Third-Quarter U.S. Economic Update

November 2022

Summary of Recent Economic and Market Developments

The U.S. economy resumed growth in the third quarter of 2022 after contracting slightly in the first half, but the composition of growth deteriorated. Overall real GDP rose 2.6% in Q3 on the back of a 2.8% contribution from net exports. Hiring remained sturdy, and wage growth slowed marginally. Wage and salary income posted another strong gain, pushing disposable personal income up 1.7% after inflation. Real personal consumption expenditures rose 1.4%, down slightly from Q2 as consumers continued to shift spending toward services. Home sales slowed sharply, and real residential investment plunged by more than 26% on a combination of high home prices and rapidly rising mortgage rates. Industrial output rose by 2.9%, less than in recent quarters, and manufacturing surveys suggest lower output ahead. Real business investment rose moderately (3.7%). Other sectors—trade (+2.8%), inventories (-0.7%), and government consumption (+0.4%)—together contributed 2.5% to real GDP. That left core GDP growth, real private domestic final sales, up only 0.1%.

Lower energy prices pushed down inflation as measured by the GDP implicit deflator in nearly all sectors, but the consumer price index and PCE deflator were down only slightly. Year-over-year CPI rose 8.3% in Q3, and the PCE deflator rose 6.3% YoY in Q3; both were just 0.3% lower than in Q2. Core inflation (excluding volatile food and energy prices) was mixed. Core CPI rose 6.3% YoY in Q3, up from 6.0% in the prior quarter. The core PCE deflator rose 4.9% YoY in Q3, just 0.1% better than in Q2. However, October's CPI and producer price index (PPI) reports showed larger improvements. We expect inflation in goods prices to fall quickly over the next six months. Services inflation should also slow, but stubbornly high wage costs could postpone rapid declines until the second half of 2023.

The Federal Reserve continued to hike the fed funds rate in 75 bp increments in July, September, and November, pushing the fed funds target range up to 3.75-4.00% currently. Market forward rates show the fed funds rate peaking at about 5% in 2Q2023, falling about 50 bp in the second half of 2023, and more rapidly in 2024. Yields on intermediate-term Treasuries rose sharply in Q3 and through early November, but better inflation news sparked a rally that has left rates about 50 bp below their recent peak. Credit spreads continued to mirror macroeconomic news and followed a similar pattern: wider overall but with substantial narrowing in the past few weeks.

Although we anticipate a mild recession in the second half of 2023, fundamental credit quality remains healthy. We think financial companies, which are the largest issuers in the preferred market, should benefit from higher interest rates and have the capital, earnings, and reserves to manage strains that a recession could bring. We believe today's higher yields on preferred and contingent capital securities offer a foundation for potentially better returns ahead.

Economic Outlook

Figure 1: U.S. Gross Domestic Product

Sector	Real GDP (QoQ%, AR; *Q4/Q4)				Nominal GDP (QoQ%, AR; *Q4/Q4)				Implicit Deflator (AR; *Q4/Q4)			
	2022:3	2022:2	2021*	2020*	2022:3	2022:2	2021*	2020*	2022:3	2022:2	2021*	2020*
Gross Domestic Product (GDP)	2.6%	-0.6%	5.7%	-1.5%	6.7%	8.5%	12.2%	0.0%	4.1%	9.1%	6.1%	1.5%
Personal Consumption Expenditures	1.4%	2.0%	7.2%	-1.4%	5.7%	9.5%	13.2%	-0.2%	4.2%	7.3%	5.7%	1.1%
PCE: Goods	-1.2%	-2.6%	7.1%	8.6%	1.5%	7.8%	15.6%	8.0%	2.8%	10.6%	7.9%	-0.5%
PCE: Services	2.8%	4.6%	7.2%	-5.8%	7.9%	10.4%	12.0%	-4.0%	4.9%	5.6%	4.5%	2.0%
Fixed Investment	-4.9%	-5.0%	3.7%	1.0%	2.3%	4.7%	9.8%	3.0%	7.6%	10.3%	5.9%	2.0%
Business Investment	3.7%	0.1%	5.0%	-3.5%	11.4%	8.6%	8.5%	-2.4%	7.4%	8.5%	3.3%	1.1%
Structures	-15.3%	-12.7%	-5.2%	-16.0%	1.5%	2.5%	4.7%	-16.1%	19.9%	17.5%	10.4%	-0.1%
Equipment	10.8%	-2.0%	4.7%	-2.7%	17.1%	7.0%	7.2%	-3.3%	5.7%	9.2%	2.4%	-0.7%
Intellectual Property	6.9%	8.9%	10.8%	3.8%	10.8%	13.2%	11.6%	7.7%	3.6%	3.9%	0.7%	3.7%
Residential Investment	-26.4%	-17.8%	-0.3%	16.4%	-20.3%	-5.3%	13.6%	22.0%	8.3%	15.2%	13.9%	4.8%
Government Consumption	2.4%	-1.6%	0.5%	1.0%	5.7%	9.7%	7.3%	3.6%	3.2%	11.6%	6.7%	2.5%
Federal	3.7%	-3.4%	0.4%	5.4%	8.7%	2.4%	4.6%	7.2%	4.8%	6.0%	4.3%	1.7%
State & Local	1.7%	-0.6%	0.6%	-1.6%	4.0%	14.3%	9.0%	1.4%	2.2%	15.0%	8.3%	3.0%
Domestic Final Sales	0.5%	0.2%	5.4%	-0.6%	5.1%	8.7%	11.6%	1.0%	4.6%	8.5%	5.9%	1.5%
Private Domestic Final Sales	0.1%	0.5%	6.4%	-0.9%	5.0%	8.5%	12.5%	0.4%	4.9%	7.9%	5.7%	1.3%

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 rebounded in the third quarter as the trade deficit narrowed sharply. Gross domestic product after inflation (real GDP) rose by 2.6% on a combination of slightly weaker nominal growth and lower inflation (Figure 1). However, the composition of growth deteriorated. Net exports added 2.7% to real GDP (and likely will not be repeated), but real domestic final sales rose just 0.5% and private domestic final sales were nearly flat. Residential investment was extremely weak, down more than 20% in both nominal and real terms. Business investment fared better, although investment in structures remained weak. Real personal consumption expenditure grew modestly as consumers shifted spending toward services. Consumer goods spending slipped for the third consecutive quarter. Real government consumption rose for the first time in a year. Although inflation remains too high, the implicit deflator slowed in almost all major sectors of the economy in Q3.

