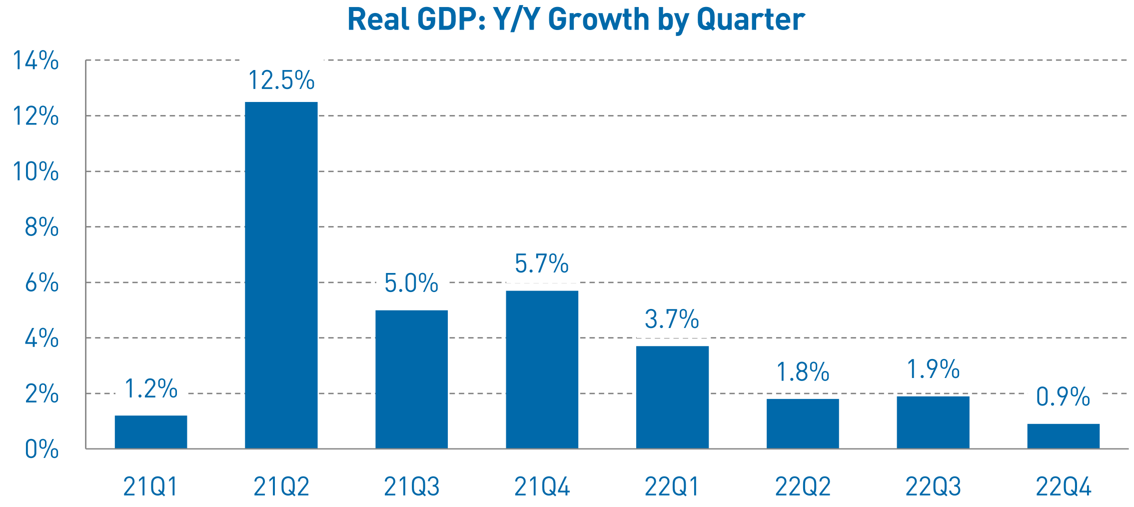
Gagan Singh, Chief Investment Officer

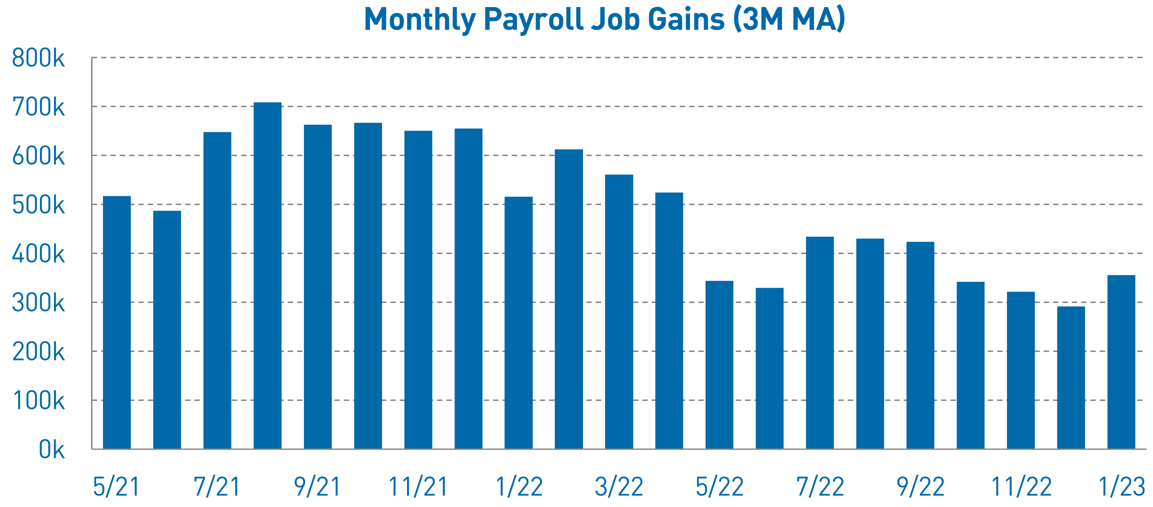
March 9, 2023

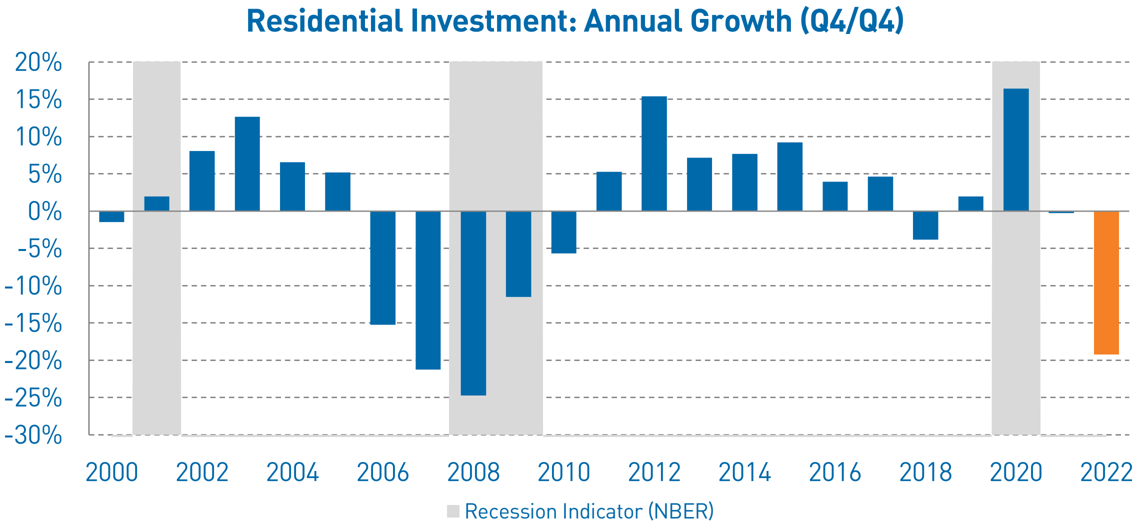
Agenda

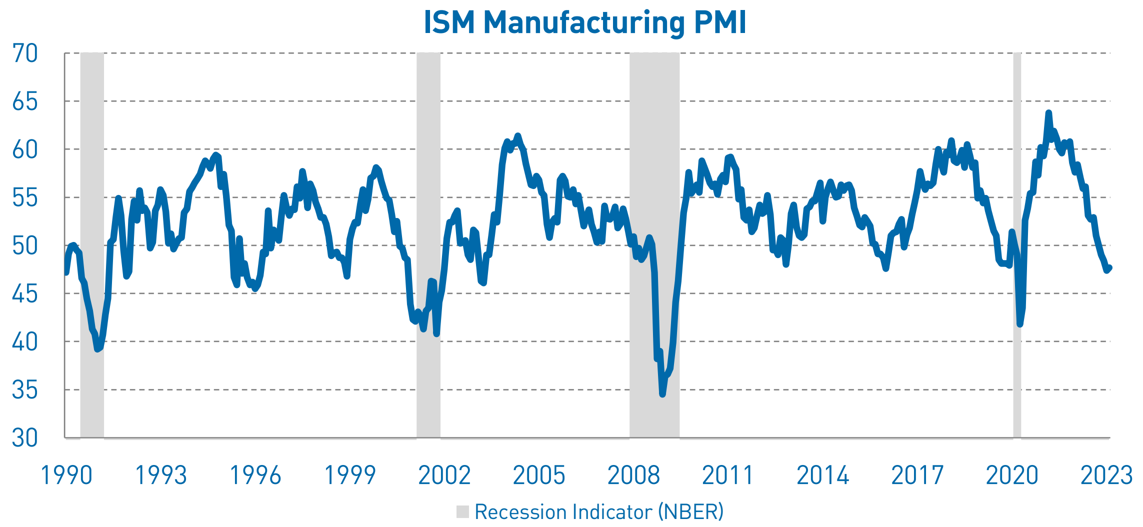
- Economic outlook
- Fed and rate outlook
- Banking system liquidity developments
- Balance sheet trends
- Swaps and investment securities portfolio update

Growth slowed steadily through 2022, driven by housing and a slowdown in goods spending



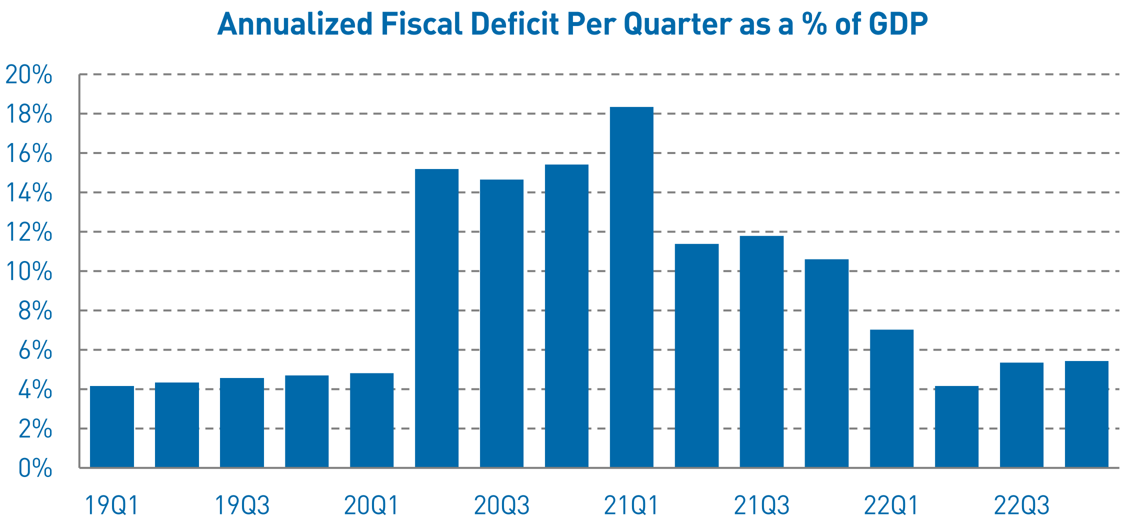


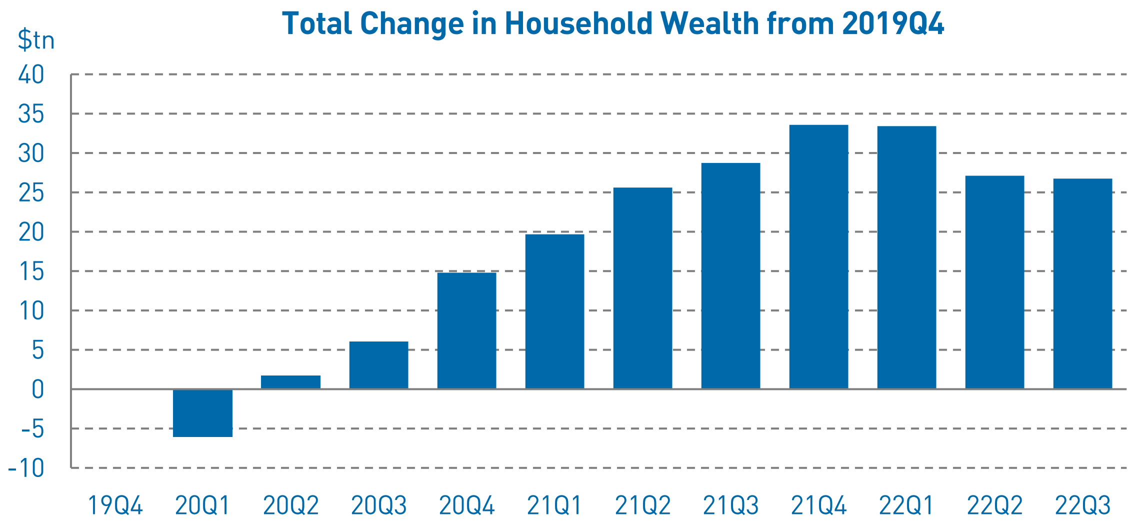


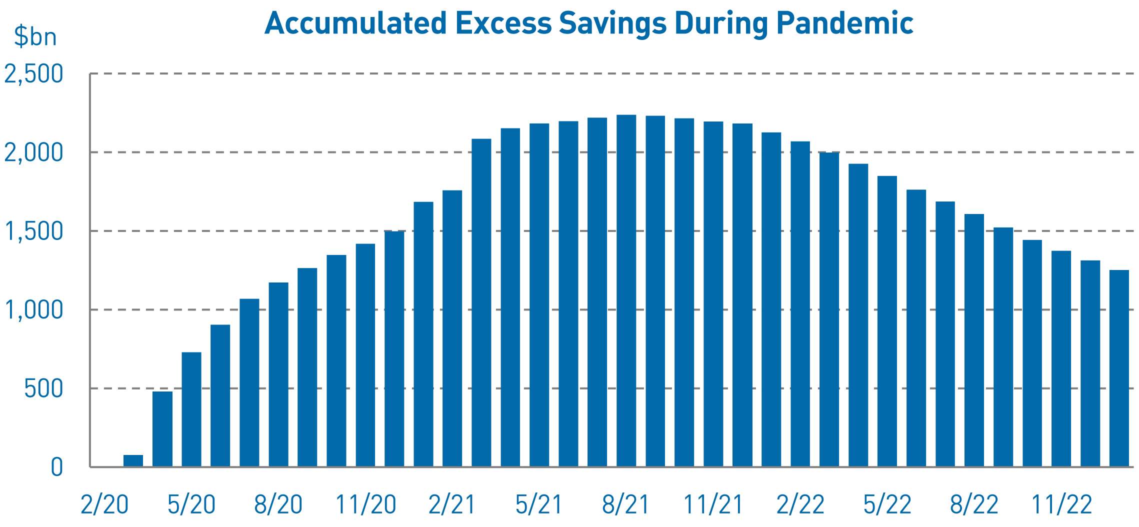


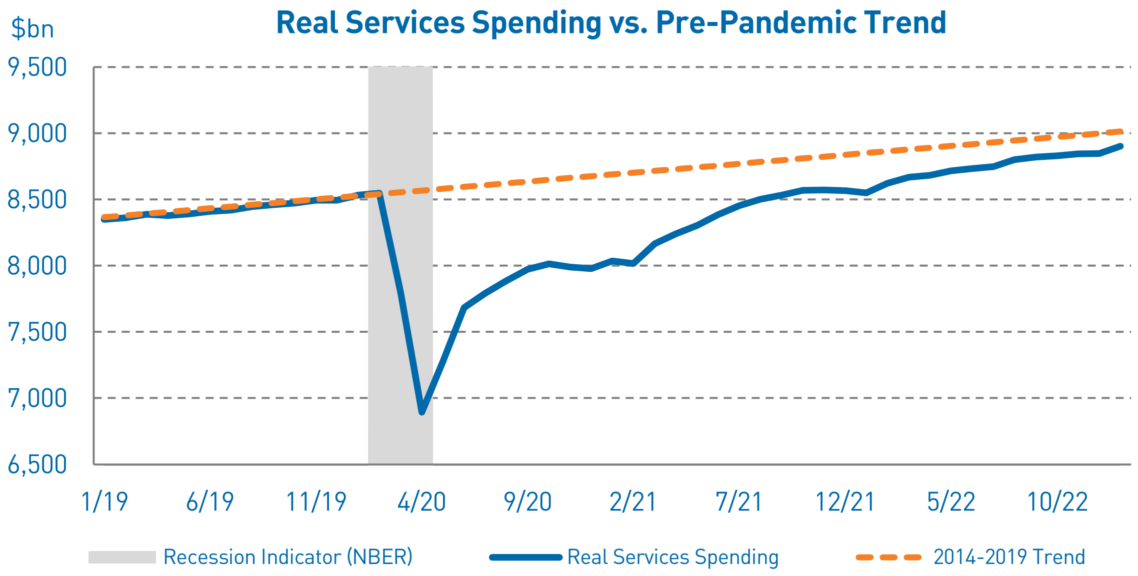
– Sources (top-left to bottom-right): BEA; BLS; BEA; ISM

