Second-Quarter U.S. Economic Update
August 2023

Summary of Recent Economic and Market Developments

Real GDP grew 2.4% in the second quarter and 2.2% in the first half, both better than prior expectations. Employment gains slowed and job openings declined but remain elevated. Real personal consumption expenditures slipped to 1.6% in Q2 from 4.2% in Q1 on a big drop in goods spending and a modest pullback in services. Home sales fell after a strong rebound in Q1, and residential investment continued to shrink. Industrial output rose slightly but core order growth remained negative after inflation. Real business investment rose substantially as capital equipment spending rebounded and structures investment remained strong. The GDP contributions from trade and inventories netted to zero, while government consumption grew moderately. Private domestic final sales rose 2.3%, down from 3.2% in Q1.

Inflation finally showed signs of broad-based improvement in the second quarter. Goods inflation slowed, and services inflation showed tentative signs of cooling over the last several months. However, a tight labor market and still-strong demand for workers drove only a limited slowdown in wage growth to around 4.5%, which is too high to be consistent with a 2% inflation target. We anticipate that moderating economic and employment growth will dampen wage gains, allowing service prices to slow gradually.

The Federal Reserve continued to tighten monetary policy but slowed the pace of its actions. With the fed funds target currently 5.25-5.50%, market forward rates price in about a 40% chance of one more 25 bp rate hike and rates holding that plateau into 2Q2024. The market expects rate cuts will begin during that quarter. Treasury yields rose and the yield curve steepened as the market priced in a "higher for longer" rate view and prospects for more Treasury debt supply. Credit spreads tightened as banking turmoil diminished, but higher Treasury rates left preferred yields flat to moderately higher.

We continue to expect a downshift in growth that leads to a mild recession starting in Q4, gradually falling inflation, and rate cuts beginning around mid-2024. Of course, there is risk that economic growth remains resilient and inflation improvement stalls or reverses. That would likely prompt additional Fed tightening and higher yields. Nonetheless, short- and long-term interest rates have risen considerably in recent months, and they are close to our own forecasts now. Consequently, we think today's yields may offer an attractive entry point for long-term investors.

Economic Outlook

Figure 1: U.S. Gross Domestic Product

	Real GDP *(QoQ%, AR; *Q4/Q4)*				***Nominal GDP*** *(QoQ%, AR; *Q4/Q4)*				***Implicit Deflator*** *(AR; *Q4/Q4)*			
Sector	**2023:2**	**2023:1**	**2022***	**2021***	**2023:2**	**2023:1**	**2022***	**2021***	**2023:2**	**2023:1**	**2022***	**2021***
Gross Domestic Product (GDP)	2.4%	2.0%	0.9%	5.7%	4.7%	6.1%	7.3%	12.2%	2.2%	4.0%	6.4%	6.1%
Personal Consumption Expenditures	1.6%	4.2%	1.7%	7.2%	4.3%	8.4%	7.5%	13.2%	2.6%	4.1%	5.7%	5.7%
PCE: Goods	0.7%	6.0%	-0.8%	7.1%	1.1%	6.8%	5.4%	15.6%	0.4%	0.7%	6.2%	7.9%
PCE: Services	2.1%	3.2%	3.0%	7.2%	6.0%	9.3%	8.5%	12.0%	3.8%	5.9%	5.4%	4.5%
Fixed Investment	4.9%	-0.4%	-2.0%	3.7%	5.7%	4.4%	5.8%	9.8%	0.7%	4.9%	8.0%	5.9%
Business Investment	7.7%	0.6%	4.5%	5.0%	8.9%	7.8%	11.4%	8.5%	1.2%	7.2%	6.6%	3.3%
Structures	9.7%	15.8%	-1.7%	-5.2%	13.5%	25.8%	13.4%	4.7%	3.5%	8.6%	15.4%	10.4%
Equipment	10.8%	-8.9%	3.9%	4.7%	9.2%	-2.0%	11.4%	7.2%	-1.4%	7.6%	7.2%	2.4%
Intellectual Property	3.9%	3.1%	8.2%	10.8%	6.4%	9.4%	10.5%	11.6%	2.5%	6.1%	2.2%	0.7%
Residential Investment	-4.2%	-4.0%	-18.8%	-0.3%	-4.8%	-6.3%	-9.3%	13.6%	-0.7%	-2.5%	11.7%	13.9%
Government Consumption	2.6%	5.0%	0.9%	0.5%	3.0%	6.7%	7.7%	7.3%	0.4%	1.6%	6.8%	6.7%
Federal	0.9%	6.0%	0.1%	0.4%	3.5%	9.4%	5.0%	4.6%	2.6%	3.2%	4.9%	4.3%
State & Local	3.6%	4.4%	1.3%	0.6%	2.7%	5.1%	9.4%	9.0%	-0.9%	0.7%	8.0%	8.3%
Domestic Final Sales	2.3%	3.5%	0.9%	5.4%	4.3%	7.5%	7.2%	11.6%	1.9%	3.8%	6.3%	5.9%
Private Domestic Final Sales	2.3%	3.2%	0.9%	6.4%	4.6%	7.6%	7.1%	12.5%	2.2%	4.3%	6.2%	5.7%

Legend for all Figures: AR = Annual Rate; SA = Seasonally Adjusted; MA = Moving Average; C.O.P. = Change over Period
Data source for all tables is Macrobond, unless noted otherwise. Green (red) shading denotes improving (worsening) values.

U.S. economic growth accelerated in the second quarter and substantially exceeded expectations in the first half of 2023. Nominal gross domestic product continued to slow, but after inflation, real GDP accelerated to 2.4% in Q2 (Figure 1) and 2.2% in the first half of 2023 ("H1"). That compares to economists' consensus real GDP forecast in February of just 0.8% in H1.[1] Real personal consumption expenditure (PCE) slowed following a very strong Q1, but it was up a solid 2.9% in H1. Real residential investment declined at about the same pace as in Q1. Business investment rebounded strongly on higher equipment spending after an outsized decline in Q1. Real government consumption decelerated, led by a large drop in federal spending. Trade was a small positive to real GDP in Q2 while inventories were a small negative, leaving no net contribution to growth from those two sectors. Real private domestic final sales slowed a little in Q2 but were up 2.8% in H1, well ahead of its pace in 2022. The implicit deflator slowed in every sector except residential investment, where prices fell less rapidly than in Q1 (right box in Figure 1). While it does not mean inflation is slayed, a sea of green highlights inflation's broad-based improvement in Q2.

Looking ahead, economists expect GDP growth to slow from the H1 pace, but they do not forecast recession. The latest *Survey of Professional Forecasters* shows a median forecast for U.S. real GDP growth of 1.9% in Q3, 1.2% in Q4, and an average growth rate of 1.3% in 2024.[2] While the 2024 growth forecast is only 0.3% higher than last quarter's survey, Q3 and Q4 forecasts are each roughly 1.3% higher—a major revision. Inflation forecasts are little changed, with core PCE inflation expected to fall to 2.8% in Q4 and average about 2.4% in 2024 before arriving at or near the Fed's 2.0% target in 2025.

[1] Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters*, February 10, 2023

[2] Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters*, August 11, 2023.

Our economic outlook is largely unchanged from our previous Update,[3] although some of the crosscurrents we discussed then are now tilting in the direction of decelerating growth and inflation. We continue to think *nominal* GDP growth will slow as consumers deplete savings from the pandemic and reduce spending, but resilient employment and gradually falling inflation should allow real GDP to expand modestly through Q3. Indeed, July's retail sales report suggests PCE got off to a good start in Q3. However, tight monetary policy, a resumption of federal student loan payments, and slower investment should reduce consumer and business spending and push up unemployment. Residential investment should continue to contract in the face of limited supply and high mortgage rates. Business structures spending could keep business investment growing slightly, but with borrowing costs up significantly and exports falling, business equipment spending should turn negative soon. Finally, federal government spending should slow modestly beginning in Q4. We believe the economy will slip into a mild recession starting in Q4.

Inflation is finally showing signs of broad-based improvement. Goods inflation has slowed convincingly as goods consumption cooled and supply chain bottlenecks diminished. Employment growth has slowed and unfilled jobs are down, but unemployment remains near historic lows and employment costs are still rising about 4.5%. However, services inflation has shown tentative signs of slowing recently. If we are right about moderating growth and employment, service prices should continue to slow gradually.

As a result, we believe the Fed is probably done hiking rates in this cycle, although there is still risk that one or two more hikes will be needed if inflation does not cooperate. Even if our base case forecast is correct, however, the Fed likely will leave rates at the terminal rate for an extended period, reflecting the resilience of growth and inflation. We expect rate cuts to begin around mid-2024 (slightly later than current market expectations), when we core PCE inflation should be near 3%.