Economists forecast U.S. real GDP will expand by 0.5% in Q4 and 1.8% in 2022.[1] They expect growth of 0.5% in 2023, as monetary tightening weighs on the economy, and 1.4% in 2024, as that begins to unwind. The core PCE deflator is forecast to rise 4.8% YoY in Q4 (near its Q3 pace), 3.0% YoY in 4Q2023, and average 2.4% in 2024.

With higher interest rates beginning to bite, we think *nominal* GDP growth will slow over coming quarters as consumers deplete savings from the pandemic and continue to reduce spending, but falling inflation should keep real GDP growth positive in the first half of 2023. Residential investment is likely to remain weak (although probably not as bad as in Q3), and business investment should slow as businesses turn more cautious. As we expected, services inflation remains sticky, but goods inflation is slowing rapidly. As the economy slows and unemployment rises, wage growth should moderate and drive down services inflation. That process may take time, however. As a result, the Fed is set to further tighten monetary policy over the coming meetings and perhaps leave rates at a restrictive level for longer than

[1] Bloomberg *Monthly Economic Survey*, November 15, 2022, Bloomberg L.P.

markets currently expect. While there is a narrow path to lower inflation and continued economic growth through 2024, we think a recession beginning in the second half of 2023 is more likely. However, we still do not see excessive investment in homes, inventories, or business plant and equipment that typically leads from boom to bust—a recession should be mild.

Employment, Income and Spending

Figure 2: Employment Overview

Employment	**MoMΔ (Level for Rates)**			**QoQ Change**			**YoY% Change**		**Chg vs.**
(Thousands except percents)	**Oct-22**	**Sep-22**	**Aug-22**	**2022:3**	**2022:2**	**2022:1**	**Oct-22**	**Sep-22**	**Feb-20**
Nonfarm Payrolls	261	315	292	1,144	1,047	1,616	3.6%	3.9%	804
Private	233	319	233	1,000	1,045	1,581	4.0%	4.4%	1,333
Household Employment	(328)	204	442	825	(347)	2,483	2.7%	3.2%	(258)
Labor Participation Rate %	62.2%	62.3%	62.4%	0.1%	-0.2%	0.5%	0.5%	0.6%	-1.2%
Unemployment Rate	3.7%	3.5%	3.7%	-0.1%	0.0%	-0.3%	-0.9%	-1.2%	0.2%

	MoM% Change			**QoQ% Change, AR**			**YoY% Change**		
Average Hourly Earnings	**Oct-22**	**Sep-22**	**Aug-22**	**2022:3**	**2022:2**	**2022:1**	**Oct-22**	**Sep-22**	**Feb-20**
Average Hourly Earnings, All	0.37%	0.31%	0.28%	4.4%	4.6%	4.8%	5.4%	4.9%	3.7%

	QoQ% Chg (not annualized)				**YoY% Change**				
Employment Cost Index	**2022:3**	**2022:2**	**2022:1**	**2021:4**	**2022:3**	**2022:2**	**2022:1**	**2021:4**	**2019:4**
Employment Cost, Total, Civilian	1.2%	1.3%	1.4%	1.0%	5.0%	5.1%	4.5%	4.0%	2.7%

The **labor market** is showing some signs of cooling, but it remained very tight in the third quarter. Nonfarm payroll growth accelerated slightly in Q3, although it slowed a bit in October (Figure 2). That is still significantly faster than underlying growth in the labor force. The unemployment rate rose to 3.7% in October only because the household survey recorded 328,000 job losses, much worse than the nonfarm survey. The gap between the household employment and nonfarm payroll surveys has widened again, with the former showing fewer jobs than in February 2020 and the latter showing more (Figure 2, last column). Currently, we think the much larger payroll survey better reflects the state of the labor market, but the sustained weakness in the household survey could signal a downturn and bears watching.

Figure 3: Wages Slowing, but Labor Tight

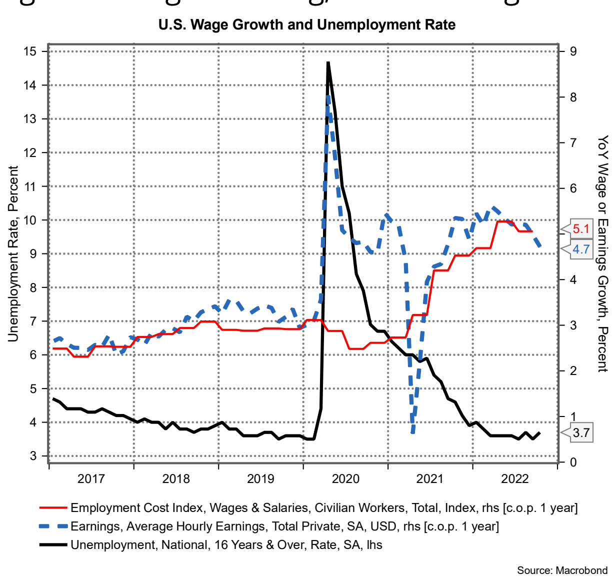
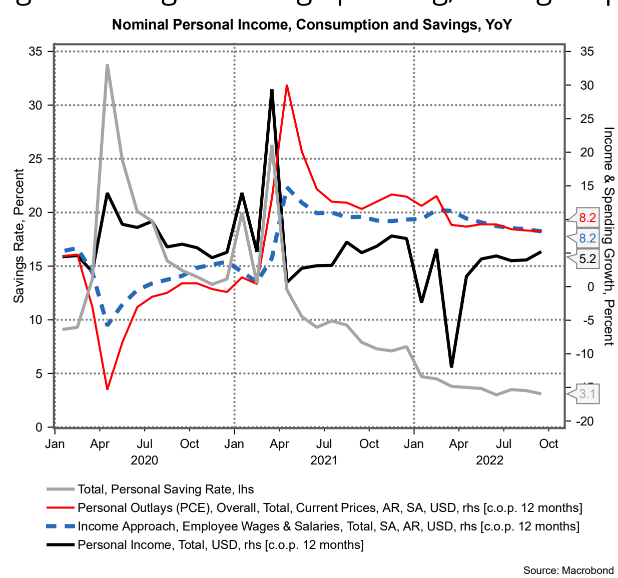


Figure 4: Wages Driving Spending; Savings Slip



Although employment growth remains sturdy, it has slowed from almost 540,000 jobs per month in the first quarter to about half that pace (261,000 new hires) in October. Job openings have slowed as well. The 3-month moving average of job openings was 10.7 million in September (latest data available), down significantly from its April peak of 11.6 million. However, that still leaves the latest ratio of job openings to unemployed persons at 1.86, compared to about 1.2 prior to the pandemic. Tighter monetary policy and a slower pace of hiring is dampening wage growth, but weak labor participation has kept the labor market tight (Figure 3). The Fed needs to bring wage growth down to around 3% to be consistent with its 2% inflation target. That is likely to require a sustained period of restrictive monetary policy and at least moderately higher unemployment. We expect employment growth to slow further over coming months.