Growth momentum was extremely strong heading into 2022



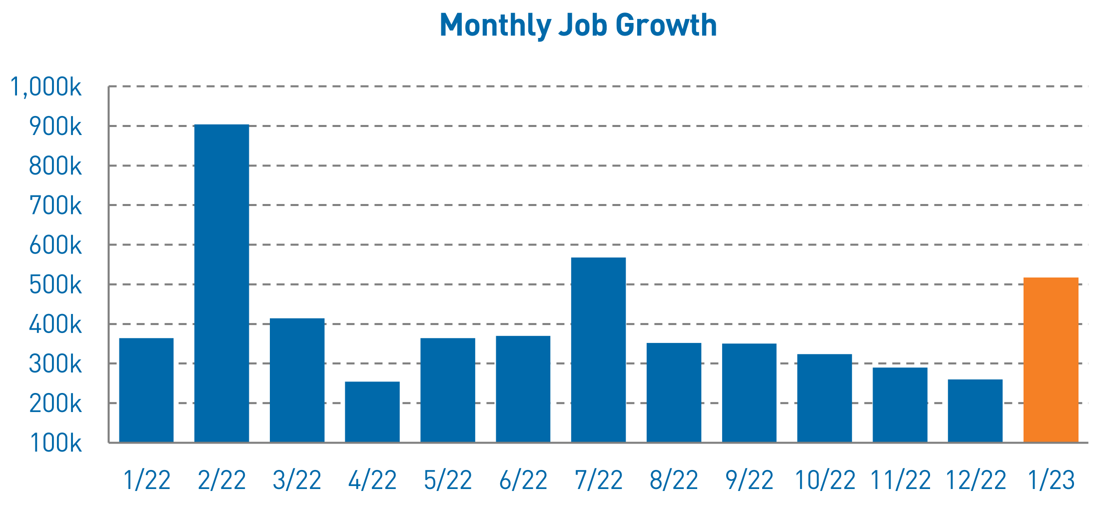


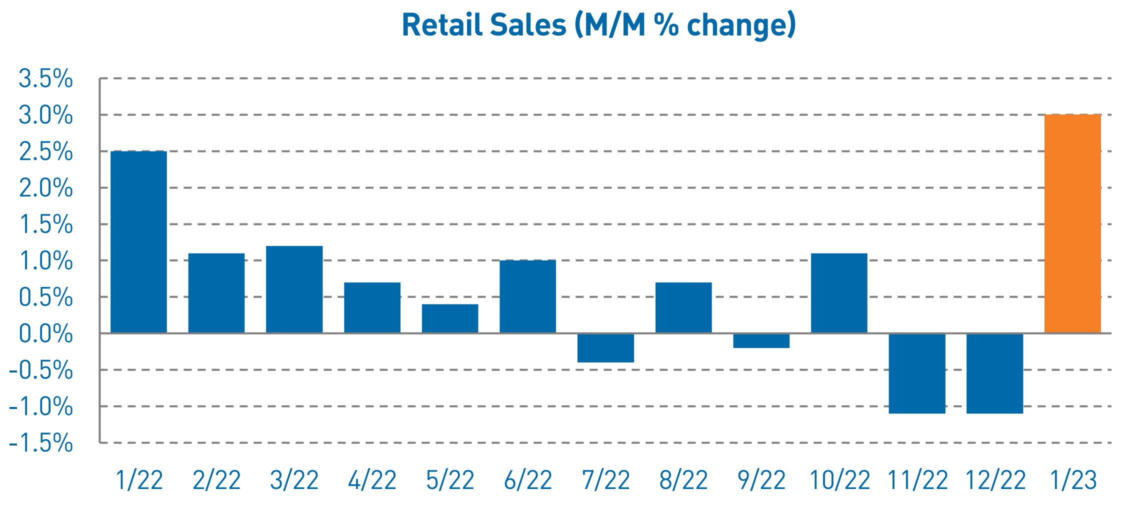


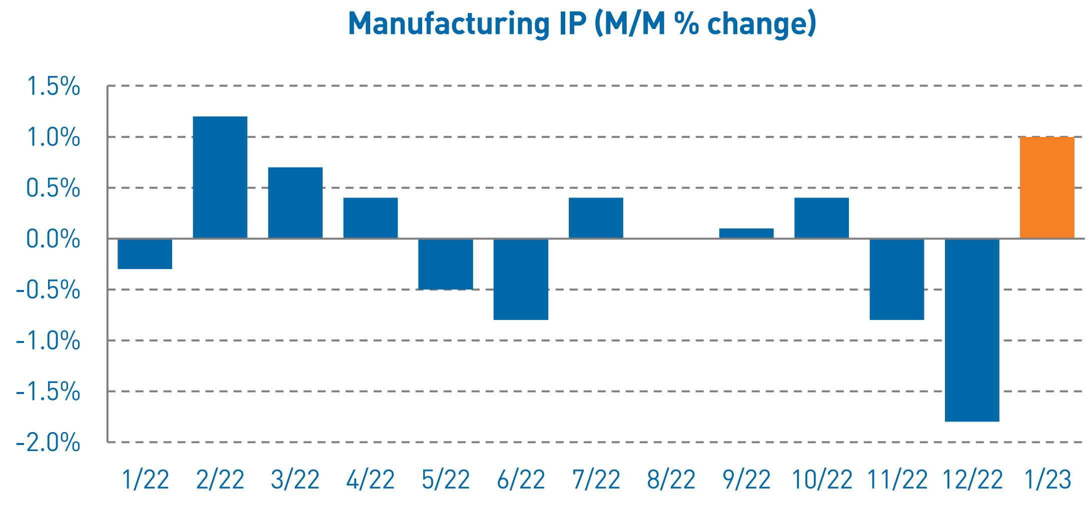


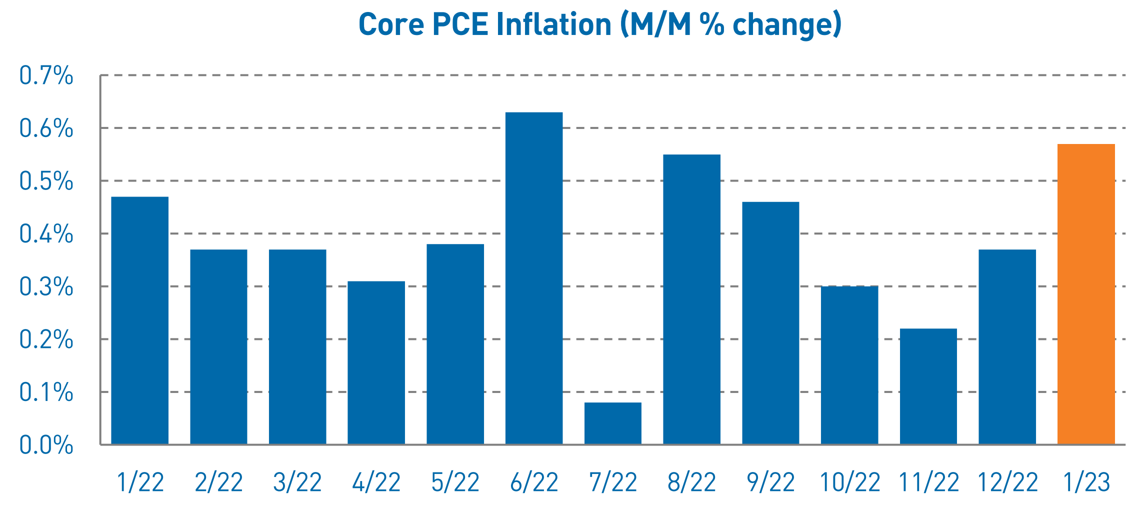
– Sources (top-left to bottom-right): Treasury; FRB; BEA/PNC Estimates; BEA

The economy was showing signs of steady deceleration until year-end, but January data has been unexpectedly strong





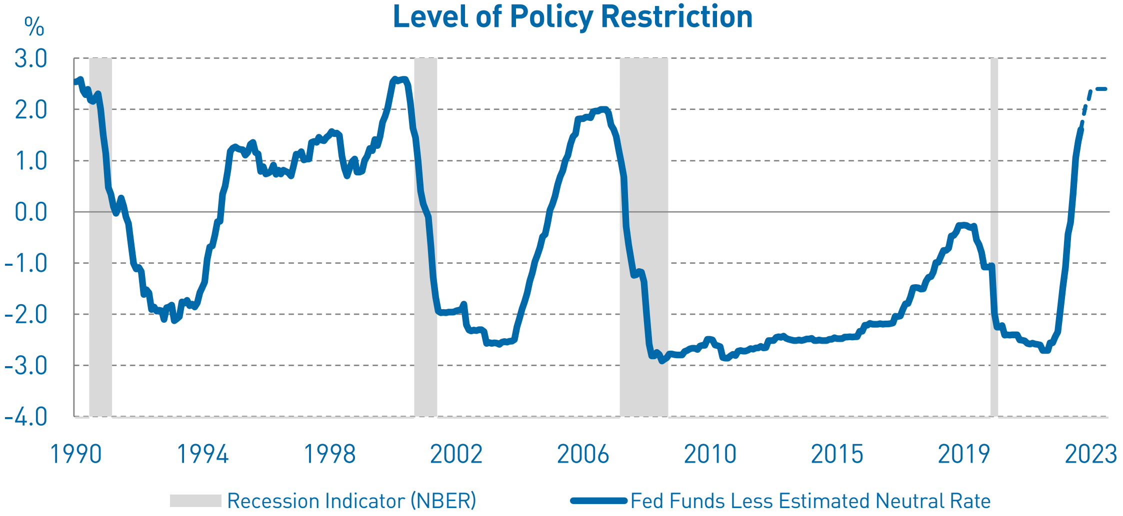




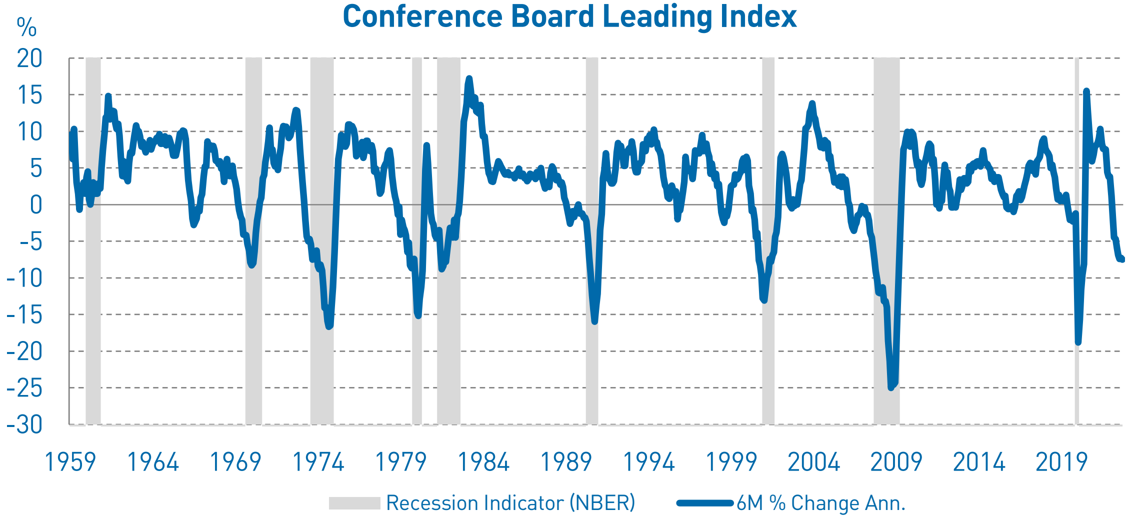
– Sources (top-left to bottom-right): BLS; Census; FRB; BEA

While near-term growth looks resilient, leading indicators point to a recession starting later this year

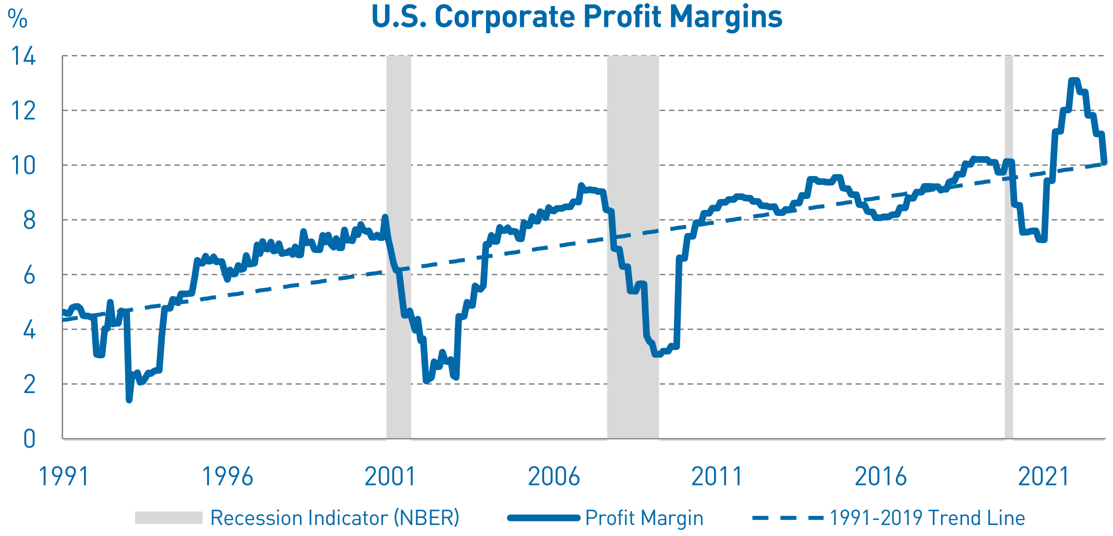
Level of Policy Restriction



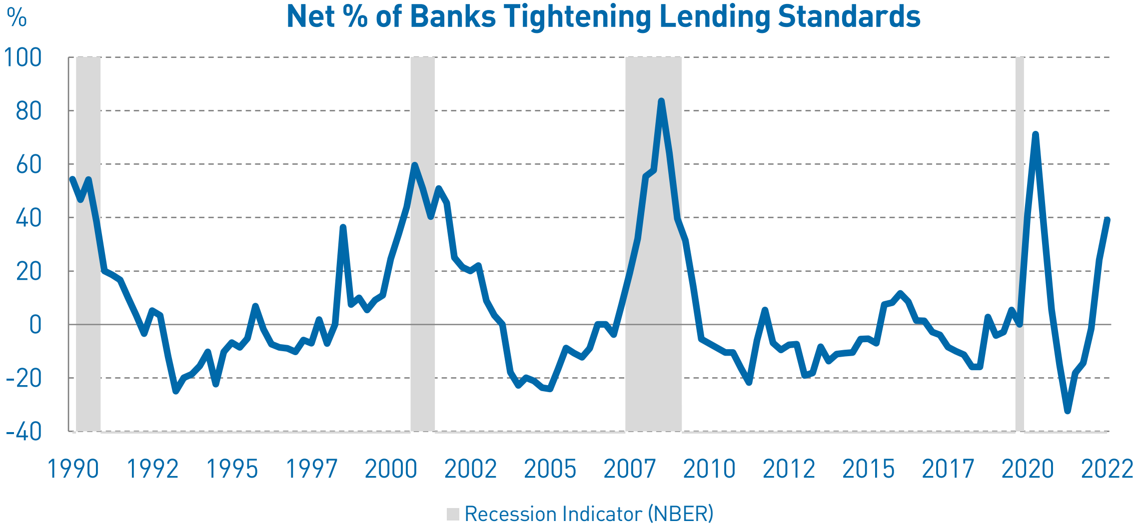
Conference Board Leading Index



U.S. Corporate Profit Margins



Net % of Banks Tightening Lending Standards

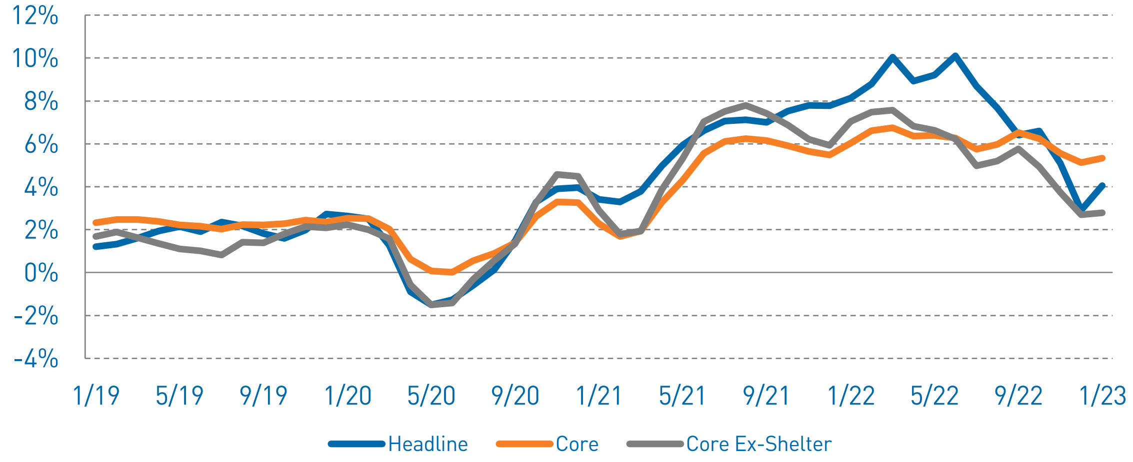


– Sources (top-left to bottom-right): BBG/PNC Estimates; Conference Board; BBG; FRB