Both short- and long-term interest rates have risen considerably since we last wrote in June, and they are not far from our own forecasts now. With growth risks still skewed to the upside over the next several quarters, rates may move a bit higher, but today's yields may offer an attractive entry point for long-term investors.

[3] Flaherty & Crumrine *First-Quarter U.S. Economic Update*, June 5, 2023.

Employment, Income and Spending

Figure 2: Employment Overview

Employment *(Thousands except percents)*	**MoMΔ** (Level for Rates) Jul-23	Jun-23	May-23	**QoQ Change** 2023:2	2023:1	2022:4	**YoY% Change** Jul-23	Jun-23	**Chg vs.** Feb-20
Nonfarm Payrolls	187	185	281	683	937	853	2.2%	2.5%	3,971
Private	172	128	255	562	703	759	2.2%	2.4%	4,141
Household Employment	268	273	(310)	102	1,648	394	1.8%	1.8%	2,513
Labor Participation Rate	62.6%	62.6%	62.6%	0.0%	0.3%	0.0%	0.5%	0.4%	0.0%
Unemployment Rate	3.5%	3.6%	3.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

Average Hourly Earnings	**MoM% Change** Jul-23	Jun-23	May-23	**QoQ% Change** (AR) 2023:2	2023:1	2022:4	**YoY% Change** Jul-23	Jun-23	Feb-20
Average Hourly Earnings, All	0.42%	0.45%	0.33%	4.9%	3.4%	4.9%	4.4%	4.4%	3.1%

Employment Cost Index	**QoQ% Chg** (SA, not annualized) 2023:2	2023:1	2022:4	2022:3	**YoY% Change** (NSA) 2023:2	2023:1	2022:4	2022:3	2019:4
Wages & Salaries, Civilian	1.0%	1.2%	1.2%	1.3%	4.6%	5.0%	5.1%	5.1%	2.9%

The **labor market** cooled moderately in the second quarter (Figure 2). Nonfarm payroll growth averaged 228,000 jobs per month in Q2, down from 312,000 per month in Q1, and slipped to 187,000 in July. The unemployment rate remained low. Job openings declined and the quit rate held about steady (Figure 3). This helped slow average hourly earnings growth from 4.8% YoY in December 2022 to 4.4% YoY in July (Figure 4). Similarly, the employment cost index of wages and salaries also decelerated in Q2. However, wage inflation of around 4.5% remains too high given a 2% inflation target and only modest productivity growth of about 1.4% since the end of the global financial crisis. Job and, especially, wage growth will be key data points for policymakers at the Federal Reserve over the balance of 2023.

Figure 3: Fewer Job Openings and Quits…

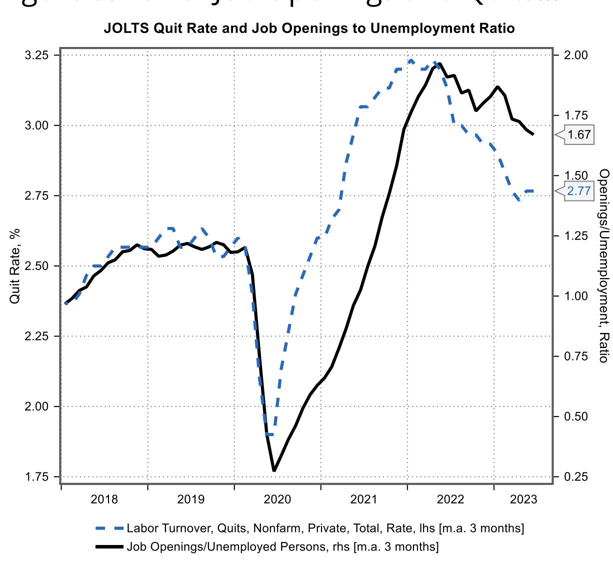


Figure 4: …Driving Modest Wage Slowdown

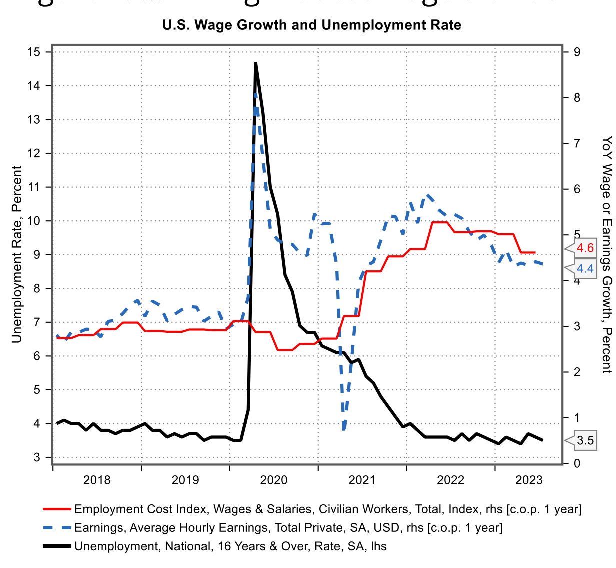


Figure 5: Personal Income and Spending

Personal Income and Consumption	MoM Change			QoQ Change (AR)			YoY Change		
	Jun-23	May-23	Apr-23	2023:2	2023:1	2022:4	2023:2	2023:1	2022:2
Personal Income	0.31%	0.46%	0.25%	4.3%	5.1%	5.0%	5.5%	5.6%	3.2%
Wages & Salaries	0.57%	0.54%	0.50%	5.5%	4.7%	1.9%	5.8%	5.7%	9.1%
Real Disposable Pers. Inc.	0.18%	0.40%	-0.03%	2.5%	8.5%	2.5%	4.1%	2.9%	-5.7%
ex Transfer Payments	0.22%	0.36%	0.04%	2.2%	0.7%	0.0%	1.8%	0.9%	0.4%
Nominal PCE	0.55%	0.18%	0.61%	4.3%	8.4%	4.8%	6.0%	7.3%	9.2%
excl. Food & Energy	0.59%	0.37%	0.66%	5.0%	10.3%	5.3%	7.1%	7.9%	8.2%
Goods	0.81%	-0.29%	0.93%	1.1%	6.8%	-0.6%	2.4%	4.0%	7.7%
Services	0.42%	0.42%	0.45%	6.0%	9.3%	7.7%	8.0%	9.1%	10.0%
Real PCE	0.39%	0.05%	0.27%	1.6%	4.2%	1.0%	2.3%	2.4%	2.4%

Personal income slowed in both nominal and real terms in Q2 following Q1's outsized cost of living adjustments (COLA) to Social Security and other government transfer payments (Figure 5). Continued job and wage growth delivered solid gains in wage and salary income, however. Looking at year-over-year data, income growth has remained steady while spending growth has slowed (Figure 6). Although we expect nominal income growth to cool along with employment and wages, real incomes should benefit from falling inflation.

Figure 6: Spending Slowed, Income Steady

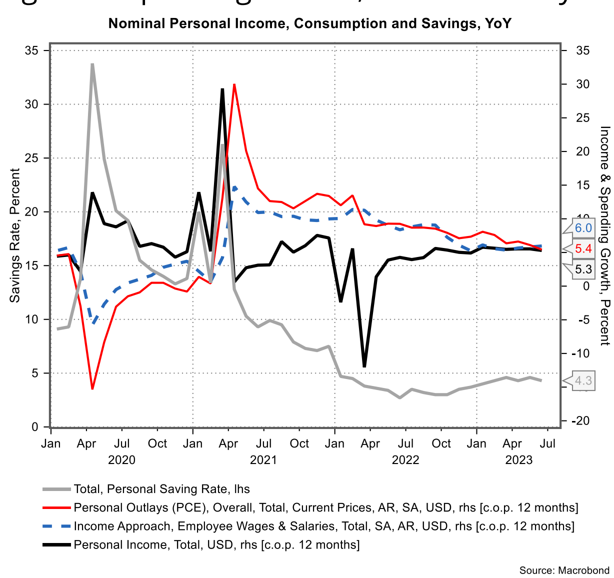
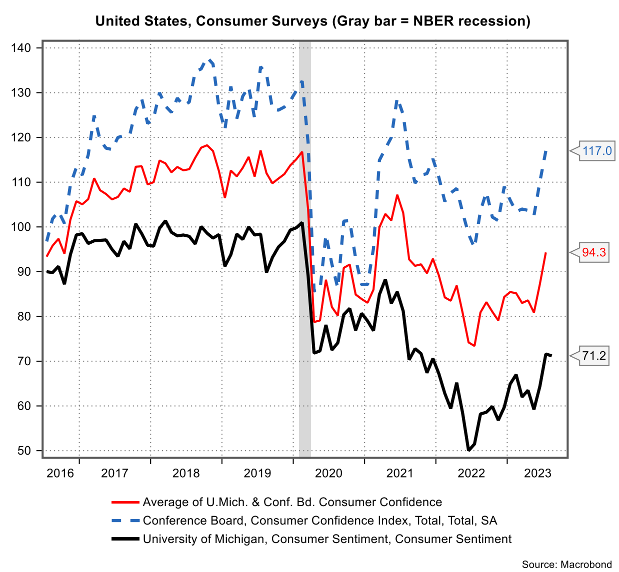


Figure 7: Consumer Confidence Rising



Nominal **personal consumption expenditure** (PCE) slowed sharply in the second quarter as a Q1's COLA-induced surge in goods spending ebbed (Figure 5). Services spending also slowed but was still up 6.0% during the quarter. Adjusted for inflation, real PCE eased to 1.6% from 4.2% in Q1, for an average of 2.9% in the first half of 2023, which remains above trend. With personal income and spending growth about equal in Q2, the **personal saving rate** was little changed, averaging 4.4% during the quarter. We expect the saving rate to drift up over time, though, as explained below, it may dip in the closing months of the year.