Figure 5: Personal Income and Spending

Personal Income and Consumption	MoM Change			QoQ Change (AR)			YoY Change		
	Sep-22	Aug-22	Jul-22	2022:3	2022:2	2022:1	2022:3	2022:2	2021:3
Personal Income	0.36%	0.38%	0.39%	5.5%	5.9%	3.0%	4.3%	3.4%	4.9%
Wages & Salaries	0.56%	0.33%	0.82%	7.3%	6.9%	6.8%	8.5%	9.6%	10.6%
Real Disposable Pers. Inc.	0.05%	0.19%	0.54%	1.7%	-1.5%	-10.6%	-3.9%	-5.5%	-1.5%
ex Transfer Payments	0.13%	0.18%	0.69%	2.5%	-0.4%	-2.2%	0.6%	0.6%	3.2%
Nominal PCE	0.65%	0.56%	-0.23%	5.7%	9.5%	8.9%	8.4%	9.2%	12.2%
excl. Food & Energy	0.72%	0.83%	0.11%	6.9%	8.2%	7.8%	7.9%	8.2%	11.9%
Goods	0.31%	-0.37%	-0.80%	1.5%	7.8%	12.5%	8.3%	7.7%	12.7%
Services	0.82%	1.05%	0.08%	7.9%	10.4%	7.1%	8.4%	10.0%	12.0%
Real PCE	0.31%	0.29%	-0.11%	1.4%	2.0%	1.3%	2.0%	2.4%	7.4%

Personal income expanded a bit more slowly in nominal terms in the third quarter, but lower inflation pushed real disposable personal income growth back into positive territory (Figure 5). Rising hourly pay and employment produced a solid 7.3% gain in wage and salary income (Figures 4 and 5, respectively). Looking ahead, we expect nominal personal income growth to slow but be accompanied by a decline in inflation that should accelerate over the next several quarters (see page 13 for our thoughts on inflation). Real disposable personal income should grow by 1.0-1.5% in the first half of 2023 but stall in the second half as tighter monetary policy cools the labor market and recession takes hold.

Nominal **personal consumption expenditure** (PCE) slowed in the third quarter (Figure 4). Goods spending slowed sharply, while services expenditure remained high (Figure 5). After inflation, real PCE growth was up 1.4% in Q3, down slightly from the prior quarter. Although the labor market has cooled a bit, U.S. consumers continue to see higher wages and good job availability, which has boosted wage and salary income and—along with savings—sustained spending. We expect resilient nominal spending and lower inflation to keep real PCE growth near its current level through the first quarter of 2023 before turning negative in the second half as economic headwinds build. Consumer confidence is already weak (Figure 6). The University of Michigan's consumer sentiment survey reports overall confidence at a level typical during a recession. The Conference Board survey does not look as bad, but it too is down sharply. Moreover, the index of leading economic indicators (LEI) suggests a recession is looming. Figure 7 shows the LEI expressed as a 6-month annualized rate of change, lagged by six months. Since the inception of the index in 1959, whenever the 6-month annual rate of change fell below -2.5%, a recession followed in about six months, excluding the COVID-induced February-April 2020 recession, which was concurrent with the LEI's plunge. For October, the index was down 6.3% compared to six months earlier. Of course, it could be different this time, but with the Federal Reserve tightening monetary policy to push inflation back to its 2% target, we think recession is likely.

Figure 6: Consumer Confidence Fragile

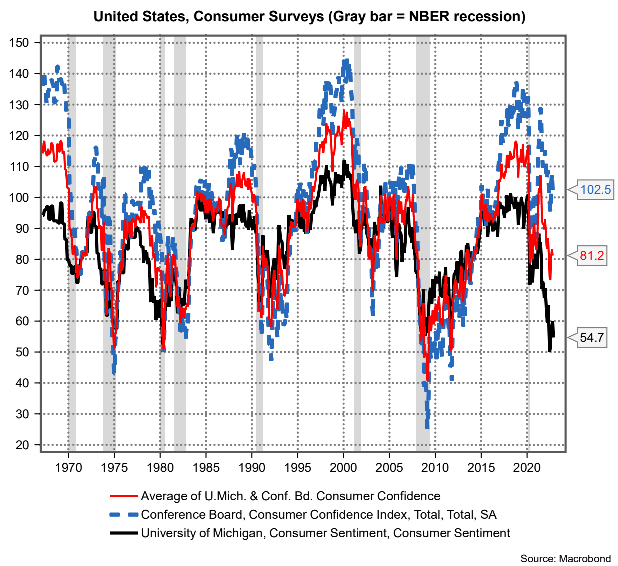
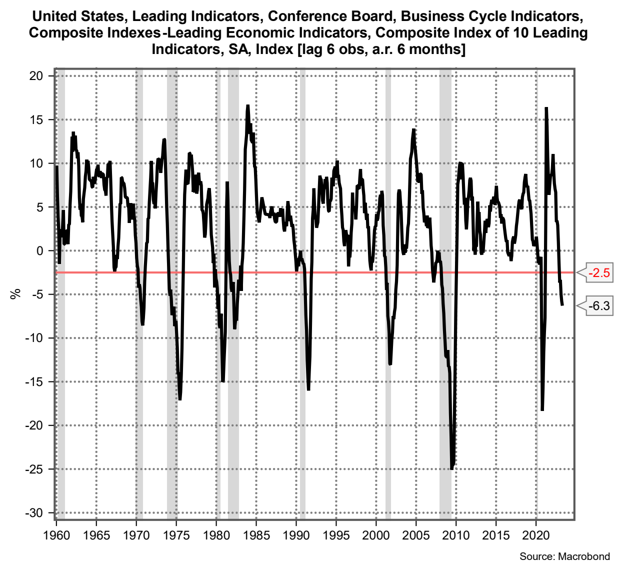


Figure 7: Leading Indicators Flash Recession



Because personal spending was closely aligned with income in the third quarter, the **personal saving rate** was little changed at 3.1% in September, although that remains well below the pre-pandemic rate of about 7% (Figure 4). Consumers are gradually spending down savings buffers accumulated during the pandemic to help offset inflation. However, some consumers appear to have exhausted those savings and turned to credit card borrowing. Revolving credit rose 14.3% in Q3 and is up 15.1% over 12 months ending in September (latest data available). While consumer balance sheets remain in good shape, continued growth in credit card borrowing suggests rising strain in some households.