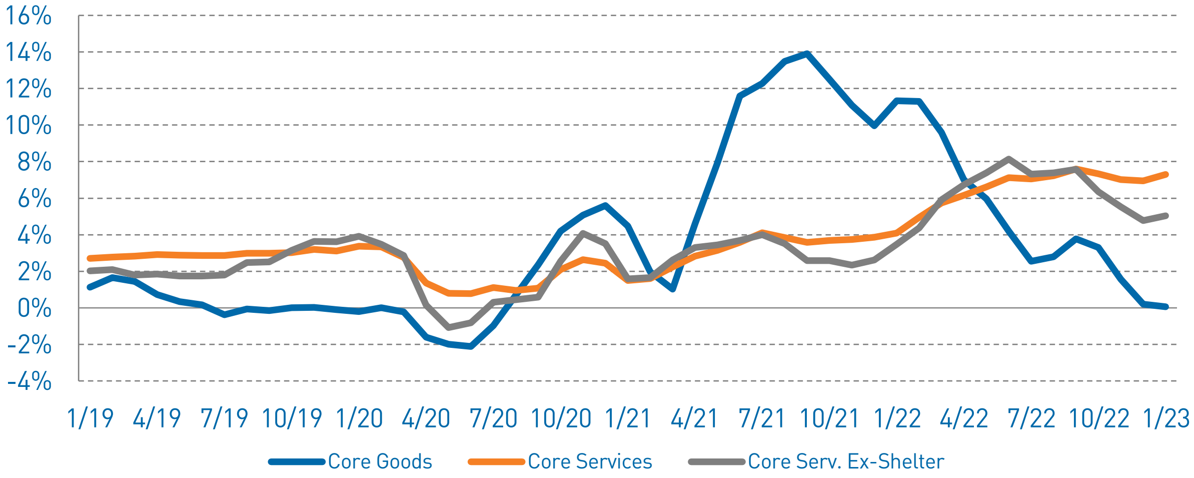
Goods price deflation has driven inflation down substantially from the peak, but service inflation remains sticky due to a strong labor market

PNC

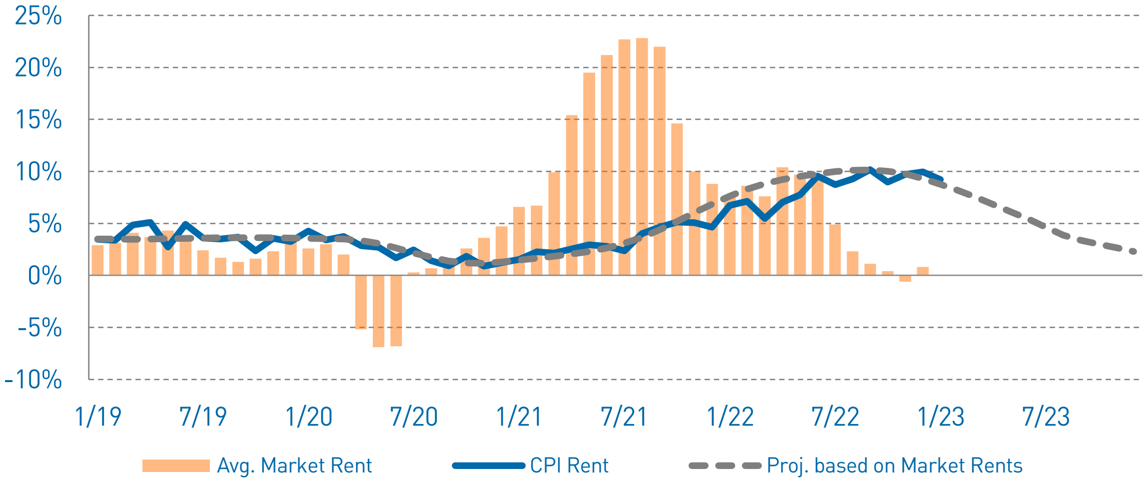
Headline vs. Core CPI (6M Ann. %)



Core Goods vs. Core Services vs. Core Serv. Ex-Shelter (6M Ann.)



CPI Rent vs. Market Rent Measures (M/M Ann.)



Core CPI: Peak-to-Trough Declines in Y/Y Growth Rates During Past Recessions

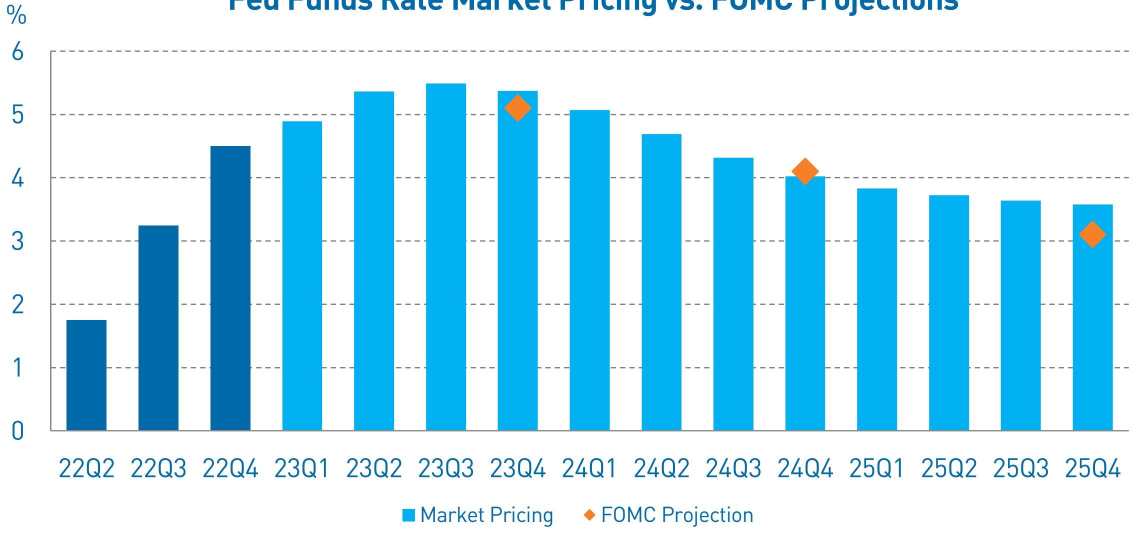
			Peak-to-Trough Declines	
Recession	Peak	Trough	pp	%
1948-49 Recession	7.3	-2.0	-9.3pp	-127%
1953-54 Recession	3.4	-0.1	-3.6pp	-104%
1957-58 Recession	3.2	1.7	-1.5pp	-47%
1957-58 Recession	2.4	0.7	-1.7pp	-72%
1960-61 Recession	6.6	2.5	-4.1pp	-62%
1973-75 Recession	11.9	6.1	-5.8pp	-49%
1980 Recession	13.6	9.4	-4.2pp	-31%
1981-82 Recession	11.8	3.1	-8.7pp	-74%
1990-91 Recession	5.7	3.3	-2.4pp	-42%
2001 Recession	2.8	1.1	-1.7pp	-61%
2007-09 Recession	2.9	0.6	-2.3pp	-79%
Average All	6.5	2.4	-4.1pp	-68%

– Sources (top-left to bottom-right): BLS; BLS; BLS/CoStar/Zillow/ApartmentList/PNC Estimates; BLS/PNC Estimates

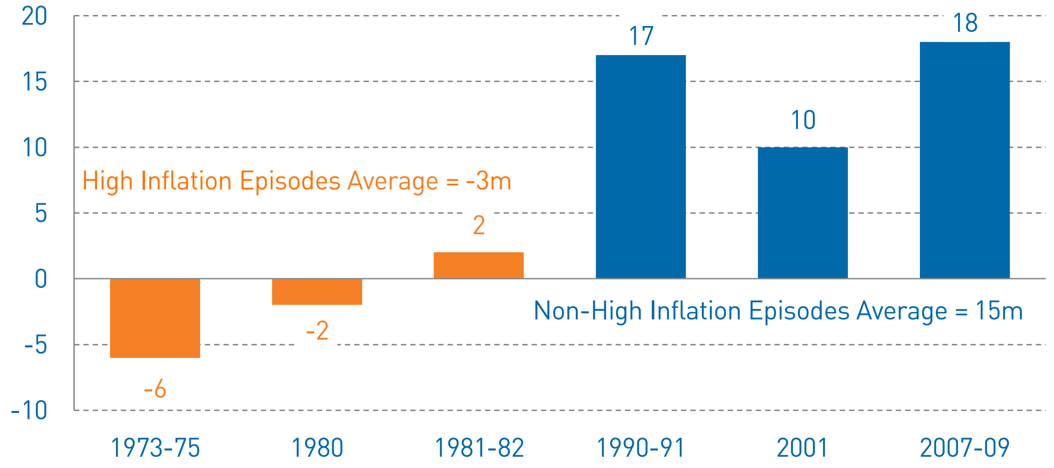
The hiking cycle will likely end by mid-summer, but policy is likely to remain restrictive for some time

- Given the momentum in economic activity and inflation at the start of 2023, the Fed will most likely hike at both the March and May meetings before pausing
- Policy is likely to remain restrictive in the near-term, and we expect a mild recession beginning sometime in late 23Q3
- Inflation will start to decline more rapidly in 23H2, and we expect the Fed to begin easing in early 2024

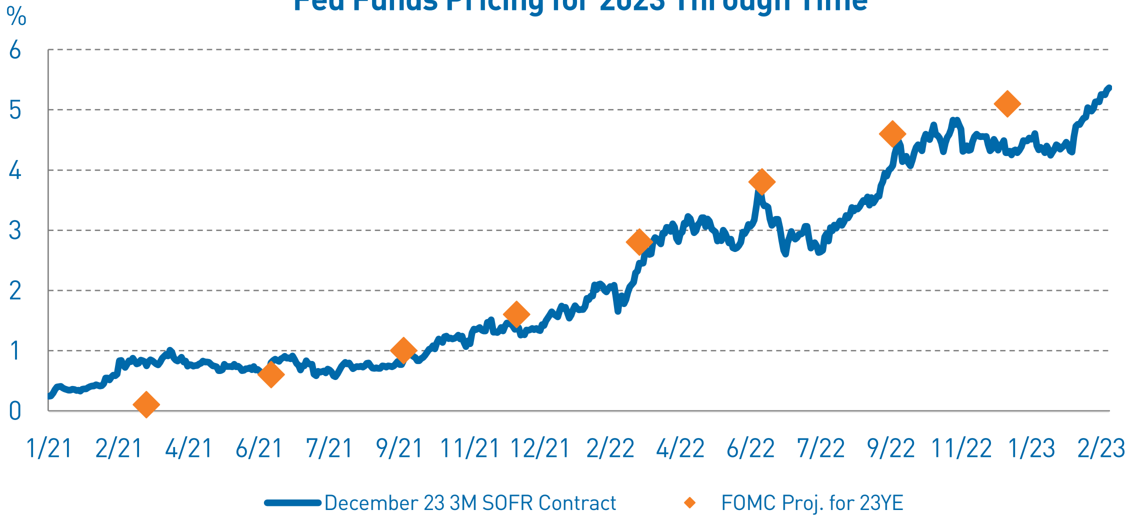
Fed Funds Rate Market Pricing vs. FOMC Projections*