So far, PCE has remained resilient. July's advance retail sales report suggests spending got off to a strong start in Q3. Consumer confidence has rebounded (Figure 7). A strong job market and higher wages have boosted wage and salary income, and investment income has benefitted from higher interest rates and, more recently, higher stock prices. Of course, higher interest rates also raise borrowing costs, but with most U.S. home mortgages fixed-rate, it will take time for higher interest rates to eat into disposable income. Each of these has contributed to ongoing consumption despite credit headwinds.

An important change ahead, however, is the resumption in September of interest accrual on federal student loans that has been waived since early in the pandemic. While some borrowers will use already-accumulated savings to repay student loan principal or interest, many will have to divert disposable income from saving and spending, which could slow PCE growth and reduce the saving rate, at least until budgets rebalance. Those adjustments could have a meaningful impact on GDP growth if they happen quickly, with Q4 most at risk given that payments resume in October. Moreover, several studies by the Federal Reserve estimate that excess savings from the pandemic have been mostly or entirely depleted.[4] As higher interest rates gradually raise household interest expenses and employment growth slows, we expect slower PCE, a rising saving rate, and weaker economic growth.

Which brings us to the question of recession. Since June 2022, we have observed that the index of leading economic indicators had dropped below the level that has historically signaled a recession in about six months. Since then, it has fallen further without a recession. Given the massive boost to personal savings from fiscal and monetary policy during and after the pandemic—savings that later supported consumer spending and employment—we are not surprised that the economy continues to grow. However, with monetary policy now restrictive, fiscal policy turning in that direction too, and savings much reduced, we anticipate a mild recession will begin in Q4.

However, it may not be a traditional recession with two consecutive quarters of negative real GDP growth. The COVID-19 pandemic and its aftermath have already broken the mold of a typical economic cycle. We expect a recession would include a rise in unemployment and a slowdown in wages, but that could happen with near zero real GDP growth or only a short contraction if wage demands retreat quickly as labor demand weakens. Or it could require a deeper or longer contraction. Our broader points are (i) we think wage growth needs to slow to bring down inflation, (ii) higher unemployment is probably needed to accomplish that, and (iii) materially higher unemployment typically leads to recession.

[4] https://www.frbsf.org/economic-research/publications/economic-letter/2023/may/rise-and-fall-of-pandemic-excess-savings/ and https://www.federalreserve.gov/econres/notes/feds-notes/accumulated-savings-during-the-pandemic-an-international-comparison-with-historical-perspective-20230623.html.

The Housing Market

Figure 8: Residential Investment, Home Sales, and Home Prices

Residential Investment	QoQ Change (AR)				YoY Change				
	2023:2	2023:1	2022:4	2022:3	2023:2	2023:1	2022:4	2022:3	2019:4
Nominal Residential Inv, AR	-4.8%	-6.3%	-21.3%	-21.2%	-13.8%	-13.9%	-9.3%	-1.2%	4.5%
Real Residential Inv, AR	-4.2%	-4.0%	-25.1%	-27.1%	-15.8%	-19.0%	-18.8%	-13.0%	2.0%
Implicit Deflator, AR	-0.7%	-2.5%	5.1%	8.1%	2.4%	6.3%	11.7%	13.5%	2.4%

Home Sales & Prices	Sales Level (AR)			QoQ Change (AR)			YoY Change		
	Jun-23	May-23	Apr-23	2023:2	2023:1	2022:4	2023:2	2023:1	2022:4
New + Existing Home Sales (000)	4,857	5,015	4,961	-1.6%	14.9%	-35.9%	-17.2%	-26.4%	-31.3%
Homes available for sale (000)	1,140	1,147	1,099	43.6%	-34.0%	-43.0%	-5.7%	8.9%	1.3%
S&P/Case-Shiller 20-city HPI Chg*	n/a	1.0%	0.9%	6.9%	-2.8%	-7.8%	-2.1%	0.6%	6.6%

* QoQ and YoY change calculated using average index values of April and May for 2023:2

The **housing market** declined for the ninth consecutive quarter, albeit at a moderate pace, in the second quarter. Real residential investment fell 4.2% in Q2 after plunging 18.8% in 2022 (Figure 8). Combined new and existing home sales turned lower again after mild weather and (temporarily) lower mortgage rates boosted sales early in the year (Figure 9). The S&P/Case-Shiller 20-city home price index in May was down 2.1% (not annualized) since peaking in June 2022 and down 1.7% over 12 months ending in May. Affordability recently hit a new low, as higher mortgage rates offset lower home prices (Figure 10), which should keep residential investment muted this year. However, given the low inventory of unsold homes, modest new construction activity, and pent-up demand by homebuyers, prices have begun to rise again. The Case-Shiller index bottomed out in January 2023 and is up 5.1% (not annualized) since then. We expect residential investment to continue to shrink this year, but it should rebound quickly when the interest rate cycle turns—probably in the first half of 2024.

Figure 9: Home Sales Slowed, Prices Turning?

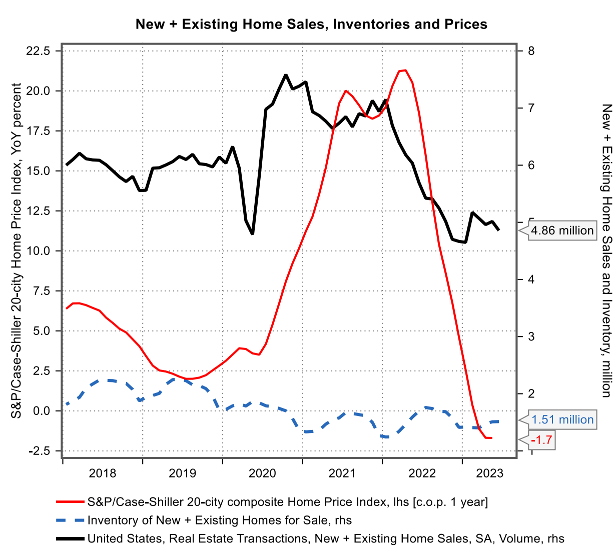
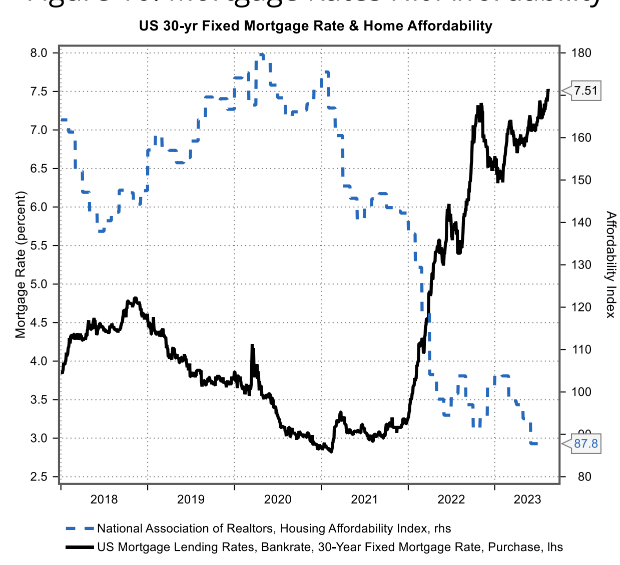