The Housing Market

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

	QoQ Change (AR)				YoY Change				
Residential Investment	**2022:3**	**2022:2**	**2022:1**	**2021:4**	**2022:3**	**2022:2**	**2022:1**	**2021:4**	**2019:4**
Nominal Residential Inv, AR	-20.3%	-5.3%	15.2%	10.9%	-0.9%	7.0%	11.1%	13.6%	4.5%
Real Residential Inv, AR	-26.4%	-17.8%	-3.1%	-1.1%	-12.7%	-7.2%	-3.7%	-0.3%	2.0%
Implicit Deflator, AR	8.3%	15.2%	18.9%	12.1%	13.6%	15.3%	15.4%	13.9%	2.4%

	Sales Level (AR)			QoQ Change (AR)			YoY Change		
Home Sales & Prices	**Oct-22**	**Sep-22**	**Aug-22**	**2022:3**	**2022:2**	**2022:1**	**2022:3**	**2022:2**	**2022:1**
New + Existing Home Sales (000)	5,062	5,298	5,441	-35.2%	-41.2%	-7.0%	-20.9%	-10.8%	-4.3%
Homes available for sale (000)	1,268	1,277	1,332	46.7%	156.3%	-50.6%	-1.8%	-5.2%	-15.0%
S&P/Case-Shiller 20-city HPI Chg*	n/a	n/a	-1.3%	-3.2%	21.8%	24.4%	14.0%	20.1%	20.2%

* First three columns are MoM% changes. QoQ and YoY change calculated using average index values of July and August for 2022:3

The **housing market** plunged in the third quarter as elevated home prices and rising mortgage rates prompted another sharp slowdown in activity. Real residential investment fell 26.4% (Figure 8). Home sales again slowed sharply, although the inventory of unsold homes edged down (Figure 9). Home prices fell, bringing gains down from a peak of 21.3% YoY in April to 13.1% in August. Despite moderately lower home prices, higher mortgage rates crushed affordability (Figure 10). The housing market is usually one of the first major economic sectors to be affected by monetary policy. With the Fed continuing to tighten and risk of recession in 2023, we think residential investment will be weak for several years.

Figure 9: Home Sales, Prices Down

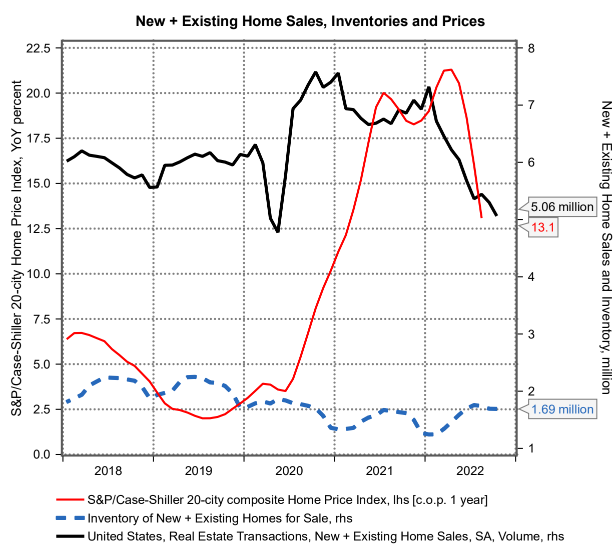
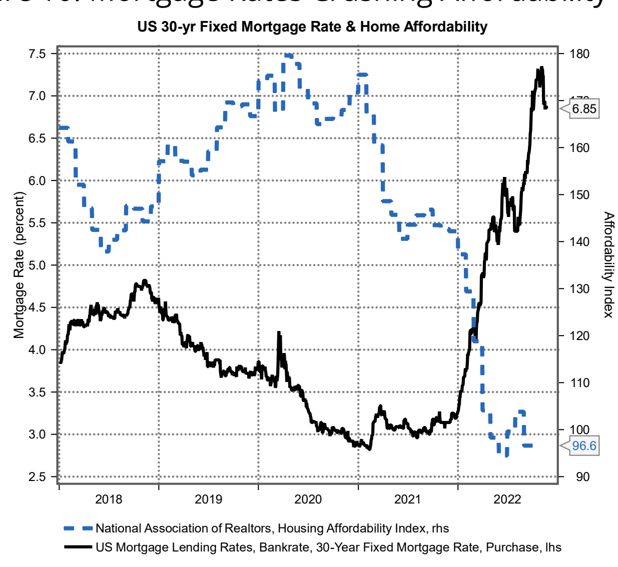


Figure 10: Mortgage Rates Crushing Affordability



However, we do not think the housing market will threaten financial stability as it did in the 2008 housing bust. First, residential investment is now just 3.1% of GDP compared to almost 6% in 2006 (Figure 11). Second, the inventory of unsold homes remains under 2 million now compared to over 4 million then, even as the U.S. population grew about 11% (33 million persons) from 2006 to 2021. The housing market is not over-built, and underlying demand remains strong. Third, home mortgage underwriting standards are much stronger now than in the earlier housing boom. As measured by the Federal Housing Finance Agency, a larger share of new loans today was made to borrowers with good or excellent credit quality, while loans to borrowers in the lowest two categories were a much smaller share. As a result, average credit scores have risen significantly since 2006 (Figure 12). Finally, banks' residential mortgage portfolios are smaller, and their loan-loss reserves and capital are much stronger than they were in 2008. Housing market weakness should not trigger material loan losses at banks. We are monitoring for signs that residential investment is causing broader problems, but currently we do not think it will prompt systemic financial instability.