# of Months Between Last Rate Hike and Recession Start



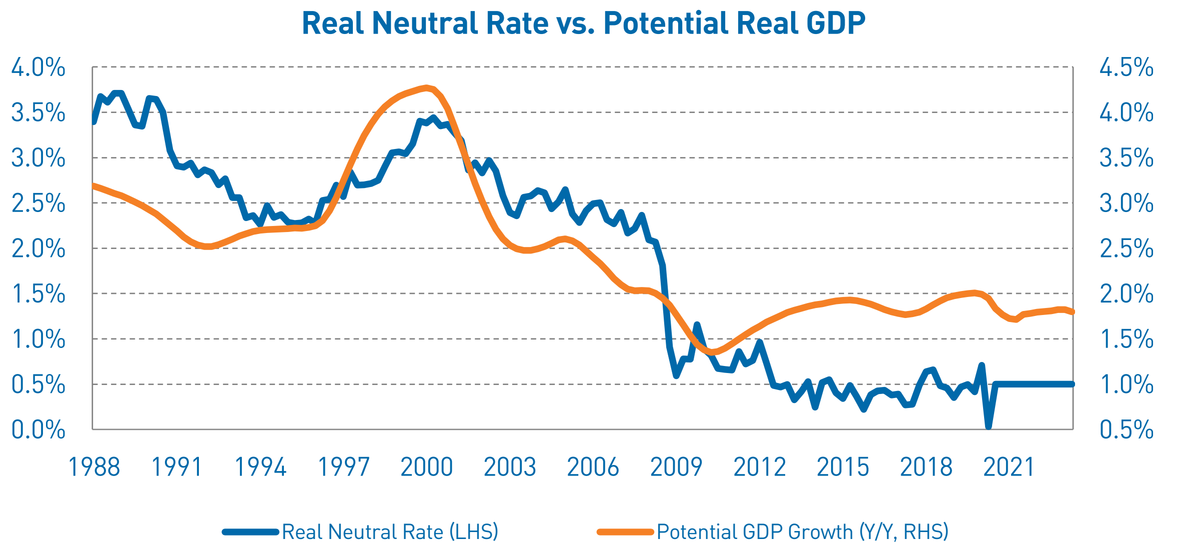
Fed Funds Pricing for 2023 Through Time

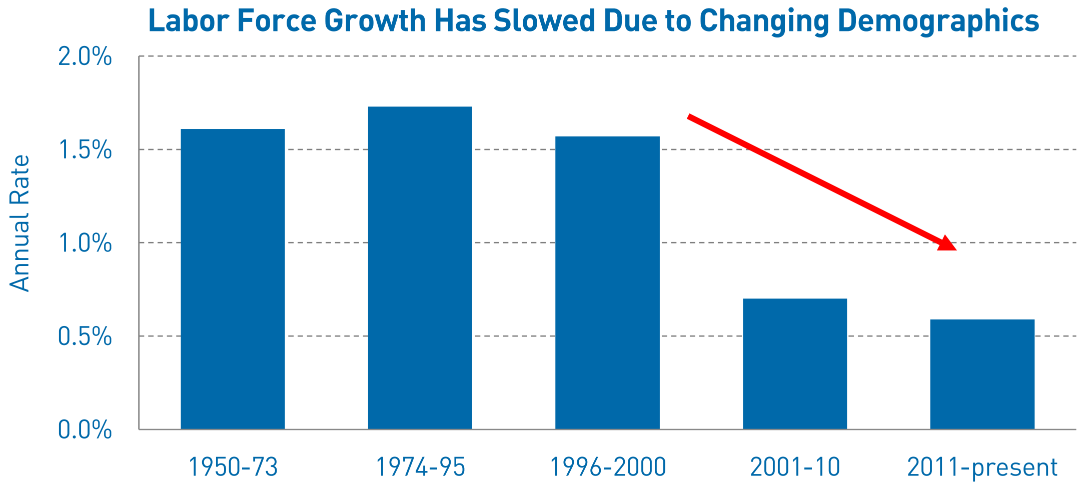


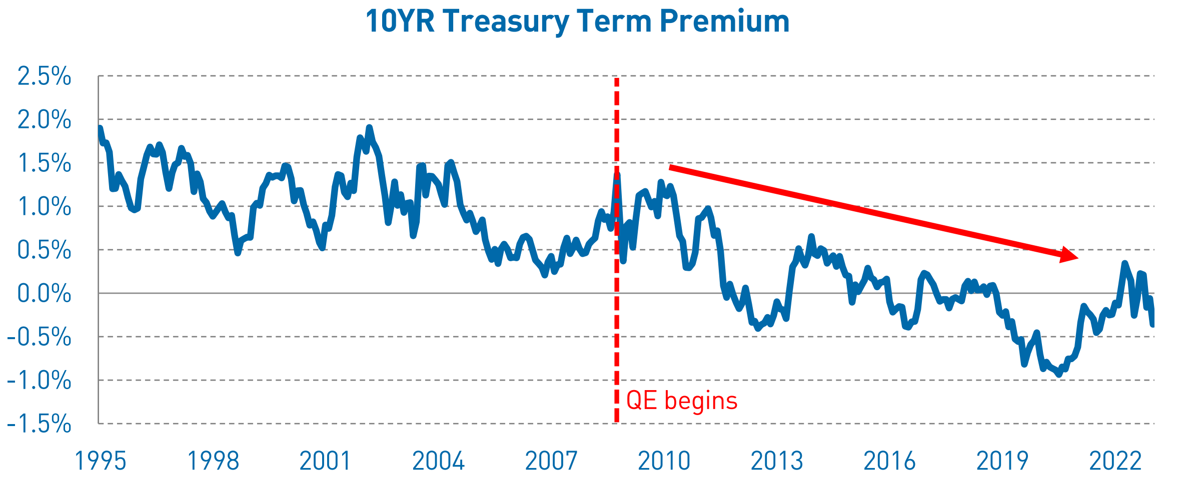
– Sources (top-right to bottom-right): BBG/FOMC; PNC calculation; BBG/FOMC
– *Fed Funds futures used through 2023YE, 3M SOFR Futures thereafter

Equilibrium level of interest rates has been declining for three decades, driven by aging demographics, the saving glut, and quantitative easing

- Neutral short-term rates have steadily declined over the past three decades, driven by declining potential GDP
- Aging demographics and lower productivity have been the key drivers of this decline
- Excess savings and large scale asset purchases have led to a significant decline in term premium
- How inflation evolves will also have a significant impact on interest rates in the future



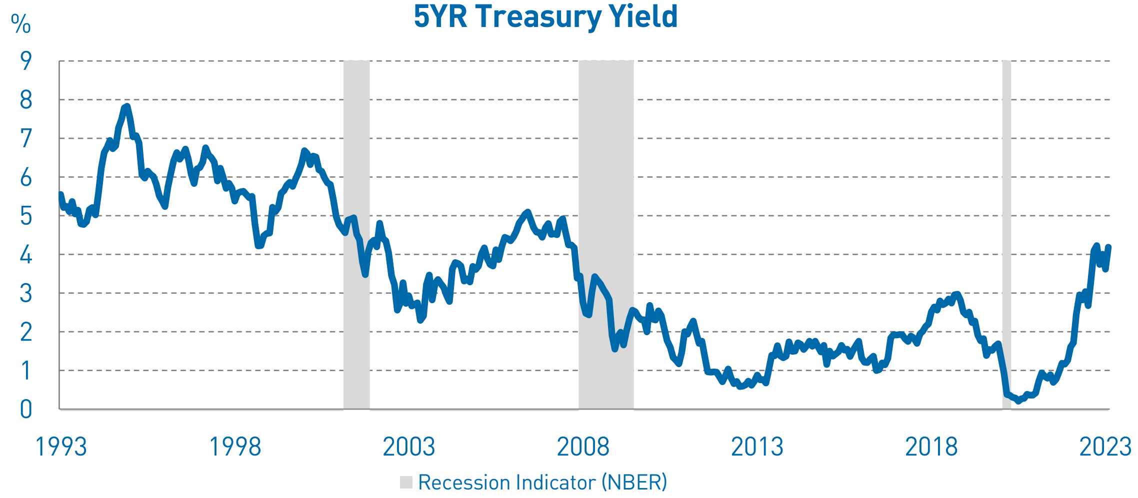




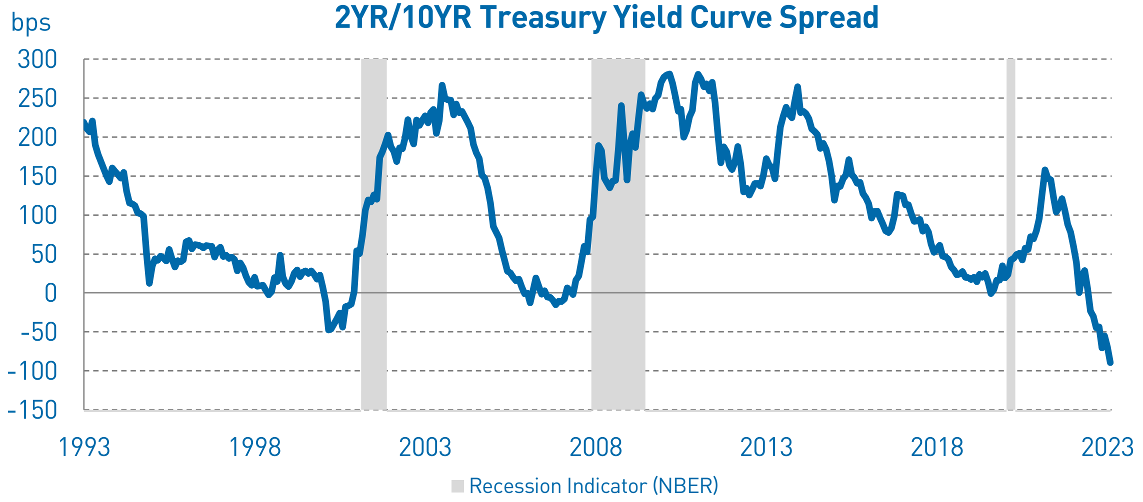
– Sources (top-right to bottom-right): BBG/CBO; BLS; BBG/Kim-Write TP estimate

Rates are at the highest level in fifteen years and the outlook is heavily dependent on the outlook for inflation and likelihood of recession

5YR Treasury Yield



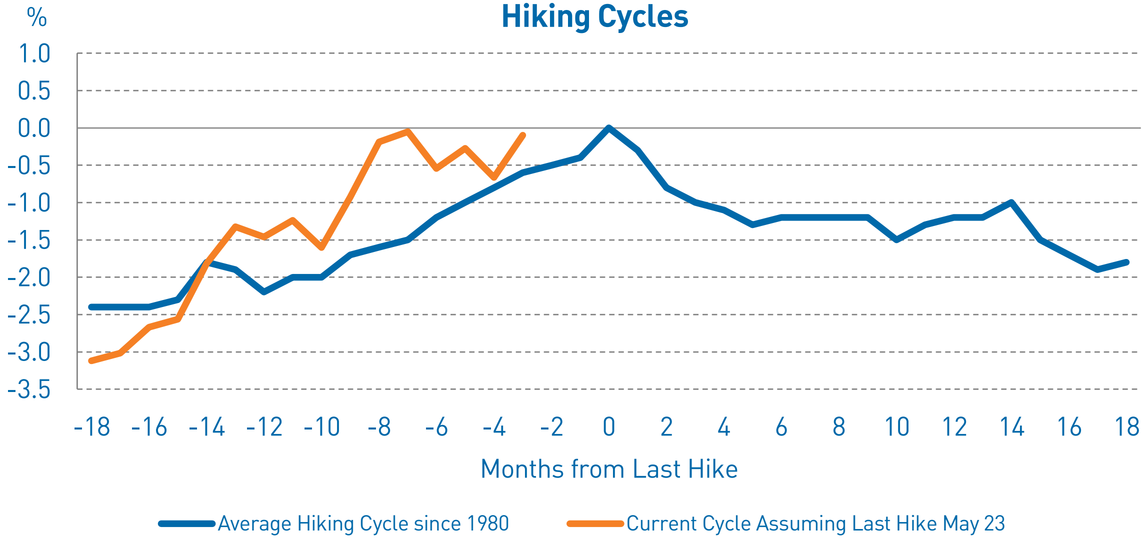
2YR/10YR Treasury Yield Curve Spread



Declines in Yields During Past Easing Cycles

	2YR Treasury		5YR Treasury	
Recession	bps	%	bps	%
1980 Recession	-700	-46%	-526	-37%
1981-82 Recession	-786	-46%	-655	-40%
1990-91 Recession	-626	-63%	-530	-54%
2001 Recession	-583	-84%	-478	-70%
2007-09 Recession	-512	-97%	-461	-88%
2020 Recession	-286	-97%	-290	-94%
Average All	-576	-67%	-509	-61%

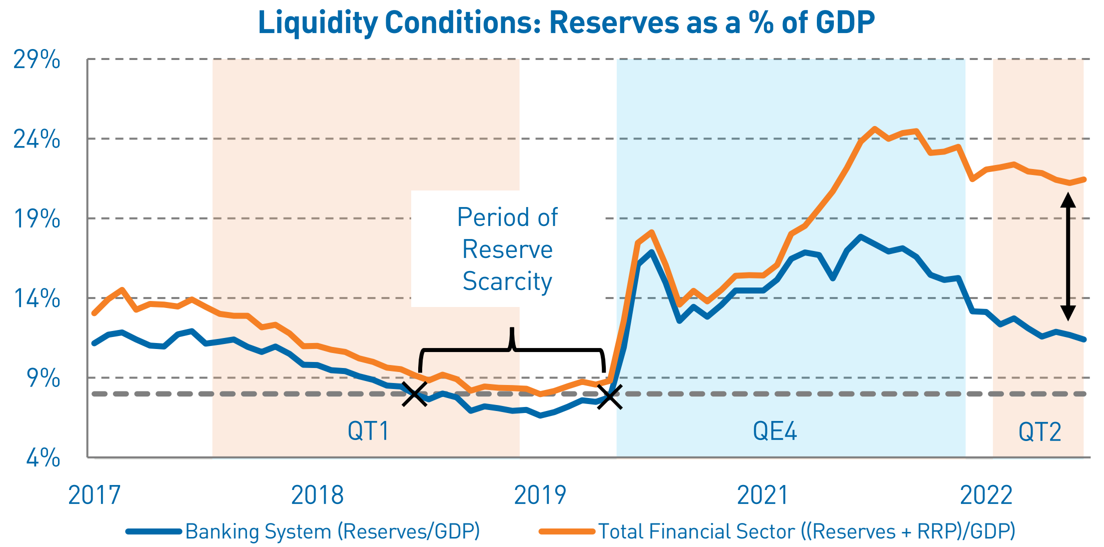
Changes in 5YR Treasury Yield Around the Last Rate Hike in Past Hiking Cycles

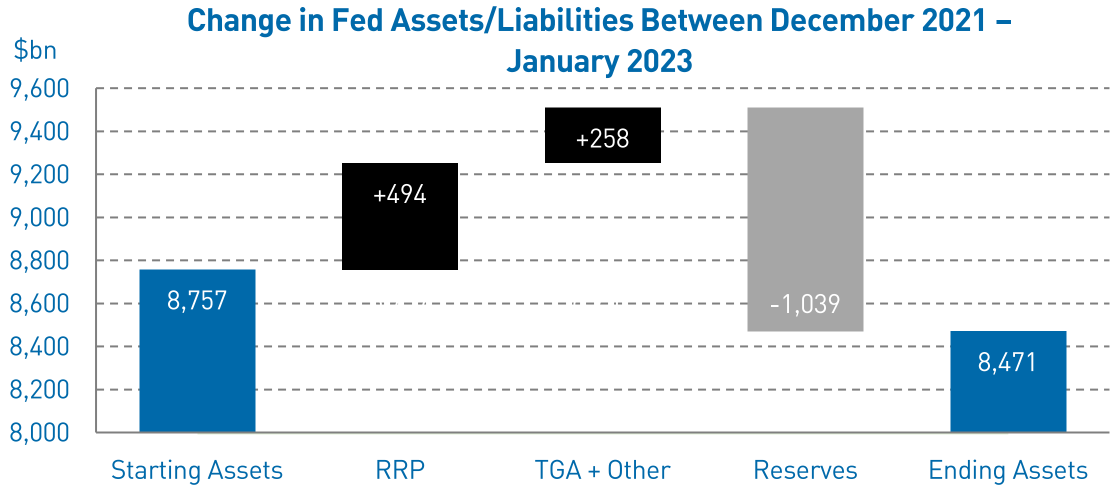


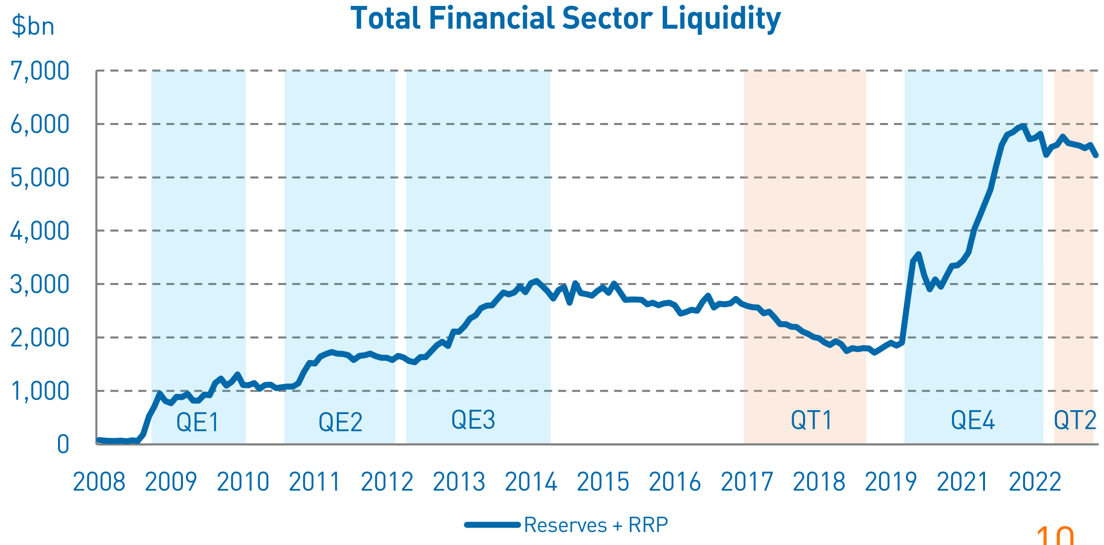
– Source (all charts): BBG

Aggregate liquidity in the financial system remains high, but banking system liquidity has been declining