Figure 10: Mortgage Rates Hit Affordability



Business Investment and Industrial Output

Figure 11: Industrial Production, Orders, and Business Investment

	MoM Change			QoQ Change (AR)			YoY Change		
Industrial Output	**Jun-23**	**May-23**	**Apr-23**	**2023:2**	**2023:1**	**2022:4**	**2023:2**	**2023:1**	**2022:2**
Industrial Production	-0.54%	-0.46%	0.60%	0.7%	-0.2%	-2.5%	0.2%	0.7%	3.6%
Manufacturing	-0.32%	-0.10%	1.03%	1.9%	-0.3%	-3.6%	-0.2%	-0.2%	3.3%
	MoM Change			**QoQ Change** (AR)			**YoY Change**		
Mfg Orders & Shipments	**Jun-23**	**May-23**	**Apr-23**	**2023:2**	**2023:1**	**2022:4**	**2023:2**	**2023:1**	**2022:2**
Manufacturing Orders, total	2.32%	0.38%	0.26%	4.7%	-4.0%	-1.2%	-0.5%	2.3%	16.3%
NDCG ex aircraft*	0.14%	0.40%	0.74%	2.4%	2.3%	-1.0%	1.9%	3.3%	7.3%
Real core orders**	0.03%	0.10%	0.65%	-0.2%	-2.6%	-5.1%	-10.0%	-12.2%	-5.6%
Mfg Shipments, NDCG ex air	0.06%	0.29%	0.49%	1.9%	2.3%	5.2%	3.6%	5.6%	11.1%
Real core shipments**	-0.05%	-0.02%	0.40%	-0.7%	-2.6%	0.7%	-3.8%	-4.0%	8.6%

* NDCG = Nondefense Capital Goods   ** NDCG ex aircraft, deflated using PPI Final Demand: Capital Equipment

Business Fixed Investment	**QoQ Change** (AR)				**YoY Change**				
	2023:2	**2023:1**	**2022:4**	**2022:3**	**2023:2**	**2023:1**	**2022:4**	**2022:3**	**2019:4**
Nominal Busi. Investment	8.9%	7.8%	7.7%	14.2%	9.6%	9.6%	11.4%	11.7%	3.5%
Real Business Investment	7.7%	0.6%	4.0%	6.2%	4.6%	2.7%	4.5%	2.4%	2.6%
Implicit Deflator	1.2%	7.2%	3.6%	7.6%	4.8%	6.7%	6.6%	9.1%	1.0%

Industrial production remains sluggish but managed to post a small gain in the second quarter (Figure 11). Very strong civilian aircraft orders lifted overall manufacturing orders significantly, but core orders were soft. After inflation, real core capital goods orders and shipments excluding aircraft were down slightly in the quarter. The ISM manufacturing survey remains at a level normally seen in a recession (Figure 12), but so far one has not materialized. Nonetheless, the downtrends in core orders and exports suggest lower output ahead.

Figure 12: Manufacturing Treading Water

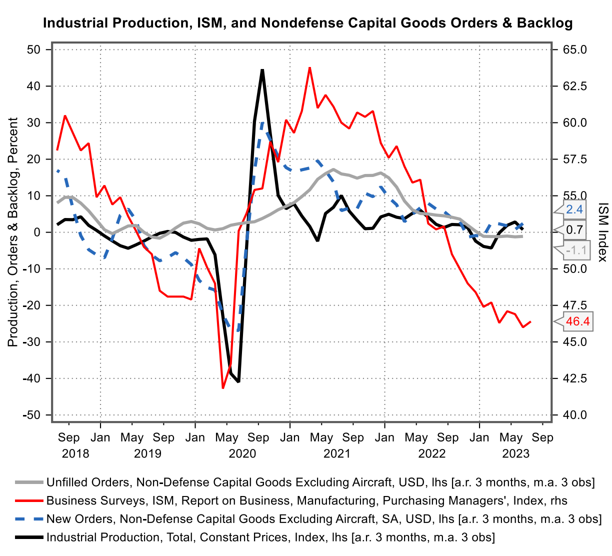
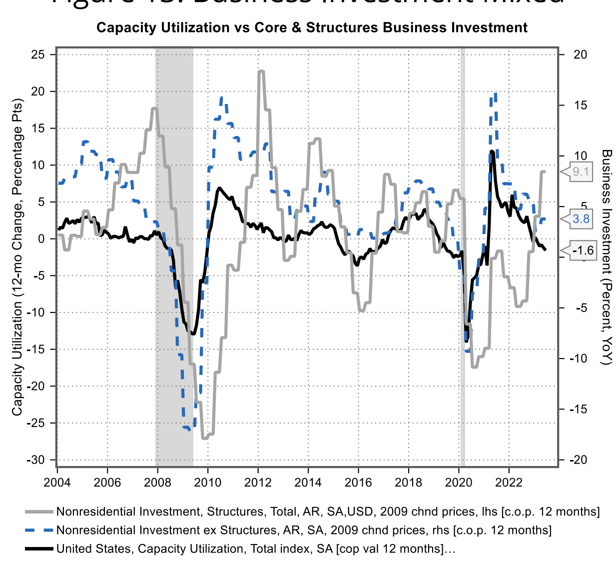


Figure 13: Business Investment Mixed



Business investment has been more resilient than we expected. While YoY core investment in capital equipment and intellectual property slowed in line with declining capacity utilization, investment in structures is booming. (Figure 13). Manufacturing companies are investing in facilities to bring some production back onshore and, where available, take advantage of incentives authorized in the Inflation Reduction Act (IRA) and CHIPS and Science Act of 2022 (CHIPS)—spending that probably has further to run. Non-structures business investment, on the other hand, is likely to slow, given lower capacity utilization, slowing manufacturing orders, and much higher borrowing costs. We expect tepid business investment growth overall, and several negative quarters are possible. Along with residential investment, this is a sector that is feeling a meaningful impact from tighter monetary policy.

International Trade, Inventories, and Government Consumption

Figure 14: Contribution to Change in GDP from Net Exports, Inventories & Government

Contributions to Change in GDP, %	Contribution to QoQ GDP (%, AR) 2023:2	2023:1	2022:4	2022:3	Contribution to Annual GDP (%) 2022	2021	2020	2019
Real GDP	2.40	2.00	2.60	3.20	2.10	5.90	-2.80	2.30
Net Exports	-0.12	0.58	0.42	2.86	-0.40	-1.25	-0.26	-0.11
Private Inventories	0.14	-2.14	1.47	-1.19	0.74	0.24	-0.55	0.05
Government Expenditure & Investment	0.45	0.85	0.65	0.65	-0.10	0.11	0.45	0.58
Federal	0.06	0.38	0.37	0.24	-0.17	0.17	0.41	0.25
State & Local	0.39	0.47	0.29	0.41	0.07	-0.06	0.04	0.32

Government spending made a moderate contribution to second-quarter real GDP growth, while inventories and net exports nearly offset one another (Figure 14). Federal government spending slowed in Q2, albeit from a previously rapid pace. Federal tax receipts were down 10.1% while spending rose 9.8% in the first 10 months of fiscal year 2023. The Treasury has ramped up debt issuance, but the long-term budget outlook is worrisome. State and local spending growth slowed modestly as weaker tax receipts restrained spending.

The **trade deficit** widened slightly and had little impact on GDP in Q2. Import and export volumes continued to decline (Figure 15). Lower imports reflect slower consumer spending and a shift away from goods toward domestically produced services. Export growth has faded as economic growth among trading partners slowed faster than in the U.S.

Figure 15: Trade Volumes Still Sliding

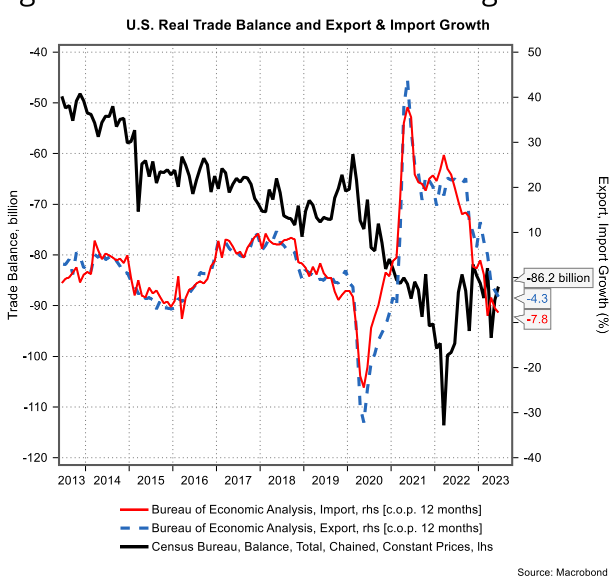
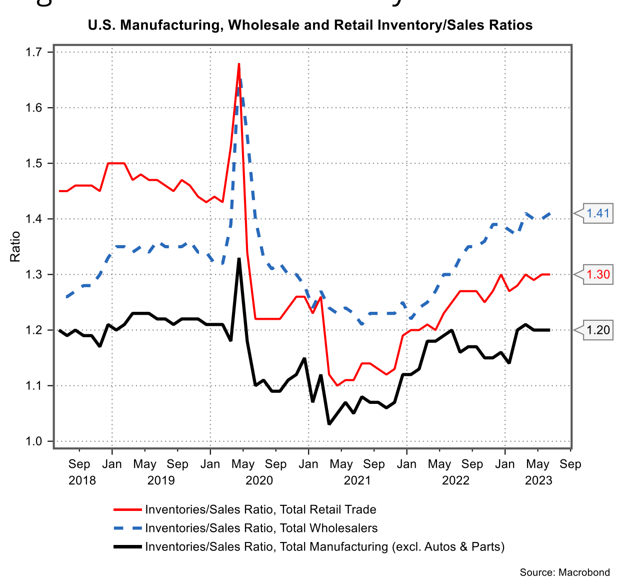


Figure 16: Inventories Mostly back to Normal



Businesses added slightly to **inventory** in Q2, giving GDP a small boost. Sales were mostly in line with inventories, leaving inventory-to-sales little changed and near their pre-pandemic levels —except for retailers, which appear to want to maintain lower inventory ratios (Figure 16). With supply chain disruptions diminishing and credit more expensive and harder to get, businesses likely will look to hold down inventory growth in coming quarters.