Figure 11: Housing is Smaller Slice of GDP

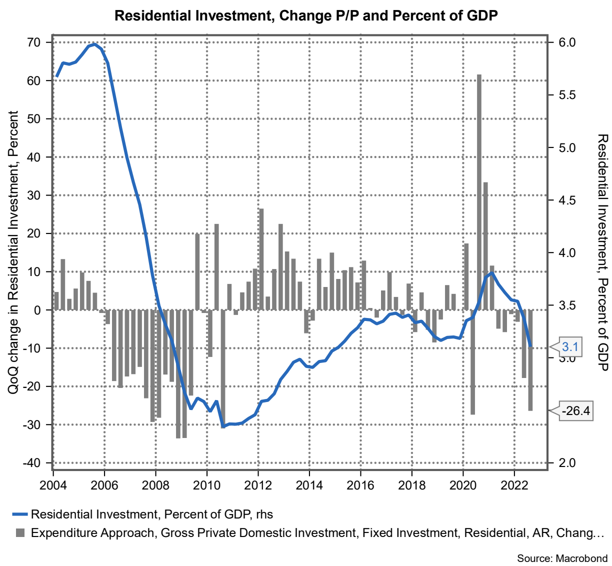
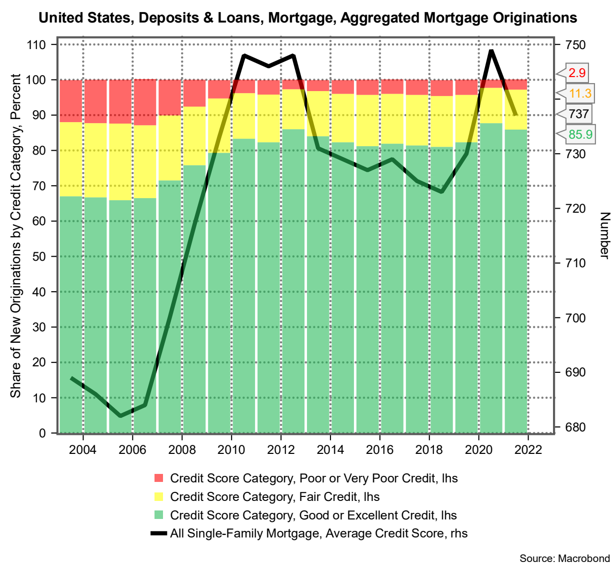


Figure 12: Credit Quality Skewed Higher



Business Investment and Industrial Output

Figure 13: Industrial Production, Orders, and Business Investment

	MoM Change			QoQ Change (AR)			YoY Change		
Industrial Output	**Oct-22**	**Sep-22**	**Aug-22**	**2022:3**	**2022:2**	**2022:1**	**2022:3**	**2022:2**	**2021:3**
Industrial Production	-0.11%	0.14%	-0.10%	2.2%	5.1%	4.7%	4.0%	4.3%	4.6%
Manufacturing	0.15%	0.24%	0.10%	0.6%	3.5%	3.7%	3.4%	3.8%	5.0%
	MoM Change			**QoQ Change (AR)**			**YoY Change**		
Mfg Orders & Shipments	Oct-22	**Sep-22**	**Aug-22**	**2022:3**	**2022:2**	**2022:1**	**2022:3**	**2022:2**	**2021:3**
Manufacturing Orders, total	--	0.28%	0.19%	3.8%	16.0%	16.2%	12.0%	14.5%	12.5%
NDCG ex aircraft*	--	-0.45%	0.90%	8.1%	6.9%	8.0%	8.4%	9.0%	13.5%
Real core orders**	--	-0.65%	0.49%	1.7%	-4.0%	-1.7%	-0.6%	0.5%	40.2%
Mfg Shipments, NDCG ex air	--	-0.48%	0.24%	6.3%	9.2%	15.6%	10.4%	11.9%	12.2%
Real core shipments**	--	-0.68%	-0.16%	0.0%	-2.0%	5.2%	6.9%	11.6%	33.9%

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

Business Fixed Investment	QoQ Change (AR)				YoY Change				
	2022:3	**2022:2**	**2022:1**	**2021:4**	**2022:3**	**2022:2**	**2022:1**	**2021:4**	**2019:4**
Nominal Busi. Investment	11.4%	8.6%	15.4%	8.9%	11.0%	9.5%	9.9%	8.5%	3.5%
Real Business Investment	3.7%	0.1%	7.9%	1.1%	3.2%	2.4%	4.8%	7.6%	2.6%
Implicit Deflator	7.4%	8.5%	6.9%	7.7%	7.6%	6.9%	4.9%	0.8%	1.0%

Industrial production grew by 2.2% in the third quarter, lower than in Q2, and contracted slightly in October (Figures 13 and 14). Mining output (including oil and gas extraction) rose 12.4% and business equipment was up 7.8%. That was partially offset by a 6.5% drop in utility output. Overall manufacturing output rose modestly in Q3 and edged up in October (Figure 13).

Figure 14: Output Stable, but Caution Ahead

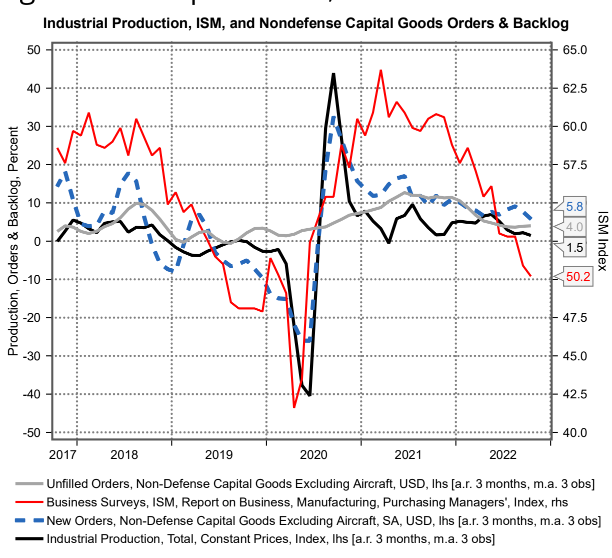
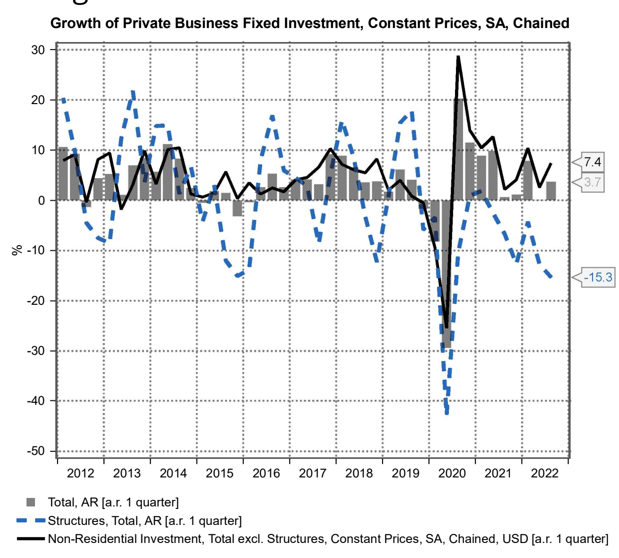


Figure 15: Business Investment Muted



The outlook for industrial output is mixed (Figure 14). The Institute for Supply Management's (ISM) manufacturing survey fell to 50.2 in October (50 is neutral), which suggests lower industrial output ahead. In contrast, orders for core capital goods (nondefense, excluding aircraft) rose 8.1% in the third quarter, faster than Q2's 6.9% gain. With both domestic and foreign economic growth likely to slow in Q4 and next year, we expect industrial output to follow.