- Aggregate liquidity in the financial system remains ample, with reserves and the Fed's Reverse Repo Facility (RRP) totaling 22% of GDP
- Over the past year, Fed SOMA holdings are only marginally lower, but there have been very large shifts on the liability side of Fed's balance sheet
- Liquidity trends in the banking and money market sectors have diverged over the past year – large reduction in bank reserves and large increases in RRP usage
- Reserves in the banking sector declined rapidly in 2022 from a very high level that was reached post-COVID
- Reserves are currently comfortably higher than the level seen in the second half of 2019 when reserves were deemed to be scarce



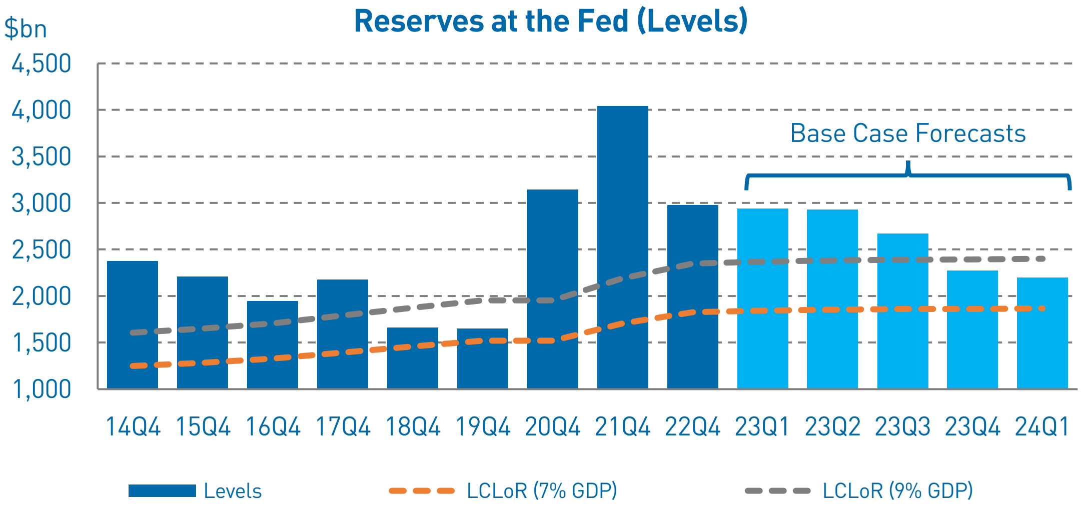


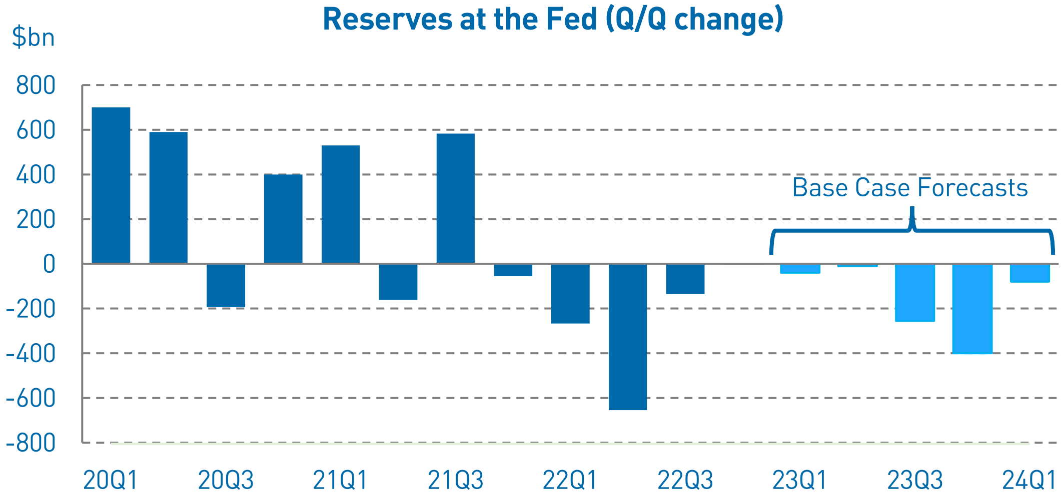


– Sources (all charts): FRB/BBG

Bank reserves are likely to become scarce by the end of this year

- We estimate a range for the Lowest Comfortable Level of Reserves (LCLoR) below which reserves are deemed scarce
- This is determined by assuming the banking sector hit the LCLoR in 2019Q4, and extrapolating that level forward assuming a 7%-9% range of Reserves/GDP
- We estimate LCLoR range to be $1.9 tn to $2.4 tn
- Reserve declines will depend on developments in the TGA along with movements in RRP usage
- At current pace of asset reduction, using our base case assumption, **we project reserve levels of about $2.25 tn by year-end 2023**



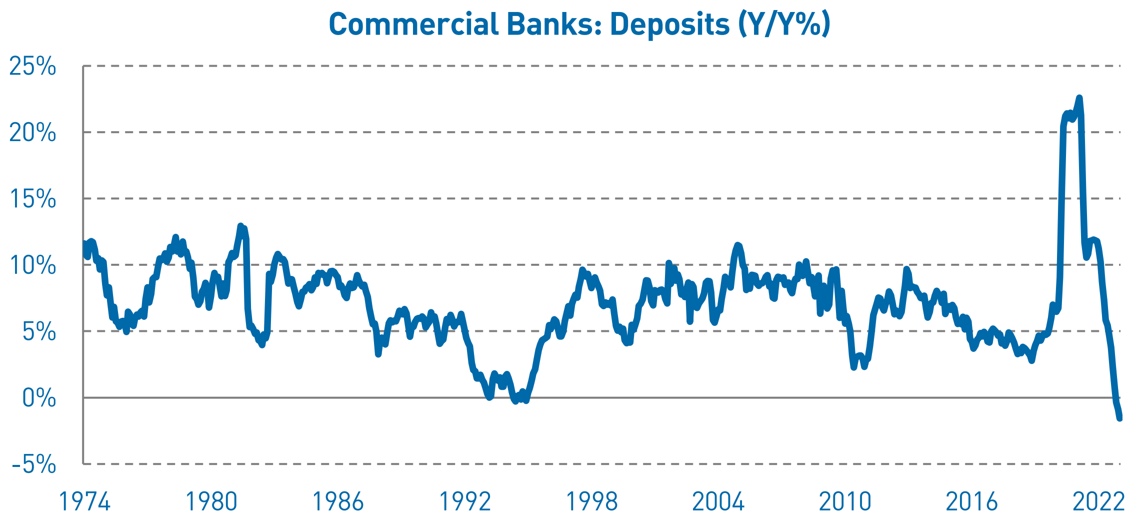


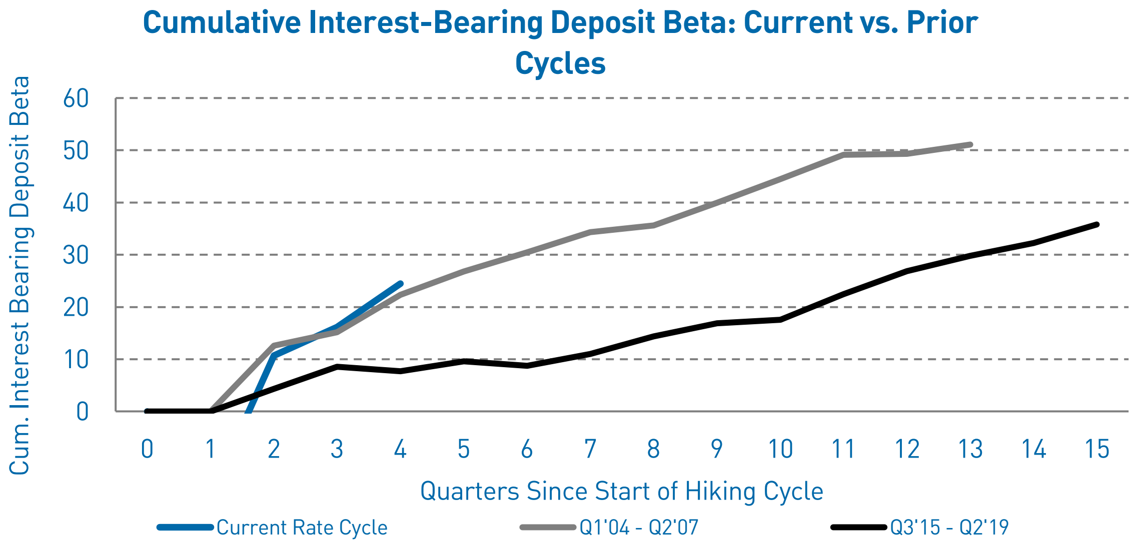
2023YE Reserves as a Function of TGA and RRP*

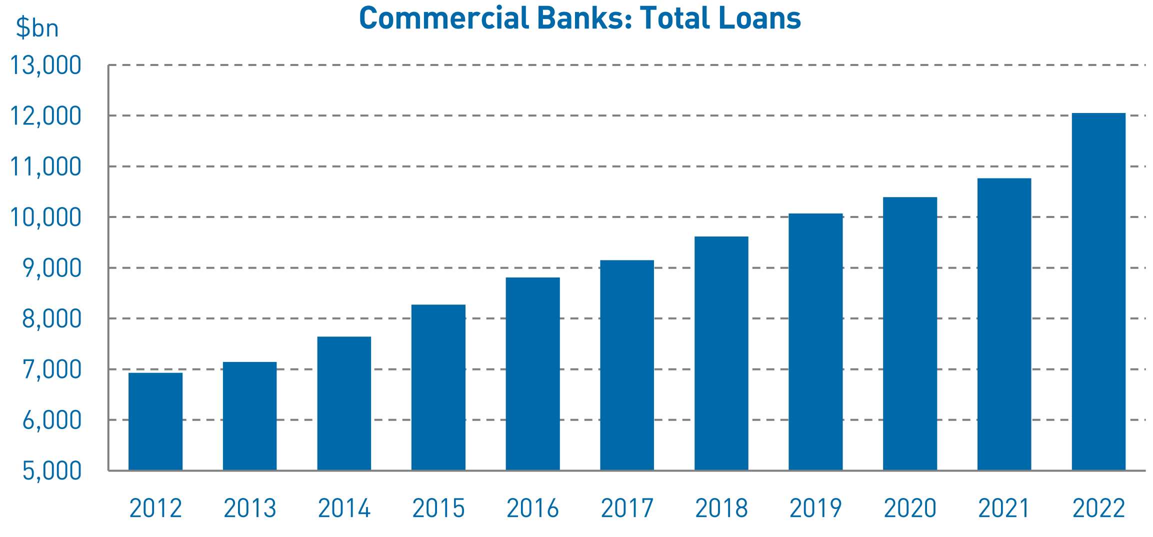
		% of 2023 Runoff Absorbed by RRP				
	$bn	100%	75%	50%	25%	0%
2023YE TGA Balance	$100	$3,273	$2,974	$2,674	$2,374	$2,075
	$300	$3,073	$2,774	$2,474	$2,101	$1,875
	$500	$2,873	$2,574	$2,274	$1,974	$1,675
	$700	$2,673	$2,374	$2,074	$1,774	$1,475

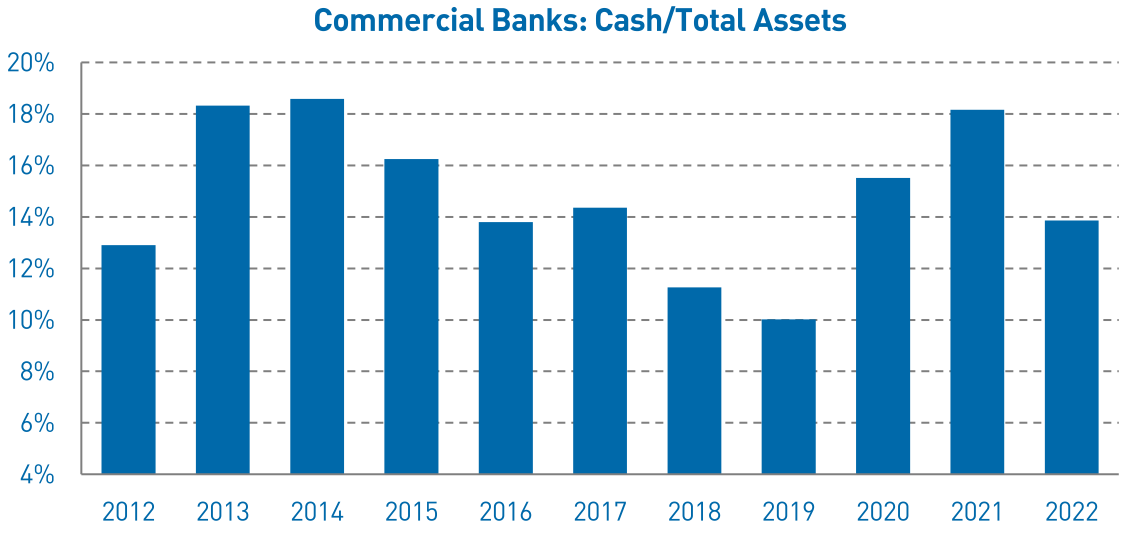
– Sources (all charts): FRB/BBG/PNC Estimates
– * Assumes $95bn/month runoff in 2023, currency growing with Nominal GDP, and other assets/liabilities remaining at 2022YE levels

The rapid drawdown of reserves and elevated RRP usage resulted in the first annual deposit decline on record…