Inflation

Figure 17: Inflation Rates

Key Inflation Rates	MoM Change Jul-23	MoM Change Jun-23	MoM Change May-23	QoQ Change (AR) 2023:2	QoQ Change (AR) 2023:1	QoQ Change (AR) 2022:4	YoY Change 2023:2	YoY Change 2023:1	YoY Change 2022:2	YoY Change 2019:4
Consumer Price Index	0.17%	0.18%	0.12%	2.7%	3.8%	4.2%	4.0%	5.8%	8.6%	2.0%
ex food & energy	0.16%	0.16%	0.44%	4.7%	5.0%	5.1%	5.2%	5.6%	6.0%	2.3%
Services ex Shelter	0.17%	0.15%	-0.22%	0.1%	4.4%	4.8%	4.2%	6.7%	6.2%	2.3%
Owners' Equiv. Rent	0.49%	0.45%	0.52%	6.6%	8.5%	8.6%	8.0%	7.9%	5.1%	3.3%
	Jun-23	**May-23**	**Apr-23**	**2023:2**	**2023:1**	**2022:4**	**2023:2**	**2023:1**	**2022:2**	**2019:4**
PPI Final Demand	0.14%	-0.37%	0.06%	-1.6%	0.8%	2.7%	1.0%	4.4%	11.2%	1.1%
ex food & energy	0.12%	0.14%	0.06%	1.0%	2.4%	3.1%	2.7%	4.3%	8.6%	1.4%
	Jul-23	**Jun-23**	**May-23**	**2023:2**	**2023:1**	**2022:4**	**2023:2**	**2023:1**	**2022:2**	**2019:4**
PCE Deflator, total	--	0.16%	0.13%	2.6%	4.1%	3.7%	3.7%	4.9%	6.6%	1.5%
ex food & energy	--	0.17%	0.31%	3.8%	4.9%	4.4%	4.4%	4.7%	5.0%	1.6%
Goods	--	-0.07%	-0.13%	0.4%	0.7%	-0.5%	0.8%	3.3%	10.0%	-0.2%
Services	--	0.28%	0.25%	3.8%	5.9%	6.0%	5.2%	5.6%	4.9%	2.2%
ex energy, housing	--	0.32%	0.35%	5.0%	6.6%	6.8%	6.0%	6.1%	4.7%	2.5%

Inflation finally showed signs of a broader slowdown, with each measure of inflation down from Q1 to Q2 in the table above (Figure 17). Lower energy prices helped push down overall inflation, and core prices also slowed meaningfully (Figure 18). PCE goods inflation slowed to just 0.4%. Services excluding energy and housing fell to 5.0% from well over 6% in earlier quarters, and owners' equivalent rent dropped almost 2% to 6.6%. While inflation remains too high, this is the first evidence of a broad slowdown in prices. Unfortunately, energy prices have increased recently and may limit improvement in inflation for a few months. We also remain watchful of rising wages amid continued strength in hiring, but as noted earlier, we expect slower job growth will weigh on wages over time. In short, it is too soon to declare victory over inflation, but we finally got some better news in the second quarter.

Figure 18: Core Inflation Finally Looking Better

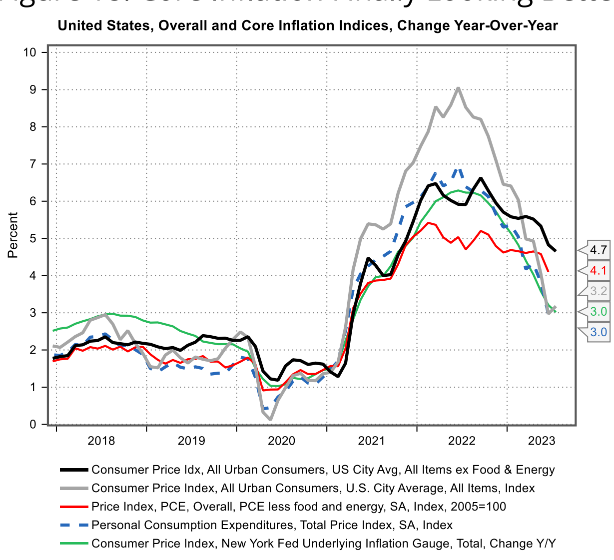
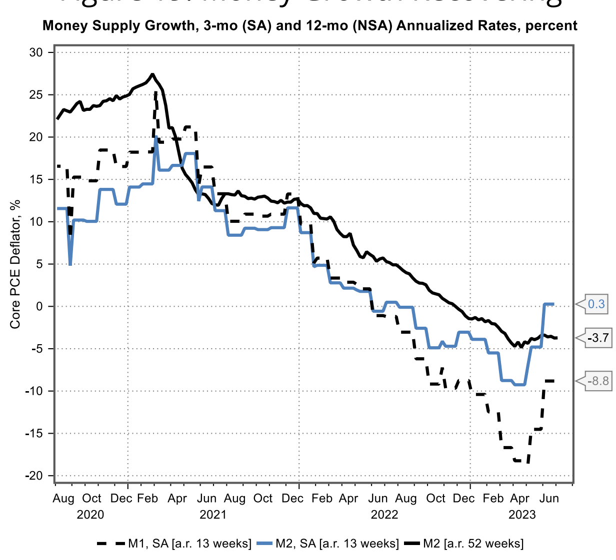


Figure 19: Money Growth Recovering



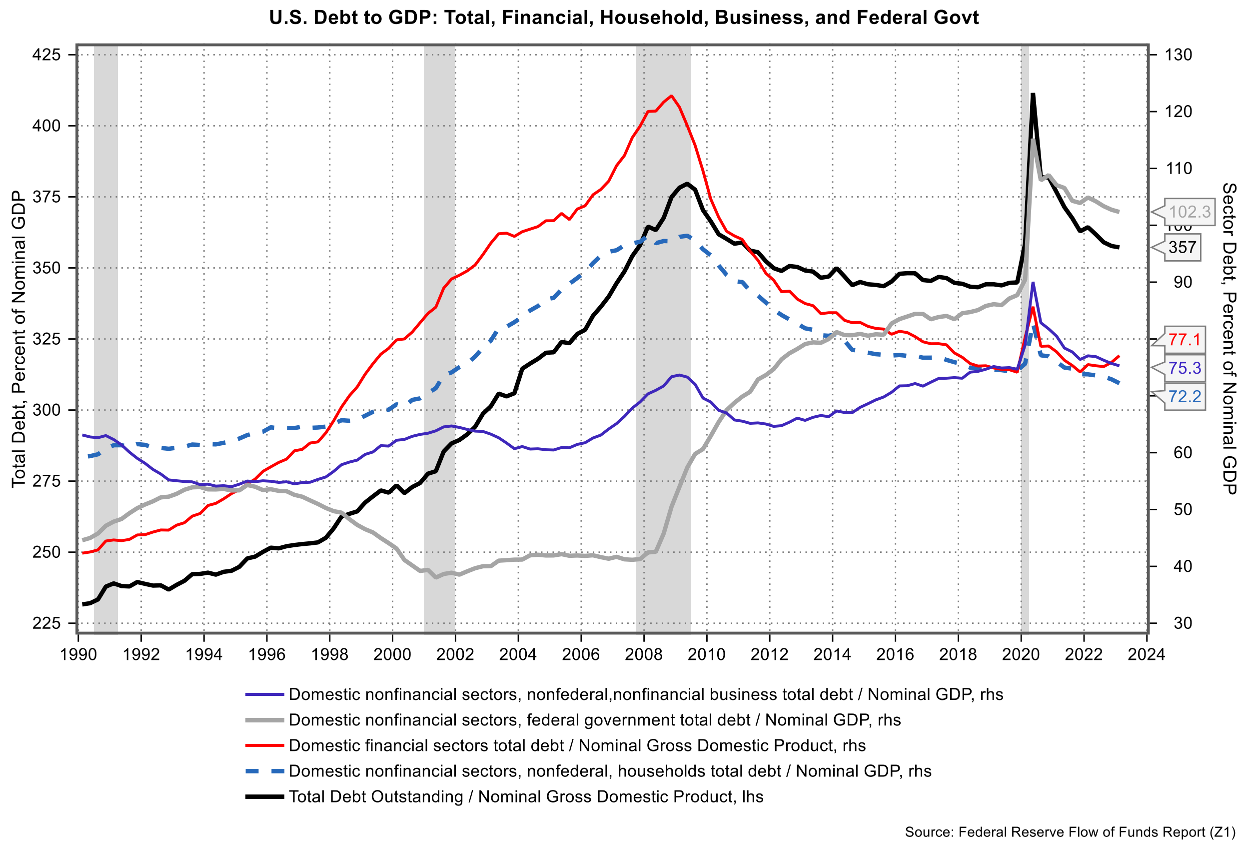
As the Federal Reserve has slowed the pace of monetary tightening, M1 money supply stabilized and M2 rose slightly over the past several months, marking what we believe will be a bottom for money growth in this cycle (Figure 19). Of course, monetary policy remains restrictive, and the Fed continues to reduce its securities holdings. As a result, money growth should remain low, which should reinforce the disinflationary impact of higher borrowing costs and slower economic growth ahead.