More positively, goods shortages and supply chain disruptions appear to have improved as COVID restrictions receded, output rose, and global demand growth slowed. Backlogs held steady despite stronger orders, and the ratio of inventories to shipments increased a bit. ISM vendor performance, a measure of whether delivery times are lengthening (index over 50) or shortening (index under 50) fell from 67.2 in April to 46.8 in October. Manufacturers also reported easing price pressures, with the ISM prices paid index falling from 84.6 to 46.6 over the same period. This is welcome news for inflation.

Figure 16: Utilization Suggests Less CapEx...

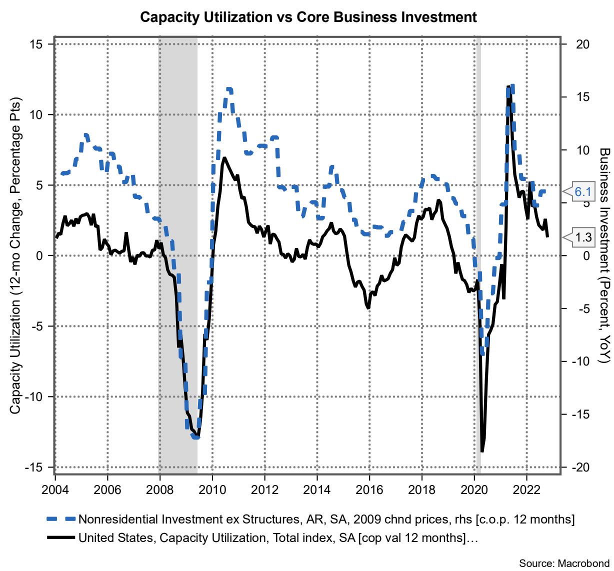


Figure 17: ...as Productivity Remains Low

Real **business investment** rose 3.7% in the third quarter as spending on capital equipment rebounded while spending on business structures remained weak (Figure 15). Capacity utilization rates are still rising, but gains have slowed considerably (Figure 16). Combine that with a softer economic outlook and higher interest rates—which raise the cost of capital investment—and business investment should slow. Weak productivity growth is also an obstacle to investment currently (Figure 17). We think business investment will remain modest until the economic outlook improves and monetary policy headwinds abate.

International Trade, Inventories, and Government Consumption

Figure 18: Contribution to Change in GDP from Net Exports, Inventories & Government

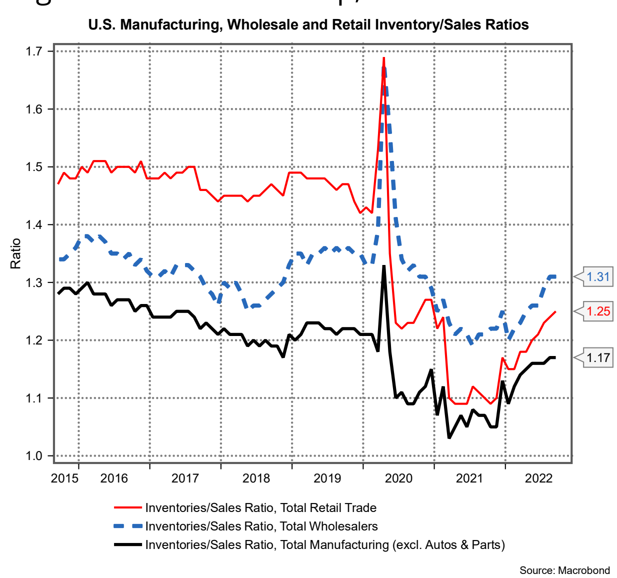
	Contribution to QoQ GDP (%, AR)				Contribution to Annual GDP (%)			
Contributions to Change in GDP, %	**2022:3**	**2022:2**	**2022:1**	**2021:4**	**2021**	**2020**	**2019**	**2018**
Real GDP	2.60	-0.60	-1.60	7.00	5.90	-2.80	2.30	2.90
Net Exports	2.77	1.16	-3.13	-0.16	-1.25	-0.26	-0.11	-0.29
Private Inventories	-0.70	-1.91	0.15	5.01	0.24	-0.55	0.05	0.15
Government Expenditure & Investment	0.42	-0.29	-0.40	-0.16	0.11	0.45	0.58	0.29
Federal	0.23	-0.22	-0.36	0.01	0.17	0.41	0.25	0.19
State & Local	0.19	-0.06	-0.04	-0.17	-0.06	0.04	0.32	0.10

Foreign trade, inventories and government spending and investment made mixed contributions to third-quarter growth. Net exports was a huge positive, accounting for all of Q3's GDP growth, and then some (Figure 18). A slower pace of inventory accumulation reduced growth moderately. Government spending added 0.4% to GDP, after two negative quarters. In total, these sectors added 2.5% to real GDP, while real domestic final sales was nearly flat at 0.1%.

The **trade deficit** narrowed sharply in Q3, as real import growth fell, and export growth rose (Figure 19). Real imports dropped by $70 billion and real exports were up by $86 billion (annualized rates) in Q3 compared to Q2. Both are above their pre-pandemic levels. Looking ahead, with global growth slowing and the U.S. dollar very strong, we expect a wider trade deficit over coming quarters, which would be a headwind to U.S. GDP growth.

Figure 19: Trade Shifting to GDP Drag

Figure 20: Inventories Up, with More Ahead



Businesses boosted **inventories**, but because they rose at a slower pace than in Q2, inventory accumulation subtracted 0.7% from GDP in Q3 (Figure 18). Inventory-to-sales ratios are up, but they remain below pre-pandemic levels at manufacturers and retailers and are about equal to the pre-pandemic level at wholesalers (Figure 20). Given ongoing concerns about potential supply disruptions, we expect inventories to rise further, which could add modestly to growth over the next few quarters, although they probably will turn negative if the economy slips into recession.

Real **government consumption** rose in the third quarter as the impact of earlier reductions in transfer payments faded. Federal government spending rose 0.9%, and state and local spending edged up 0.4%, together adding 0.4% to real GDP. Federal receipts were up 21% in the fiscal year ending September 30, 2022. Outlays were down 8% as pandemic spending fell sharply. We expect some acceleration in real state and local government spending in 2023, but with Congress looking narrowly divided, federal spending growth is likely to remain modest.