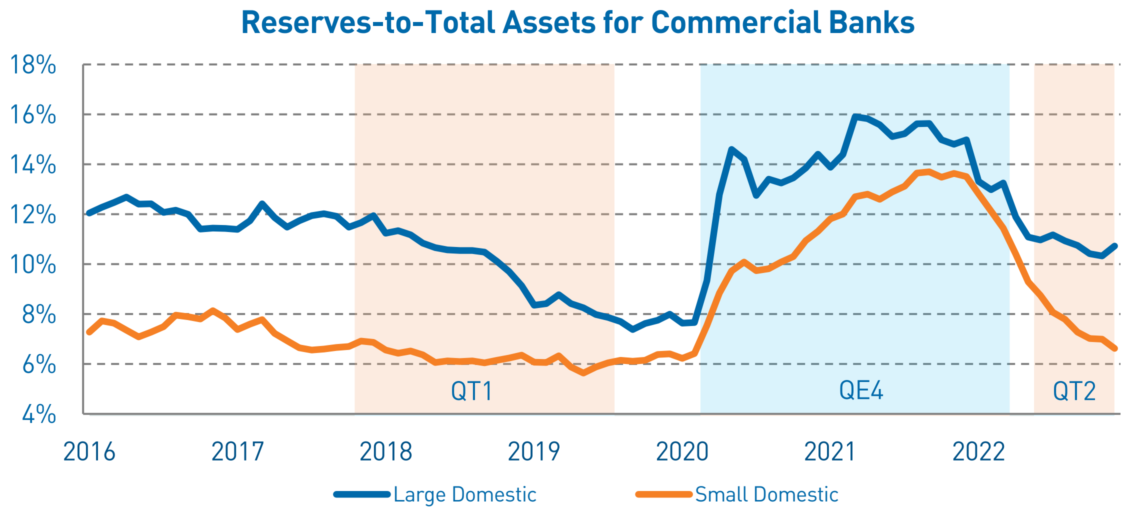


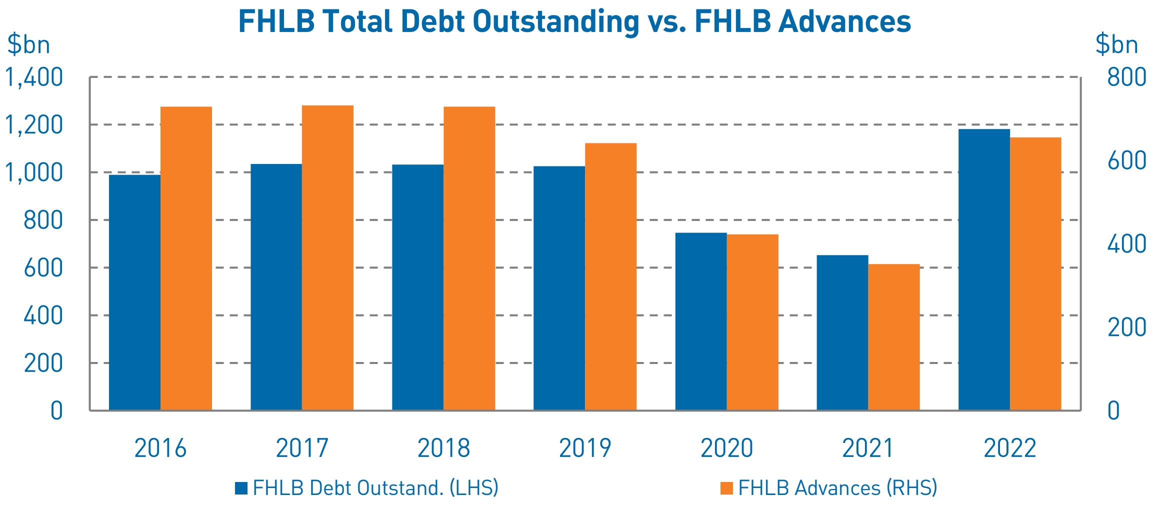


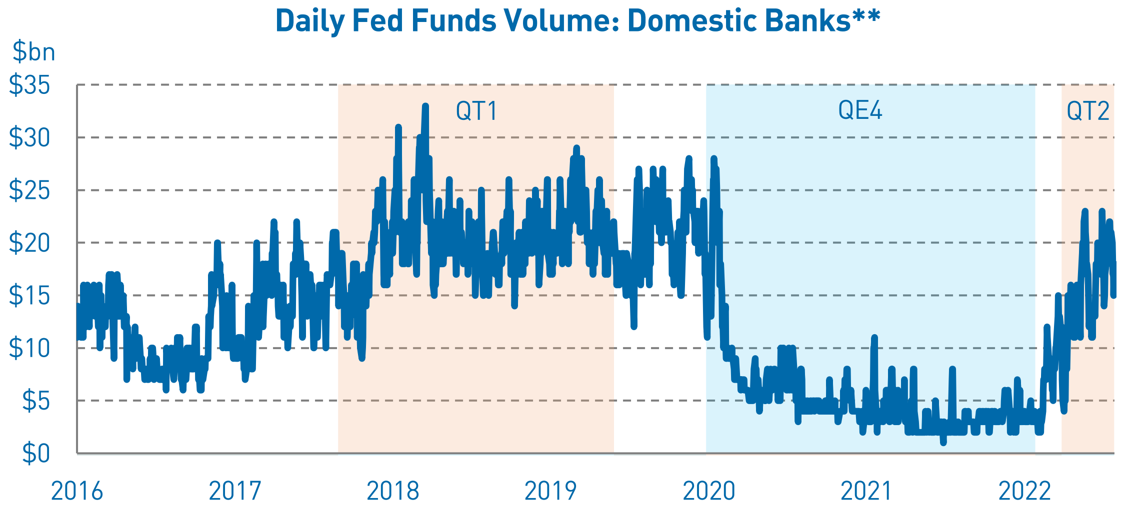


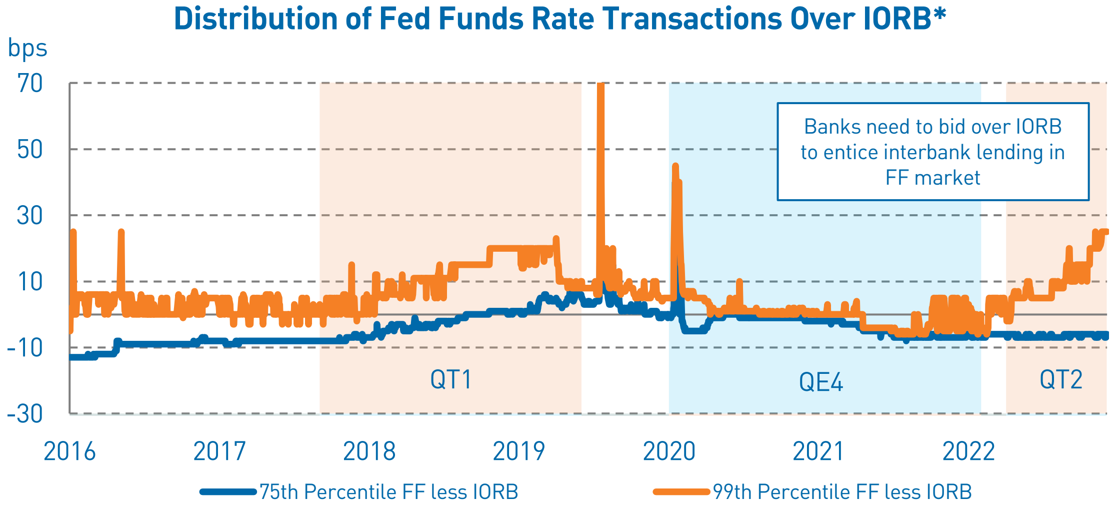
– Sources (top-left to bottom-right): FRB; Morgan Stanley; FRB; FRB

… putting more funding pressure on banks, especially smaller domestic banks



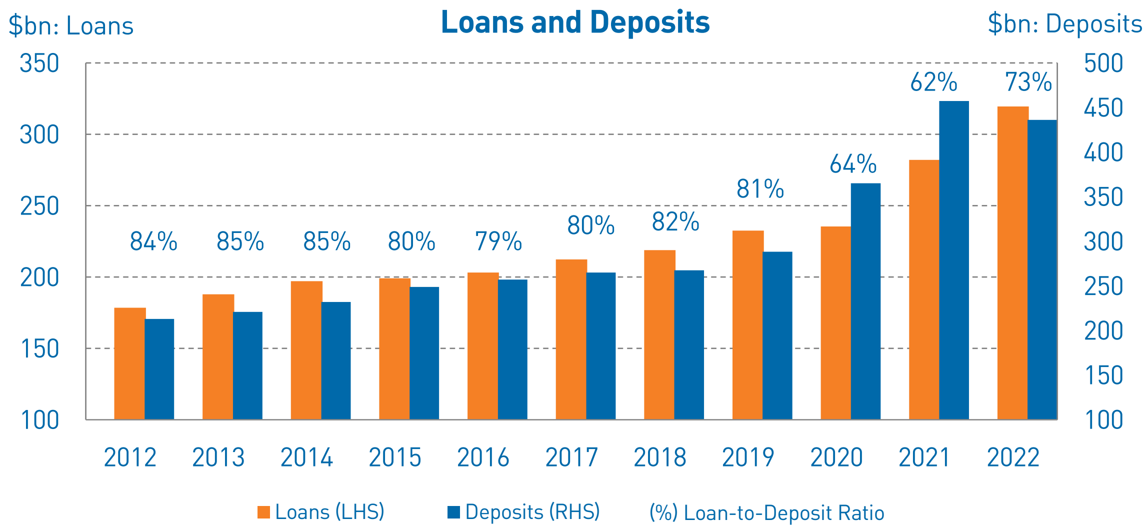


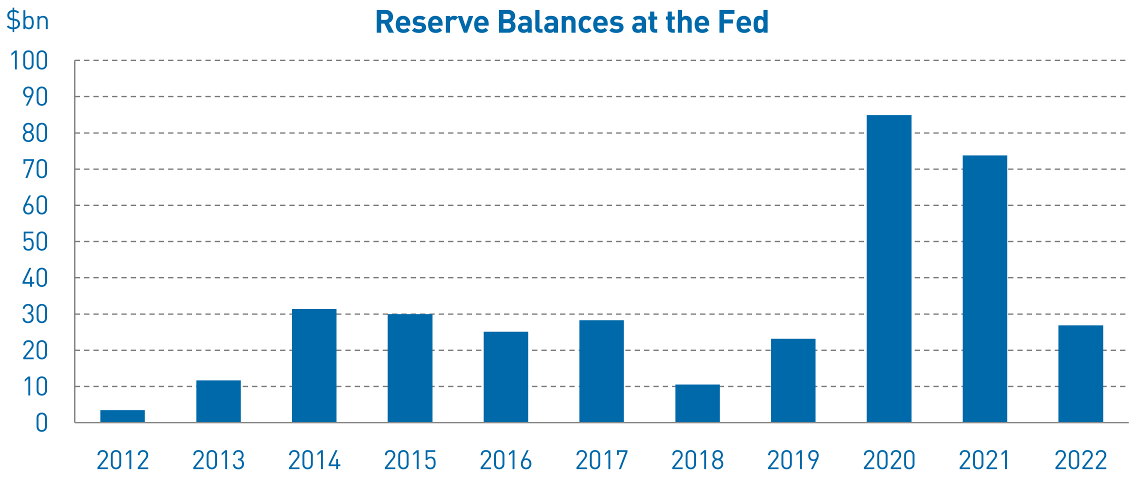


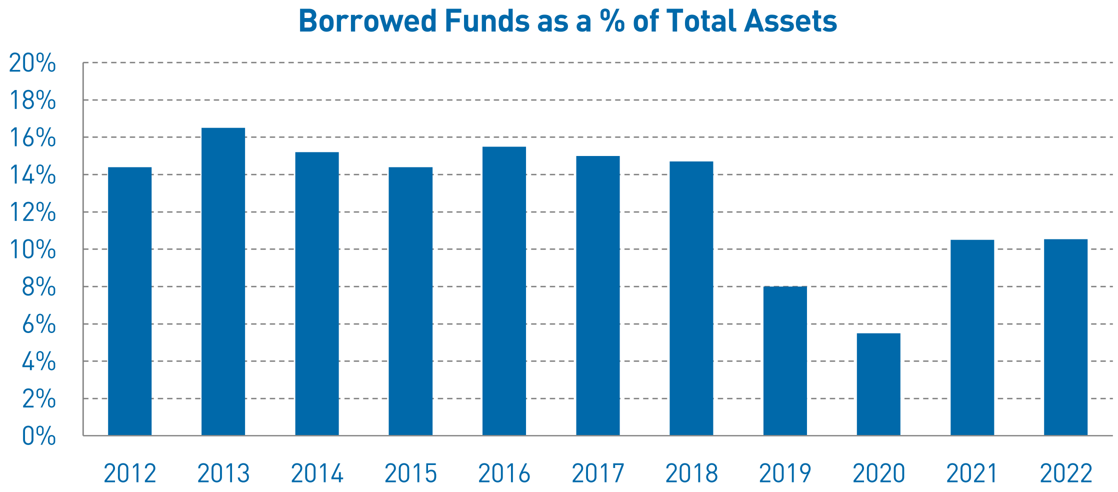


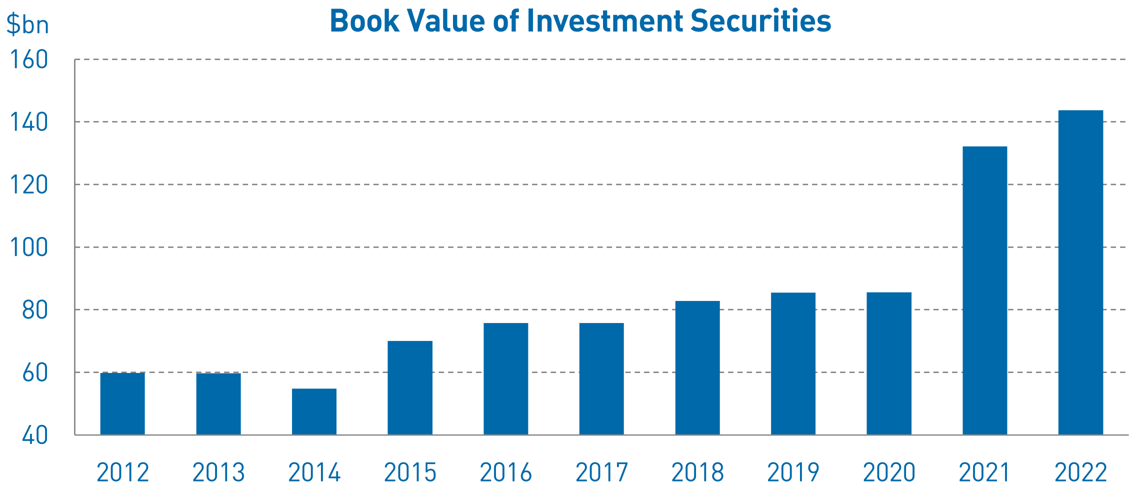
– Sources (top-left to bottom-right): FRB; FHLB; NYFRB; NYFRB
– * Month-end spikes removed prior to 2018
– ** Data available through 2022Q3