An important driver of long-term inflation is productivity. If businesses can raise output with less labor input (i.e., labor productivity is rising), then wages can grow faster than the Fed's inflation target without putting upward pressure on inflation. For example, if productivity increases by 2.2% (the post-World War II average), then wages can increase by 4.2% and be consistent with a 2% inflation target. That happens to be close to the growth rate of both average hourly earnings and the employment cost index over the past year (see Figure 2 again). However, productivity growth has averaged only 1.4% since the end of the global financial crisis, and it was -1.8% in 2022 and -1.2% at an annual rate in 1Q2023—far below productivity gains that would be needed to support current wage growth and 2% inflation.

Encouragingly, productivity jumped 3.7% (AR) in the second quarter. Unfortunately, quarterly productivity is very volatile and not well correlated from one quarter to the next. As a result, we cannot read anything into the Q2 jump in productivity. Moreover, as explained earlier, business investment excluding structures, which helps drive productivity, is likely to slow. We can see productivity returning to its post-GFC average of 1.4% over the next several years, but we think wage growth needs to slow by 1% or more to get long-term inflation down to around 2%.

Aggregate Debt Ratios

Figure 20: Q1 Debt-to-GDP; Private Sector Debt Falling, Federal Debt Set to Rise



Broad **balance sheet trends** through the first quarter of 2023 (latest data available) show lower debt-to-GDP ratios in all borrowing sectors except financials (Figure 20). Overall debt-to-GDP fell to 357%. Federal government debt-to-GDP fell to 102.3% as the Treasury was constrained by the debt ceiling before a deal to raise it was reached at the end of May. The ratio is expected to turn upward again over the coming years given higher interest expense on outstanding debt and a persistent primary budget deficit. Nonfinancial business and household debt ratios continued a modest downward trend, with the latter at its lowest level in 22 years. However, leverage at financial businesses rose by 1.2% to 77.1% of GDP as banking turmoil in Q1 prompted greater bank borrowing. Higher interest rates are a risk for all borrowers, especially if the economy slips into recession. Current debt burdens remain modest given that many borrowers locked in low fixed rate loans in 2020 and 2021 and both household income and business profit margins remain high. However, as those debts mature and are refinanced, borrowing costs will rise and strain some borrowers, as we discuss in our credit outlook below.

Interest Rate and Monetary Policy Outlook

Figure 21: Key Interest and Policy Rates

Interest Rates (%, end of period)	8/15/23	2023:2	2023:1	2022:4	2022:3	2022:2	2022:1	2021:4
Fed funds rate target (upper bound)	5.50	5.25	5.00	4.50	3.25	1.75	0.50	0.25
3-month LIBOR	5.64	5.55	5.19	4.77	3.75	2.29	0.96	0.21
2-Yr Treasury note yield	4.92	4.87	4.06	4.41	4.22	2.92	2.28	0.73
10-Yr Treasury note yield	4.21	3.81	3.48	3.88	3.83	2.98	2.32	1.52
30-Yr Treasury note yield	4.32	3.85	3.67	3.97	3.79	3.14	2.44	1.90

Long-term **Treasury rates** turned up again in the second quarter as banking turmoil receded and the Treasury began to refill its coffers after the debt ceiling deal was reached. Despite better inflation news, interest rates continued upward so far in Q3 on heavy Treasury supply, resilient economic growth, and more Fed tightening (Figure 21). Projections of wider federal budget deficits added to Treasury supply expectations and steepened the yield curve.

The FOMC raised rates by 25 bp at its meetings in May and July but skipped a hike at the June meeting. That brought the fed funds target range to 5.25-5.50% currently. Market forward rates price in another pause at the September 20 FOMC meeting and about a 40% chance of a final 25 bp hike at its November 1 meeting. Markets now expect a somewhat longer peak-rate plateau, with at least one 25 bp cut fully priced in by the May 1, 2024 meeting, compared to November or December 2023 just a quarter ago.[5] Markets anticipate rate cuts totaling about 110 bp in 2024, compared to 170 bp around the time of our last Update (Figure 22).

Figure 22: Market Sees Longer Rate Plateau[6]

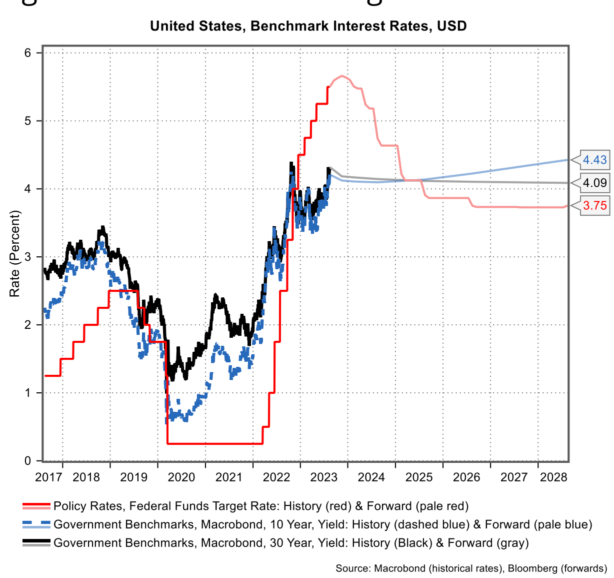


Figure 23: Financial Conditions Tight Enough

[5] Forward rates price in lower probabilities of a rate cut at the January 31 and March 20, 2024 meetings.
[6] The fed funds effective rate recently has traded about 17 bp below the top end of the FOMC target range. In Figure 25, we add 17 bp to forward rates implied by overnight index swaps (OIS) to align them with the upper band of historic target rates.

The FOMC left the pace of securities reductions in the Fed's System Open Market Account (SOMA) unchanged. The Fed will continue to trim Treasury holdings by up to $60 billion and agency mortgage-backed securities by up to $35 billion per month, with no end date yet announced. SOMA reductions have contributed to slower money supply growth and upward pressure on interest rates.

Financial conditions have been stable to modestly easier since the end of 3Q2022, as higher stock prices offset higher short-term rates (Figure 23). While some FOMC members indicate they would like to see tighter financial conditions, real short-term rates are now restrictive, and the inflation news (tentatively) has improved. Moreover, rising deposit costs have prompted banks to tighten lending standards and lower their willingness to extend consumer installment loans (Figure 24). They also have raised spreads (i.e., cost) on new loans, which has reduced demand (Figure 25). These shifts are large and relatively recent, and they are likely to do some of the work for the Fed in dampening aggregate demand. We believe financial conditions are tight enough to reach the Fed's inflation target, although short rates likely need to stay at their terminal plateau until mid-2024 to convince the Fed that is the case.

Figure 24: Banks Tighten Credit Standards...