Inflation

Figure 21: Inflation Rates

Key Inflation Rates	MoM Change			QoQ Change (AR)			YoY Change			
	Oct-22	Sep-22	Aug-22	2022:3	2022:2	2022:1	2022:3	2022:2	2021:3	2019:4
Consumer Price Index	0.4%	0.4%	0.1%	5.7%	10.5%	9.2%	8.3%	8.6%	5.3%	2.0%
ex food & energy	0.3%	0.6%	0.6%	6.4%	6.6%	6.5%	6.3%	6.0%	4.1%	2.3%
Services ex Shelter	-0.1%	0.9%	0.6%	7.7%	11.5%	7.1%	7.5%	6.2%	3.2%	2.3%
Owners' Equiv. Rent	0.6%	0.8%	0.7%	8.5%	6.3%	5.3%	6.3%	5.1%	2.6%	3.3%
	Oct-22	Sep-22	Aug-22	2022:3	2022:2	2022:1	2022:3	2022:2	2021:3	2019:4
PPI Final Demand	0.2%	0.2%	0.0%	2.1%	12.0%	13.3%	9.0%	11.2%	8.5%	1.1%
ex food & energy	0.0%	0.2%	0.4%	4.0%	7.7%	10.6%	7.3%	8.6%	6.8%	1.4%
	Oct-22	Sep-22	Aug-22	2022:3	2022:2	2022:1	2022:3	2022:2	2021:3	2019:4
PCE Deflator, total	--	0.3%	0.3%	4.2%	7.3%	7.5%	6.3%	6.6%	4.5%	1.5%
ex food & energy	--	0.5%	0.5%	4.5%	4.7%	5.6%	4.9%	5.0%	3.9%	1.6%
Goods	--	-0.1%	-0.3%	2.8%	10.6%	12.6%	8.7%	10.0%	5.7%	-0.2%
Services	--	0.6%	0.6%	4.9%	5.6%	4.9%	5.0%	4.9%	4.0%	2.2%

Although it remains far too high, **inflation** generally declined during the third quarter, and October CPI and PPI inflation data suggest further improvement ahead (Figure 21). The Consumer Price Index (CPI) rose 8.3% YoY in Q3 and slowed to 7.7% YoY in October (Figure 22); over three months ending in October, it slipped to 3.8%. However, excluding food and energy, core CPI accelerated slightly to 6.3% YoY in Q3, where it remained in October. The Producer Price Final Demand Index (PPI) was up 9.0% YoY in Q3, 8.0% YoY in October, and decelerated to a 1.7% rate over three months ending in October. The PCE deflator also slowed meaningfully (Figures 21 and 22).

Figure 22: Inflation Slowing, still Too High

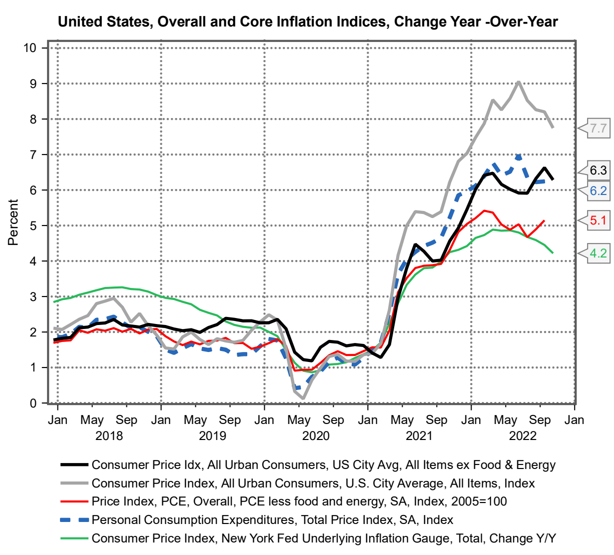
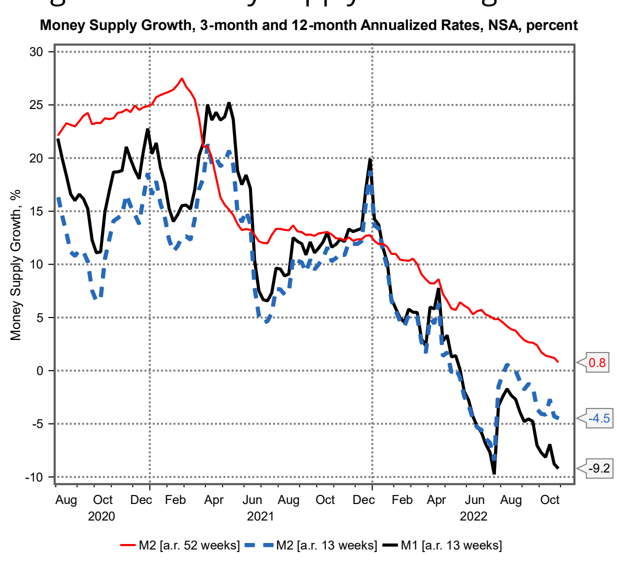