PNC balance sheet trends



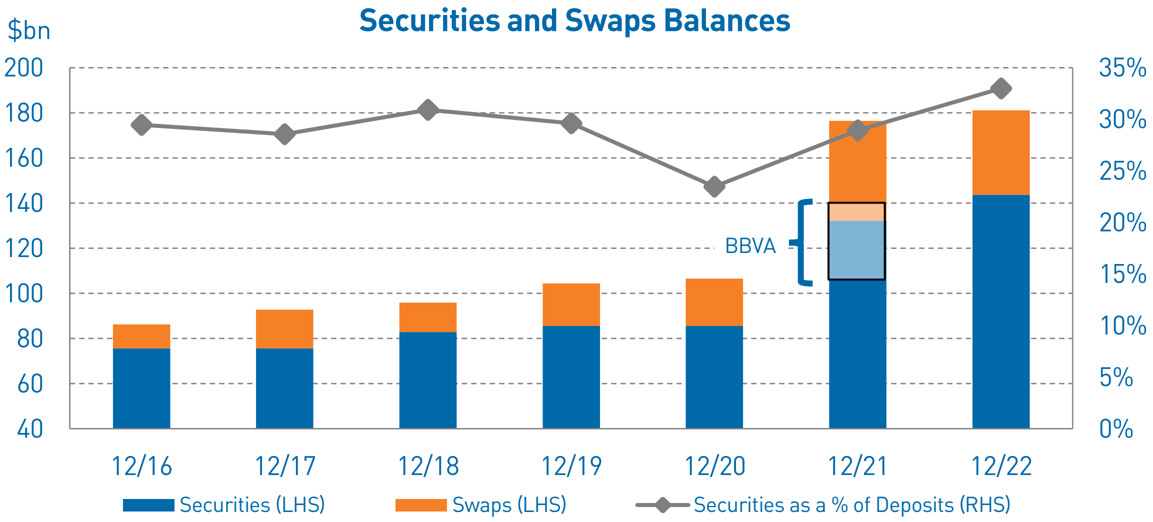


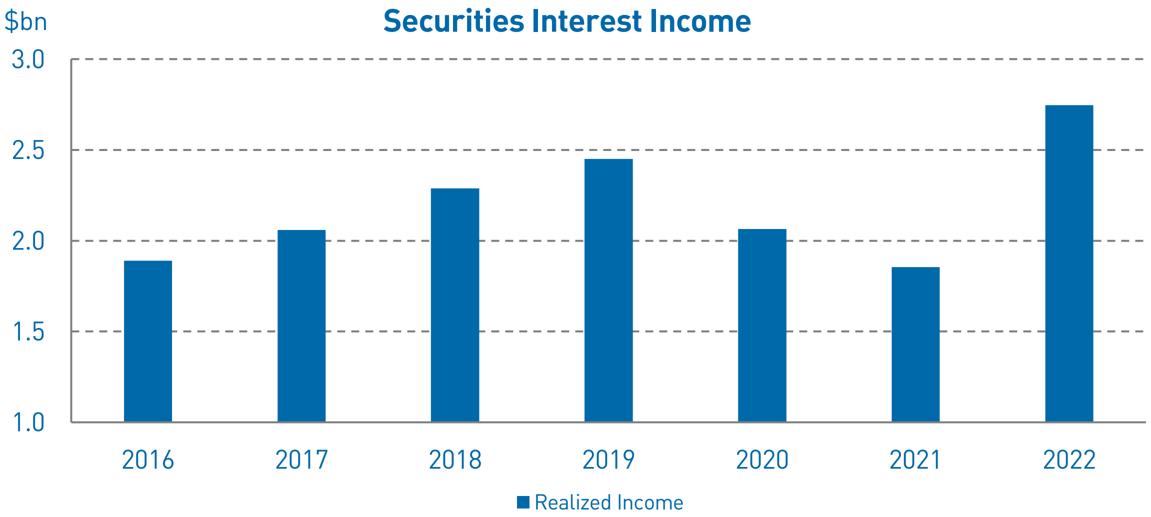


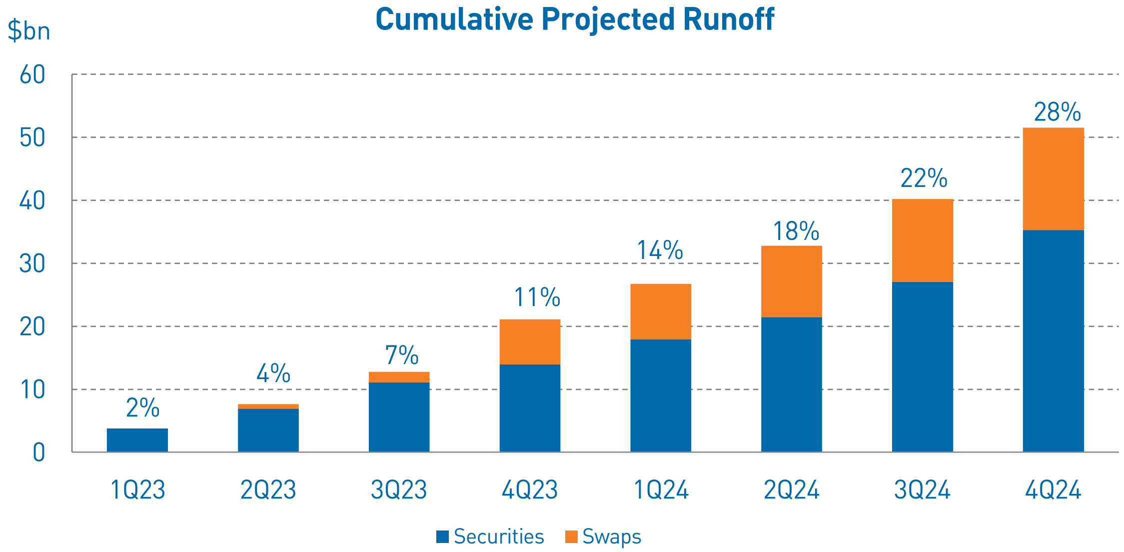


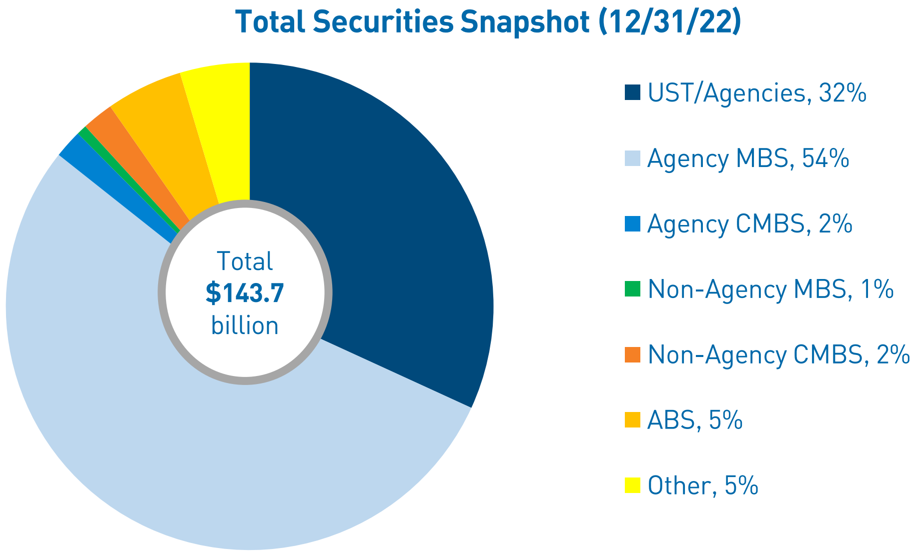
- Source (all charts): 10Ks
- Data represents year-end points
- Loans exclude leases (lease financing)

PNC securities and swap portfolio – key themes



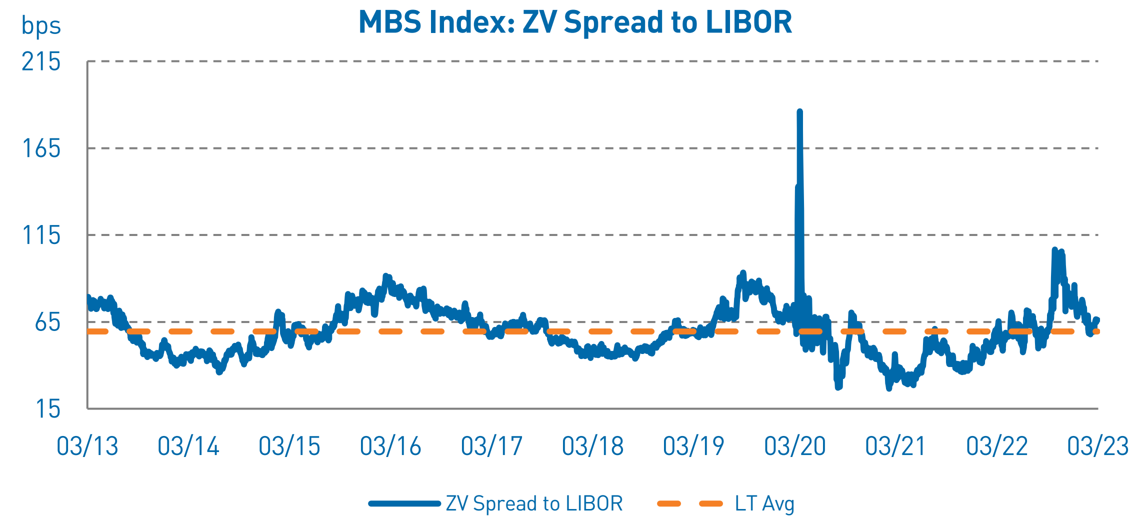


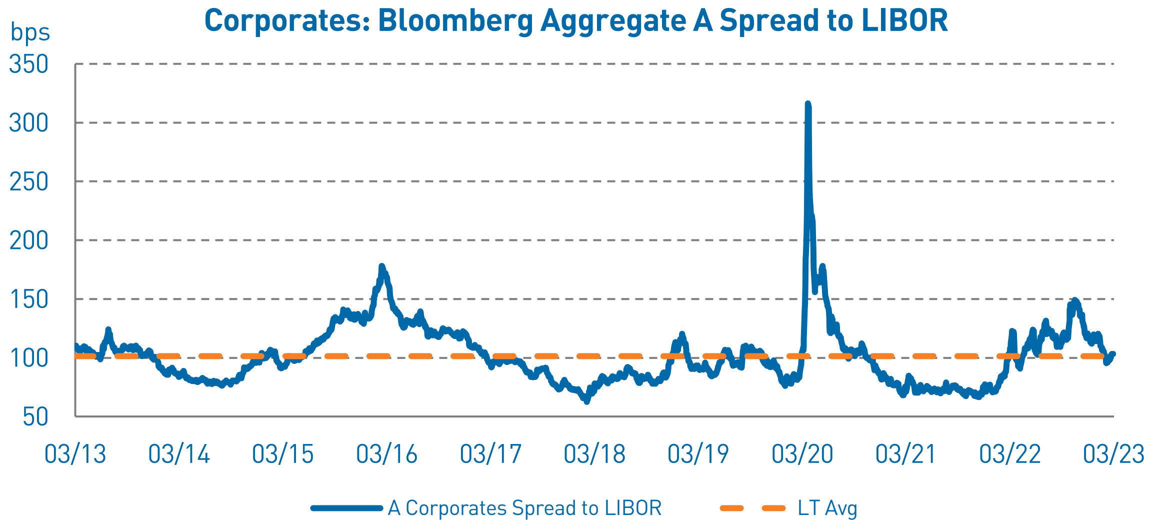


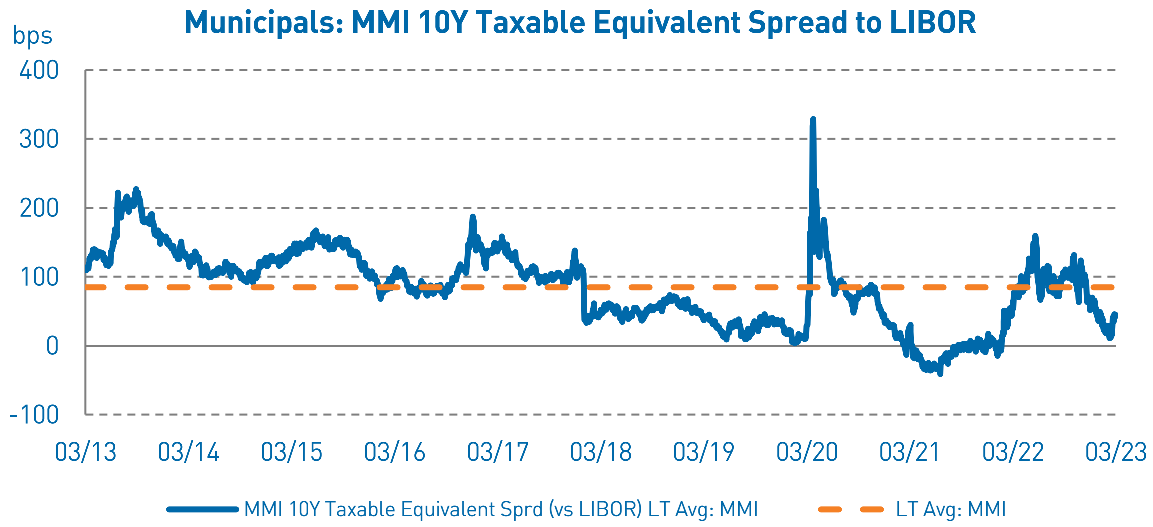


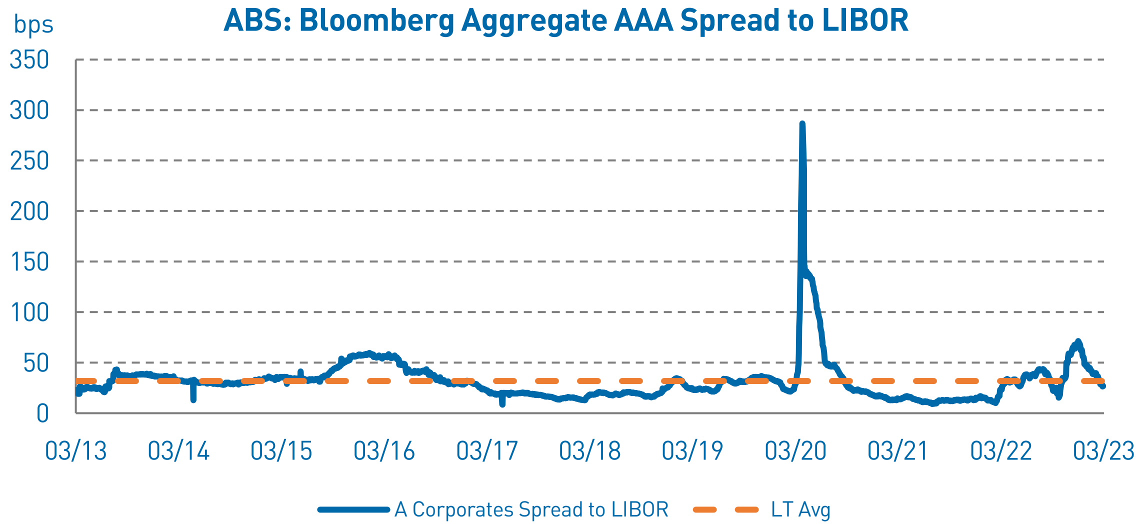
– Sources (top-left to bottom-right): PNC/10Ks/SNL; PNC/10Ks; PNC; 10K
– Securities in all charts reflect book value. Securities as a % of Deposits uses book value of securities and deposits as reported by SNL. PNC acquired approximately $17.7 bn (book value) of securities and $10 bn of swaps via the BBVA acquisition in June 2021 and the black box is provided for illustrative purposes regarding the securities and swaps from BBVA. Cumulative projected runoff calculated along market implied forward interest rates as of 12/31/2022, and captures scheduled principal payments, contractual maturities, and projected prepayments using internally validated models/assumptions