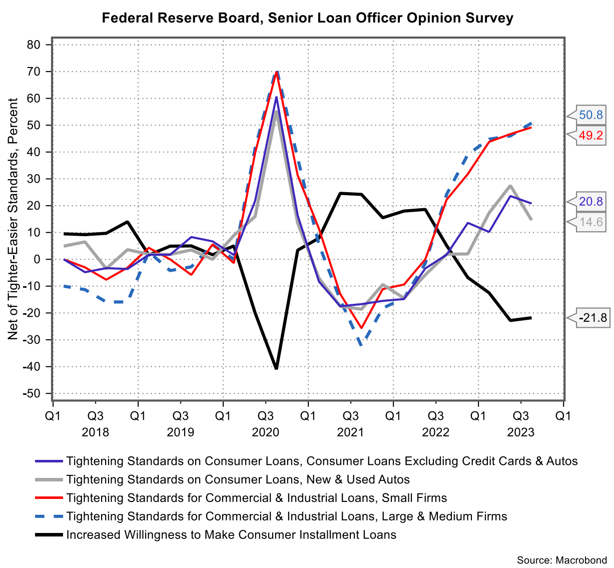
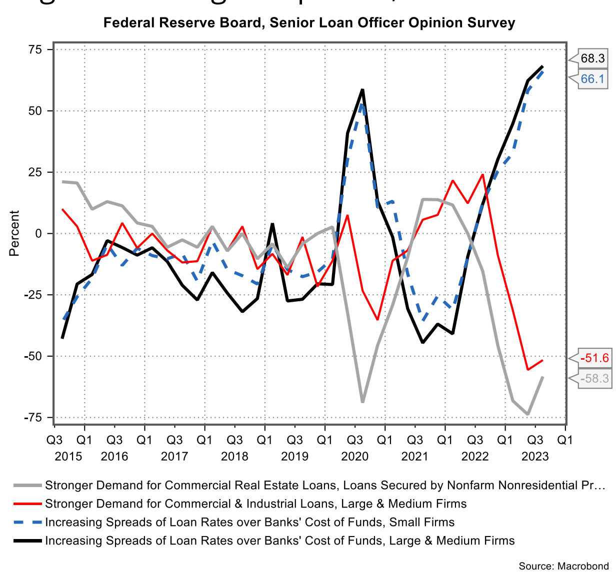


Figure 25: ...Higher Spreads, Lower Demand



We anticipate that monetary tightening already in place will push the economy into a mild recession starting in the fourth quarter, which should raise unemployment and slow wage growth. In turn, core PCE inflation should fall to about 3% by the middle of 2024. From there, we expect the FOMC to cut rates somewhat faster than the pace of disinflation until the core PCE deflator reaches the Fed's 2% target. Given the increase in both short- and long-term interest rates over the past few months, our rate outlook is now close to market forward rates. Of course, there is much uncertainty over how quickly inflation will come down, and we cannot rule out another rate hike or two, but we think the Fed's "terminal" rate is in sight. If we are right, 10- and 30-year Treasury rates likewise should be near their peaks, and this may be a good entry point for long-term investors.

Credit Conditions and Outlook

Figure 26: Selected Credit Spreads and Quality Metrics

Credit Spreads (bp, end of period)	8/15/23	2023:2	2023:1	2022:4	2022:3	2022:2	2022:1	2021:4
ICE-BofAML Index, spread to worst								
US Corporate (C0A0)	126	134	148	141	168	163	121	95
US High Yield (H0A0)	402	425	474	491	550	592	371	330
US Preferred & Hybrid (P8JC)	288	324	357	351	319	332	240	178

	Delinquencies (% of loans)				**Charge-Offs** (% of loans)			
Bank Loan Quality (%) (FRB)	2023:1	2022:4	2022:3	2022:2	2023:1	2022:4	2022:3	2022:2
US Banks, Total Loans	1.20	1.19	1.20	1.22	0.38	0.33	0.27	0.22
Commercial & Industrial	0.97	1.02	1.09	1.04	0.28	0.22	0.17	0.13
Commercial Real Estate	0.76	0.69	0.65	0.72	0.07	0.03	0.01	0.01
Consumer	2.23	2.06	1.92	1.81	1.75	1.65	1.32	1.07

Bank Capital & Reserves*	2023:2	2023:1	2022:4	2022:3	2022:2	2022:1	2019:4
Common Equity Tier 1 Capital Ratio (%)	10.83	10.61	10.44	10.45	10.48	10.63	10.62
Loan-loss Reserve/Non-perf. Loans (%)	232	294	198	208	197	185	162

* Average of peer group of 28 large US banks (Source: S&P Capital IQ).

Longer-term credit spreads narrowed in the second quarter as banking turmoil subsided, and they have continued to tighten so far in Q3. Bank capital and loan-loss reserves are healthy (Figure 26). Loan delinquencies and charge-offs remain low but have increased, especially for consumer loans, and are likely to rise further (Figure 27). Commercial loans continue to perform well, but bankruptcy risks and filings are up (Figure 28). With interest rates up sharply and economic growth likely to slow later this year, we remain watchful of highly leveraged companies that may not be able to support higher rates when debt needs to be refinanced. Bankruptcy filings are likely to increase. Similarly, while aggregate household balance sheets are healthy, some consumers will find themselves overstretched and default on loans.

Figure 27: Problem Loans Turning Up

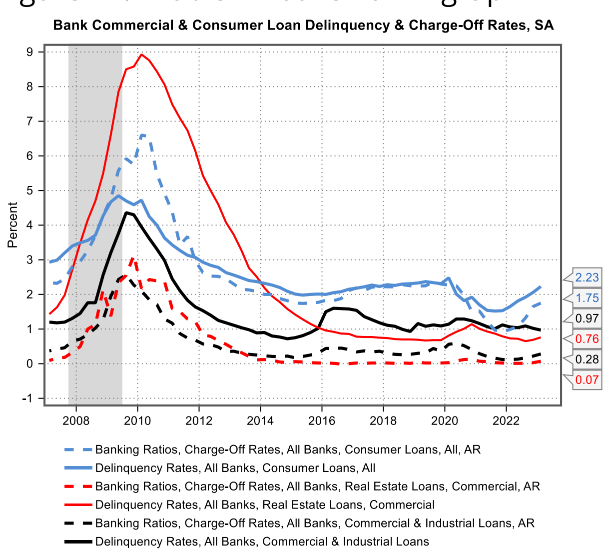
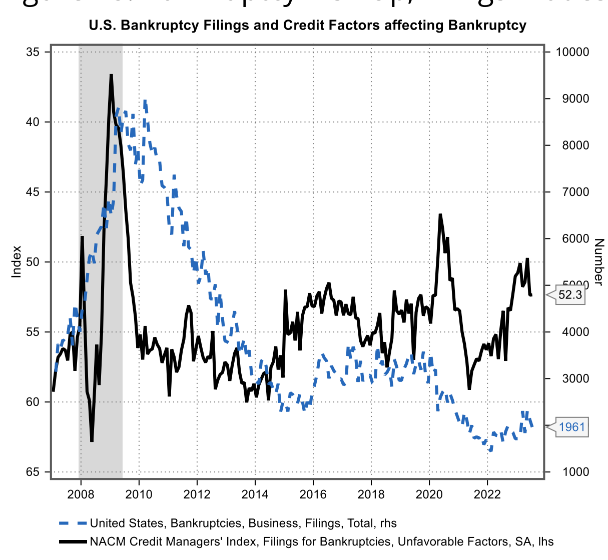


Figure 28: Bankruptcy Risk Up, Filings Modest



Commercial real estate (CRE) loans at banks remain an important investor concern, especially for loans on office properties. So far, problems are limited. Nonetheless, we expect banks to experience higher defaults and charge-off rates on these loans. Fortunately, office CRE is a small percentage of total loans at most banks. We do not forecast a doom loop of foreclosures, lower values, and more foreclosures on CRE. After taking substantial losses in CRE loans in earlier cycles, banks raised lending standards significantly after the global financial crisis, typically lending 55-60% of building value at inception. While some loans will fall below those thresholds and lead to foreclosure, most should meet their contractual terms, and some likely will have their terms modified. Moreover, because they are secured, there should be some recovery on loans that do default. We are watching CRE closely but given the strong performance of other loan categories and already elevated loan-loss reserves on CRE, we expect it to be manageable for banks.

Another worry has been banks' ability to retain deposits. Here we have some good news. Total U.S. banks deposits are down only 1.6% from the end of February (before any bank failures) to the beginning of August (latest data available), and they are up 0.9% over the past three months. Deposit cost is up, but banks have been able to retain a very large percentage of their deposits. In addition, uninsured deposits are down while insured deposits are up, reducing the risk of rapid deposit flight. Finally, banks continue to have ready access to borrowing facilities at the Federal Reserve and Federal Home Loan Banks. By our estimates, available liquidity can repay all uninsured deposits at the banks we cover. We believe that significantly reduces funding risk at these banks. Moreover, loan growth has slowed sharply as lending standards have tightened, putting less pressure on banks to raise new deposits (Figure 29).