Relative value in fixed income markets





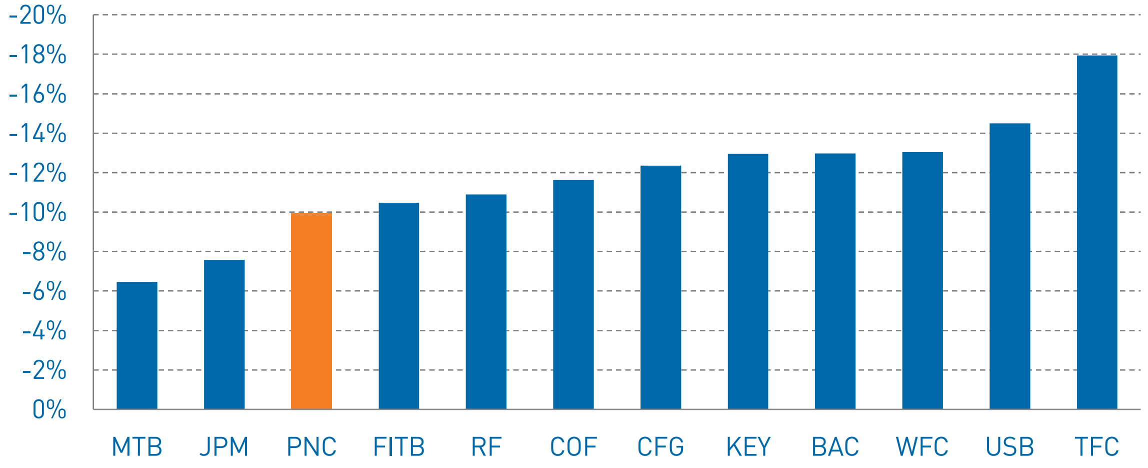




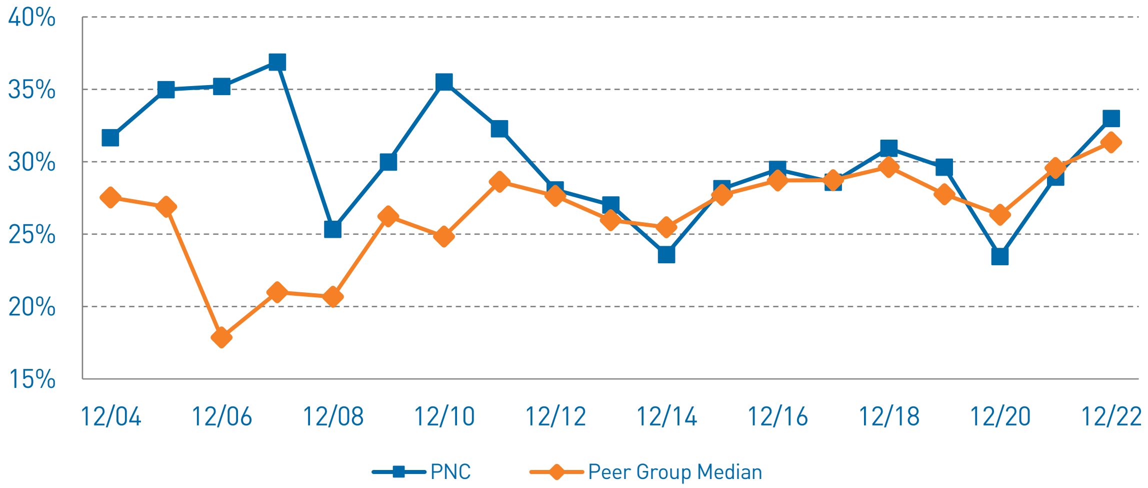
- Sources (top-left to bottom-right): JPM DataQuery; BBG; BBG/PNC; BBG
- LIBOR/SOFR spreads were applied to time series that changed, Corporates and ABS, from being quoted to LIBOR to SOFR after November 2021
- For Municipals, Bloomberg provides tax-exempt yields and to be make it tax-equivalent, the tax-exempt yields are divided by (1- tax rate) to make it tax-equivalent. We use 35% for all dates pre-2018 and 21% after. The market convention is to quote these versus Treasuries so a 10Y UST/LIBOR swap spread was applied to convert the spread

Peer bank analysis

Investment Securities Value Decline



Securities as a % of Deposits



Peer Banks' Securities Portfolio Composition

Bank	USTs	Agencies	Private Label
PNC	29%	59%	12%
JPM	47%	34%	19%
BAC	33%	65%	3%
WFC	15%	65%	20%
USB	10%	81%	9%
COF	6%	93%	2%
TFC	8%	89%	3%
FITB	5%	75%	20%
RF	4%	92%	4%
MTB	36%	52%	11%
KEY	17%	81%	3%
CFG	10%	84%	6%
Average	18%	72%	9%
Median	13%	78%	8%

Peer Banks' Disclosed Securities Portfolio Durations

Bank	2016	2017	2018	2019	2020	2021	2022	YoY Chg
PNC	3.00	3.20	3.40	2.60	2.60	3.70	4.50	0.80
TFC	4.72	4.62	4.72	4.70	4.00	5.80	6.70	0.90
FITB	4.90	4.70	5.00	5.10	4.40	4.80	5.40	0.60
RF	4.30	4.30	4.20	4.20	4.00	4.25	4.81	0.56
KEY	NA	4.00	4.10	3.80	4.90	4.10	5.60	1.50
CFG	4.30	3.90	4.40	3.70	2.70	4.30	5.80	1.50
Average	4.24	4.12	4.30	4.02	3.77	4.49	5.47	0.98
Median	4.30	4.15	4.30	4.00	4.00	4.28	5.50	0.85
10yr Swap Rate (%)	2.32	2.40	2.72	1.88	0.93	1.56	3.84	228 bps

- Sources (top-left to bottom-right): 10Ks/PNC; FR Y-9Cs via SNL; SNL; 10Ks/earnings presentations
- Investment securities value decline uses the unrealized gain/loss on AFS and HTM Securities + estimated pre-tax gain/loss on securities transferred from AFS to HTM that is hung-up in AOCI, and are as of 4Q 2022
- Peer banks' securities portfolio composition as of 4Q 2022. Peer banks' securities portfolio durations are as of year end points, and for TFC, securities portfolio durations reflect those of BBT prior to 4Q 2019 (TFC is the merger of BBT and STI). 2022 KEY securities portfolio duration reflects AFS securities only

Appendix: **Cautionary Statement Regarding Forward-Looking Information**

We make statements in this presentation, and we may from time to time make other statements, regarding our outlook for financial performance, such as earnings, revenues, expenses, tax rates, capital and liquidity levels and ratios, asset levels, asset quality, financial position, and other matters regarding or affecting us and our future business and operations, including our sustainability strategy, that are forward-looking statements within the meaning of the Private Securities Litigation Reform Act. Forward-looking statements are typically identified by words such as “believe,” “plan,” “expect,” “anticipate,” “see,” “look,” “intend,” “outlook,” “project,” “forecast,” “estimate,” “goal,” “will,” “should” and other similar words and expressions.

Forward-looking statements are necessarily subject to numerous assumptions, risks and uncertainties, which change over time. Future events or circumstances may change our outlook and may also affect the nature of the assumptions, risks and uncertainties to which our forward-looking statements are subject. Forward-looking statements speak only as of the date made. We do not assume any duty and do not undertake any obligation to update forward-looking statements. Actual results or future events could differ, possibly materially, from those anticipated in forward-looking statements, as well as from historical performance. As a result, we caution against placing undue reliance on any forward-looking statements.

Our forward-looking statements are subject to the following principal risks and uncertainties.

- Our businesses, financial results and balance sheet values are affected by business and economic conditions, including:
  - Changes in interest rates and valuations in debt, equity and other financial markets,
  - Disruptions in the U.S. and global financial markets,
  - Actions by the Federal Reserve Board, U.S. Treasury and other government agencies, including those that impact money supply, market interest rates and inflation,
  - Changes in customer behavior due to changing business and economic conditions or legislative or regulatory initiatives,
  - Changes in customers’, suppliers’ and other counterparties’ performance and creditworthiness,
  - Impacts of tariffs and other trade policies of the U.S. and its global trading partners,
  - The impact of the Russia-Ukraine conflict, and associated sanctions or other actions in response, on the global and U.S. economy,
  - The length and extent of the economic impacts of the COVID-19 pandemic, including those arising from actions taken to mitigate and manage it,
  - Impacts of changes in federal, state and local governmental policy, including on the regulatory landscape, capital markets, taxes, infrastructure spending and social programs,
  - PNC’s ability to attract, recruit and retain skilled employees, and
  - Commodity price volatility..

Appendix: **Cautionary Statement Regarding Forward-Looking Information**

- Our forward-looking financial statements are subject to the risk that economic and financial market conditions will be substantially different than those we are currently expecting and do not take into account potential legal and regulatory contingencies. These statements are based on our views that:
  - The economy continues to expand in early 2023, but economic growth is slowing in response to the ongoing Federal Reserve monetary policy tightening to slow inflation. This has led to large increases in both short-and long-term interest rates. With much higher mortgage rates the housing market is already in contraction, with steep drops in existing home sales and single-family housing starts, and a modest decline in house prices. Other sectors where interest rates play an outsized role, such as business investment and consumer spending on durable goods, will contract in 2023.
  - PNC's baseline outlook is for a recession starting in the second half of 2023, with real GDP contracting a modest 1% before recovery starts in early 2024 as the Federal Reserve lowers interest rates in response to a deteriorating labor market and slower inflation. The unemployment rate will increase throughout 2023, peaking at above 5% in the first half of 2024. Inflation will slow with the recession and be back to the Federal Reserve's 2% long-term objective by early 2024.
  - PNC expects the FOMC to increase the federal funds rate by 25 basis points in March, and then raise it by a further 25 basis points in May. This would bring the federal funds rate to a range of 5.00% to 5.25% by early-May. PNC expects a federal funds rate cut of 25 basis points in early 2024 as inflation moves toward the FOMC's 2% long-term objective.
- PNC's ability to take certain capital actions, including returning capital to shareholders, is subject to PNC meeting or exceeding an SCB established by the Federal Reserve Board in connection with the Federal Reserve Board's CCAR process.
- PNC's regulatory capital ratios in the future will depend on, among other things, the company's financial performance, the scope and terms of final capital regulations then in effect and management actions affecting the composition of PNC's balance sheet. In addition, PNC's ability to determine, evaluate and forecast regulatory capital ratios, and to take actions (such as capital distributions) based on actual or forecasted capital ratios, will be dependent at least in part on the development, validation and regulatory review of related models and the reliability of and risks resulting from extensive use of such models.
- Legal and regulatory developments could have an impact on our ability to operate our businesses, financial condition, results of operations, competitive position, reputation or pursuit of attractive acquisition opportunities. Reputational impacts could affect matters such as business generation and retention, liquidity, funding, and ability to attract and retain management. These developments could include:

Appendix: **Cautionary Statement Regarding Forward-Looking Information**

  - Changes to laws and regulations, including changes affecting oversight of the financial services industry, consumer protection, bank capital and liquidity standards, pension, bankruptcy and other industry aspects, and changes in accounting and reporting standards.
  - Unfavorable resolution of legal proceedings or other claims and regulatory and other governmental investigations or other inquiries resulting in monetary losses, costs, or alterations in our business practices, and potentially causing reputational harm to PNC.
  - Results of the regulatory examination and supervision process, including our failure to satisfy requirements of agreements with governmental agencies.
  - Costs associated with obtaining rights in intellectual property claimed by others and of adequacy of our intellectual property protection in general.
- Business and operating results are affected by our ability to identify and effectively manage risks inherent in our businesses, including, where appropriate, through effective use of systems and controls, third-party insurance, derivatives and capital management techniques, and to meet evolving regulatory capital and liquidity standards.
- Our reputation and business and operating results may be affected by our ability to appropriately meet or address environmental, social or governance targets, goals, commitments or concerns that may arise.
- We grow our business in part through acquisitions and new strategic initiatives. Risks and uncertainties include those presented by the nature of the business acquired and strategic initiative, including in some cases those associated with our entry into new businesses or new geographic or other markets and risks resulting from our inexperience in those new areas, as well as risks and uncertainties related to the acquisition transactions themselves, regulatory issues, and the integration of the acquired businesses into PNC after closing or any failure to execute strategic or operational plans.
- Competition can have an impact on customer acquisition, growth and retention and on credit spreads and product pricing, which can affect market share, deposits and revenues. Our ability to anticipate and respond to technological changes can also impact our ability to respond to customer needs and meet competitive demands.
- Business and operating results can also be affected by widespread natural and other disasters (including severe weather events), health emergencies, dislocations, geopolitical instabilities or events, terrorist activities, system failures or disruptions, security breaches, cyberattacks, international hostilities, or other extraordinary events beyond PNC's control through impacts on the economy and financial markets generally or on us or our counterparties, customers or third-party vendors and service providers specifically.

We provide greater detail regarding these as well as other factors in our 2022 Form 10-K, including in the Risk Factors and Risk Management sections and the Legal Proceedings and Commitments Notes of the Notes To Consolidated Financial Statements in those reports, and in our other subsequent SEC filings. Our forward-looking statements may also be subject to other risks and uncertainties, including those we may discuss elsewhere in this news release or in our SEC filings, accessible on the SEC's website at www.sec.gov and on our corporate website at www.pnc.com/secfilings. We have included these web addresses as inactive textual references only. Information on these websites is not part of this document.

Appendix: **Federal Reserve Balance Sheet**

Period End, $ billions	2017	2018	2019	2020	2021	2022	Projections 2023Q1	2023Q2	2023Q3	2023Q4
Total Assets	**$4,496**	**$4,123**	**$4,214**	**$7,411**	**$8,806**	**$8,601**	***$8,287***	***$7,992***	***$7,697***	***$7,402***
Treasuries	$2,454	$2,241	$2,329	$4,689	$5,652	$5,501	*$5,321*	*$5,141*	*$4,961*	*$4,781*
MBS	$1,765	$1,637	$1,420	$2,039	$2,615	$2,641	*$2,536*	*$2,431*	*$2,326*	*$2,221*
Lending Facilities	$0	$0	$0	$139	$74	$42	*$30*	*$20*	*$10*	*$0*
Other Assets	$277	$245	$465	$544	$464	$417	*$400*	*$400*	*$400*	*$400*
Total Liabilities/Equity	**$4,496**	**$4,123**	**$4,214**	**$7,411**	**$8,806**	**$8,601**	***$8,287***	***$7,992***	***$7,697***	***$7,402***
Currency	$1,616	$1,716	$1,802	$2,087	$2,236	$2,307	*$2,327*	*$2,340*	*$2,348*	*$2,350*
TGA	$186	$368	$352	$1,614	$284	$410	*$300*	*$150*	*$250*	*$500*
RRP	$387	$245	$253	$210	$1,921	$2,627	*$2,470*	*$2,323*	*$2,175*	*$2,028*
Reserves	$2,176	$1,661	$1,648	$3,143	$4,040	$2,980	*$2,940*	*$2,929*	*$2,674*	*$2,274*
Other Liabilities/Equity	$130	$133	$158	$358	$325	$277	*$250*	*$250*	*$250*	*$250*

- Assumes $95bn/month runoff through 2023
- TGA assumed to be drawn down to $150bn before being built back up to $500bn by year end
- Currency assumed to grow with Nominal GDP
- Source: FRB

Appendix: **Commercial Bank Balance Sheets**

Period End, $ billions	2016	2017	2018	2019	2020	2021	2022 Q1	2022 Q2	2022 Q3	2022 Q4
Total Assets	**$16,050**	**$16,769**	**$17,012**	**$17,810**	**$20,540**	**$22,741**	**$22,744**	**$22,610**	**$22,758**	**$23,029**
Securities	$3,325	$3,447	$3,509	$3,842	$4,713	$5,706	$5,823	$5,748	$5,634	$5,519
Loans	$8,807	$9,150	$9,619	$10,075	$10,392	$10,768	$10,934	$11,387	$11,667	$12,054
Cash	$2,215	$2,407	$1,917	$1,784	$3,186	$4,129	$3,767	$3,206	$3,201	$3,191
Other Assets	$1,702	$1,766	$1,967	$2,110	$2,250	$2,138	$2,220	$2,270	$2,256	$2,264
Total Liabilities/Equity	**$16,050**	**$16,769**	**$17,012**	**$17,810**	**$20,540**	**$22,741**	**$22,744**	**$22,610**	**$22,758**	**$23,029**
Deposits	$11,555	$12,060	$12,495	$13,299	$16,186	$18,093	$18,165	$17,978	$17,874	$17,916
Borrowings	$1,952	$2,081	$1,947	$1,965	$1,682	$1,656	$1,617	$1,648	$1,707	$1,872
Other Liabilities/Equity	$2,543	$2,629	$2,571	$2,547	$2,671	$2,992	$2,962	$2,984	$3,177	$3,241
Cash/Total Assets	13.8%	14.4%	11.3%	10.0%	15.5%	18.2%	16.6%	14.2%	14.1%	13.9%
Deposits/Total Liab. + Equity	72.0%	71.9%	73.4%	74.7%	78.8%	79.6%	79.9%	79.5%	78.5%	77.8%

– Source: FRB