Figure 29: Bank Loans Flat to Down in 2023

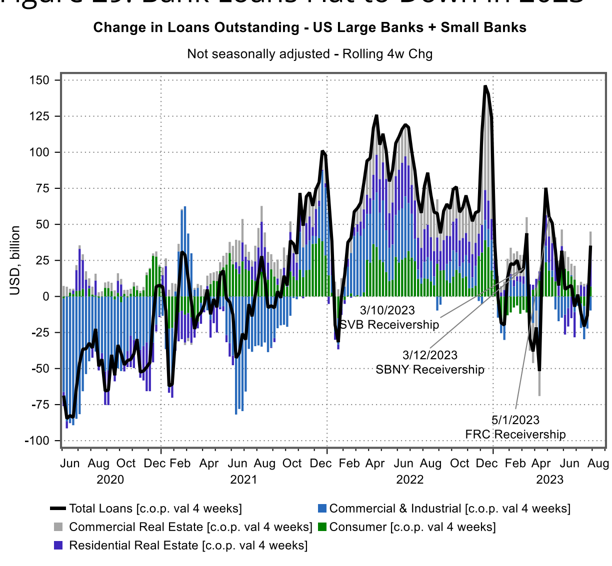
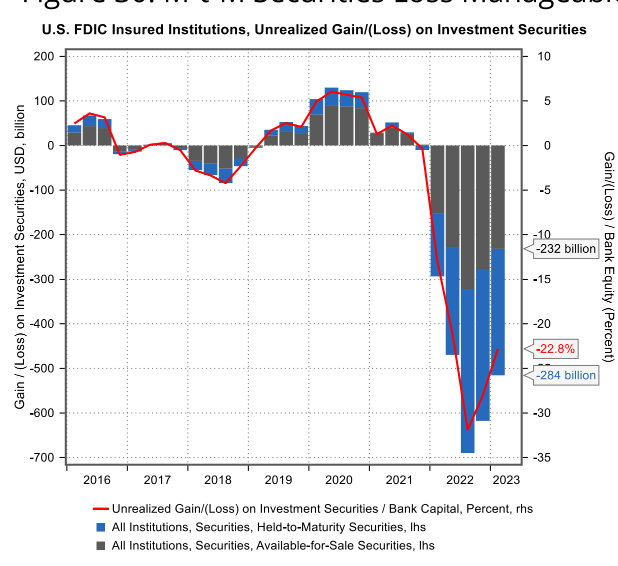


Figure 30: M-t-M Securities Loss Manageable



Finally, investors remain concerned about unrealized losses on loans and securities at U.S. banks. The rapid rise in rates over the past 18 months hurt prices of nearly all fixed-income investments, even those with minimal or no credit risk that typically comprise the bulk of banks' securities portfolios (Figure 30). Although we do not yet have Q2 FDIC data for the entirety of the U.S. banking system, banks we track that have reported Q2 data show smaller unrealized losses than in 4Q2022 but larger losses than in 1Q2023. Meanwhile, banks' earnings have lifted common equity capital over that time. While higher interest rates remain a risk, and these lower-yielding securities will be a headwind to bank earnings, we expect banks will manage through this problem.

Tighter monetary policy and recession fears drove **credit spreads**[7] sharply wider in 2022. As economic growth remained resilient and banking fears diminished, credit spreads tightened. Investment-grade and high yield corporate bond spreads narrowed by 14 bp and 49 bp, respectively, in the second quarter (Figures 26 and 31).[8] Spreads on the preferred securities index narrowed 33 bp over the same period.[9] Spreads on all three indices have narrowed so far in Q3, with larger moves in preferreds and high yield bonds.

Figure 31: Spreads Narrower but Volatile

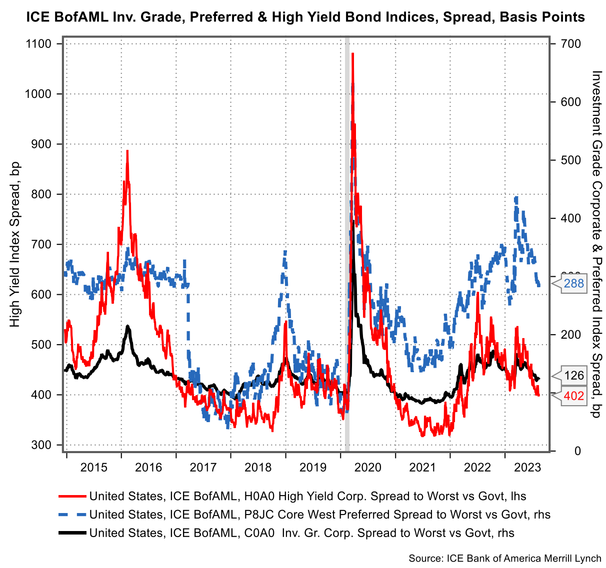
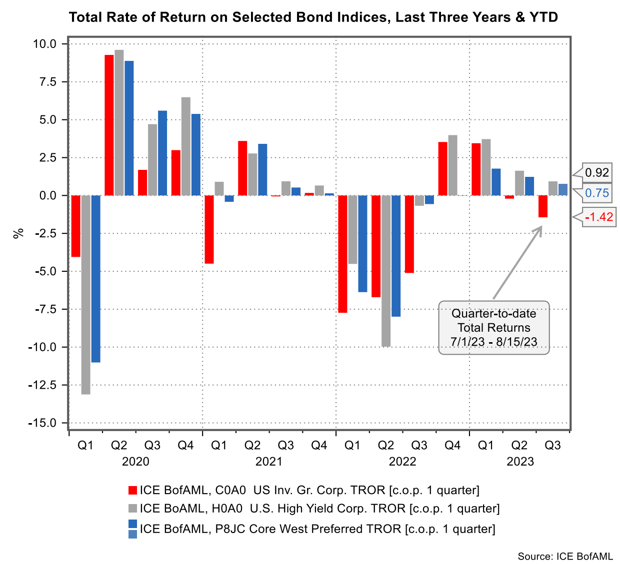


Figure 32: Credit Returns turn Positive



While we illustrate preferred spreads using spread to worst, preferreds' complex call features distort this simple spread measure in certain market environments, especially when prices

[7] The benchmarks from ICE Data Indices, LLC ("ICE Data") are used with permission. ICE Data, its affiliates and their respective third-party suppliers disclaim any and all warranties and representations, express and/or implied, including any warranties of merchantability or fitness for a particular purpose or use, including the indices, index data and any data included in, related to, or derived therefrom. Neither ICE Data, its affiliates nor their respective third-party providers shall be subject to any damages or liability with respect to the adequacy, accuracy, timeliness or completeness of the indices or the index data or any component thereof, and the indices and index data and all components thereof are provided on an "as is" basis and your use is at your own risk. ICE Data, its affiliates and their respective third-party suppliers do not sponsor, endorse, or recommend Flaherty & Crumrine Incorporated, or any of its products or services.

[8] Investment-grade corporate bond spread is represented by the ICE BofA U.S. Corporate Index[SM] (C0A0) "Yield to Worst versus Government" yield spread series. "Spread to Worst" is the lower of yield to call and yield to maturity minus yield on a comparable Treasury security. Index data through 8/15/2023.

[9] Preferred index is the ICE BofA 8% Constrained Core West Preferred & Junior Subordinated Securities Index[SM] (P8JC). Index inception date was 3/31/2012; data through 8/15/2023.

of most preferred securities are above par (where they started 2022, but most trade below par today). Therefore, we also like to examine total rate of return, as it captures the impact of issuer redemptions as well as changes in credit spreads and Treasury yields. Figure 32 shows total returns on selected ICE BofA indices in recent quarters. The first three quarters of 2022 were terrible for almost all asset classes, including investment grade and high yield corporate bonds and preferred securities. Returns have been better since then, but looking at the period from December 31, 2021 to August 15, 2023, all three had sizable negative returns. Total return on the preferred index (-11.11%) outperformed the investment-grade corporate bond index (-13.95%) but trailed the high yield index (-5.05%) over that period.[10]

We remain confident in the credit fundamentals of most preferred issuers. Of course, credit risk and unrealized losses on securities portfolios could increase with additional monetary tightening, and that risk could outweigh the benefit of higher rates and loan spreads on earnings at banks and other financial businesses. However, given sizable reserves for potential loan losses, we think banks are well prepared for a recession, if that is what lies ahead. Moreover, both businesses and consumers should benefit from lower inflation that we believe will become more visible in the fourth quarter of 2023 and, especially, next year.

As inflation slows, interest rates fall, and an economic recovery begins in 2024, credit fears should recede. Credit spreads already anticipate that to some degree, although higher Treasury rates have kept overall yields on preferred securities elevated. While risks remain, most of the market's adjustments to tighter monetary policy and higher rates appear to be behind us. Yields on preferred securities are up significantly from a year ago and can offer attractive returns even without lower interest rates. Despite banking sector concerns, we believe preferred and contingent capital securities offer long-term investors high income, moderate interest rate risk, and good credit quality.

Flaherty & Crumrine Incorporated
August 15, 2023

[10] Total return is not annualized and includes both price change and income. Past performance does not guarantee future performance.