Figure 23: Money Supply Shrinking

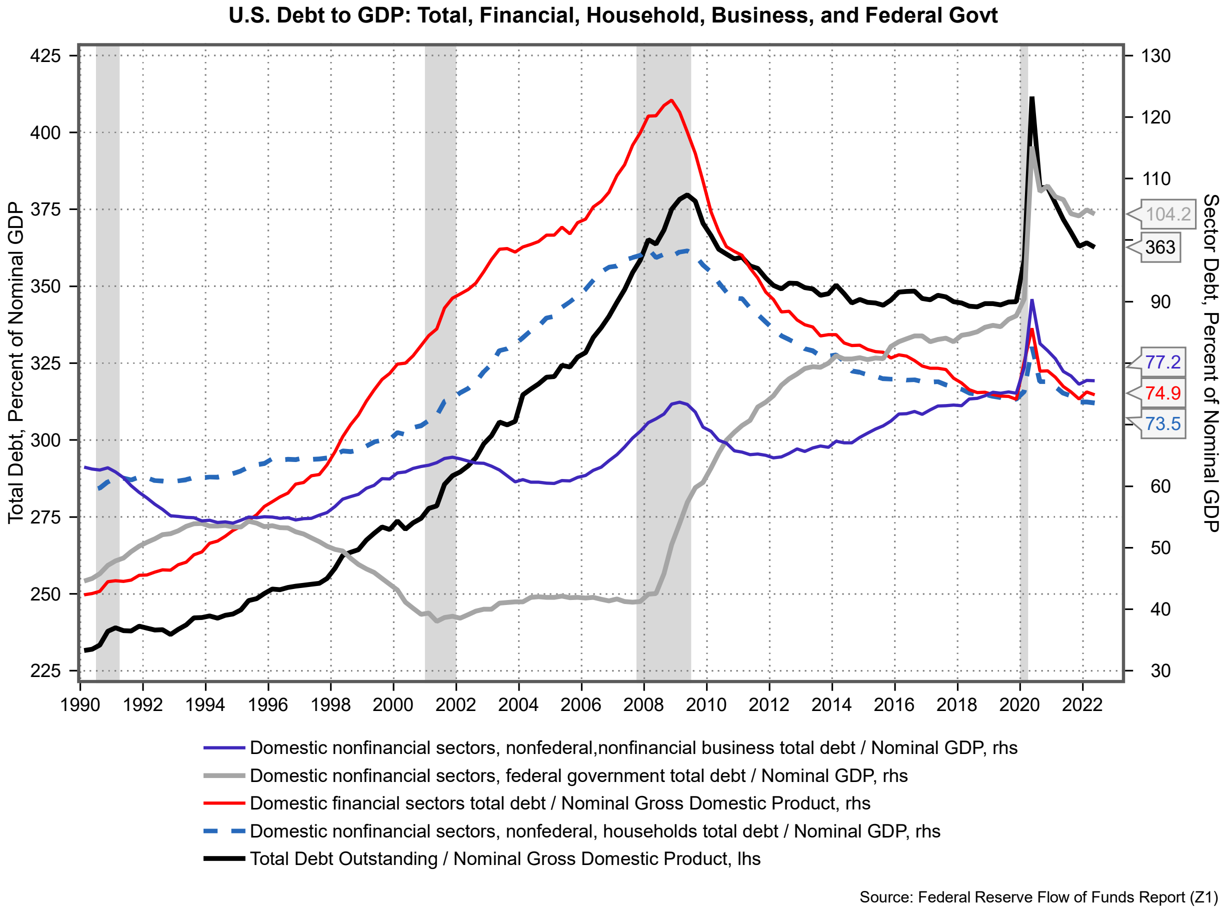


Money supply growth continued to drop in the third quarter (Figure 23), which should reinforce the disinflationary impact of higher borrowing costs and slower economic growth over the next 12-18 months. As noted earlier, diminishing supply chain disruptions and reports of faster deliveries and lower prices by manufacturers suggest that goods inflation should slow meaningfully—as recent PPI data already demonstrate. Sharply higher energy (+17.6% YoY in October CPI) and food (+10.6%) prices over the past year kept overall inflation above core inflation on an annual basis. While the war in Ukraine could keep both energy and food prices elevated through the winter, more-normal harvests and slower global economic growth could prompt lower prices for those goods in 2023.

Services prices are likely to be stickier given that the labor market remains tight and wage grow is still high. Shelter costs continue to run hot, with the CPI's measure of Owners' Equivalent Rent up 6.9% YoY and 8.9% over three months ending in October. Similarly, service prices excluding shelter were still up 7.5% and 5.9%, respectively, over the same periods—far too high to give the Fed comfort that it has broken the back of inflation, even after a 0.1% monthly drop (not annualized) in October. Because wages make up a significant portion of service costs, we think services inflation will slow only modestly until wage growth slows, which will take time. We continue to expect better news on inflation in the fourth quarter and into 2023 as monetary policy tightens, the global economy slows, and supply chains catch up to demand, although the Fed will have to follow through with tighter monetary policy to ensure that inflation remains in retreat.

Aggregate Debt Ratios

Figure 24: Debt-to-GDP about Flat in Q2; Private Sector Debt Remains Low



Broad **balance sheet trends** through the second quarter of 2022 (latest data available) show modest increases in debt-to-GDP ratios across borrowing sectors (Figure 24). Overall debt-to-GDP edged down to 363%, with no material changes across borrowing sectors. After surging early in the pandemic, household and financial business borrowing relative to GDP is back around pre-pandemic levels. Nonfinancial business followed a similar pattern, but it remains modestly above its financial crisis peak. Higher interest rates could add a significant burden to heavily indebted (i.e., low- or non-rated) nonfinancial businesses or to companies unable to pass through rising costs, and we remain watchful for signs of strain in that sector. For the overall U.S. economy, especially households and financial businesses, we do not believe debt levels pose a major risk to our outlook.

Interest Rate and Monetary Policy Outlook

Figure 25: Key Interest and Policy Rates

Interest Rates (%, end of period)	11/23/22	2022:3	2022:2	2022:1	2021:4	2021:3	2021:2	2021:1
Fed funds rate target (upper bound)	4.00	3.25	1.75	0.50	0.25	0.25	0.25	0.25
3-month LIBOR	4.76	3.75	2.29	0.96	0.21	0.13	0.15	0.19
2-Yr Treasury note yield	4.46	4.22	2.92	2.28	0.73	0.28	0.25	0.16
10-Yr Treasury note yield	3.71	3.83	2.98	2.32	1.52	1.52	1.45	1.74
30-Yr Treasury note yield	3.74	3.79	3.14	2.44	1.90	2.08	2.06	2.41

Long-term **Treasury rates** rose sharply in the third quarter, reached cycle-highs of 4.24% and 4.38% on October 24 for 10- and 30-years, respectively, and retreated about 50 bp since then (Figure 25). High inflation kept the Federal Reserve on a rapid path of tightening, and short rates rose consistently. Intermediate- and long-term also rose, and the yield curve flattened as the Federal Open Market Committee (FOMC) pressed ahead with consecutive 75 bp rate hikes at its June, July, September, and November meetings, bringing the fed funds rate target range to 3.75-4.00%. Market forward rates point to a smaller—but still large—50 bp hike in December, followed by two or three additional rate hikes to push the fed funds rate to a peak of about 5.0% in the second quarter of 2023 (Figure 26).

Figure 26: Market Expects Early Peak in Rates[2]

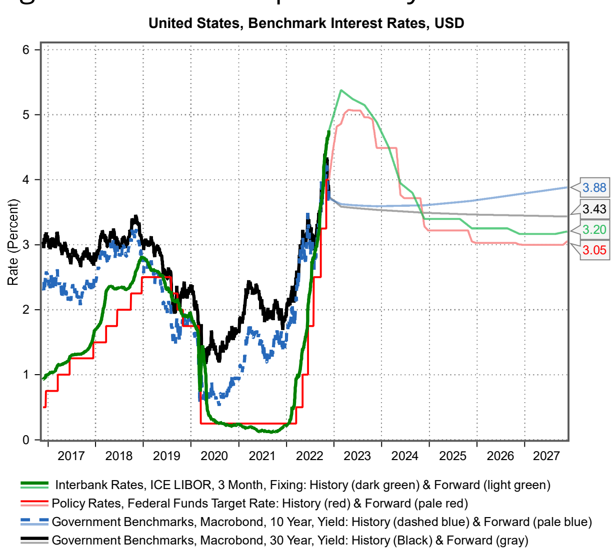
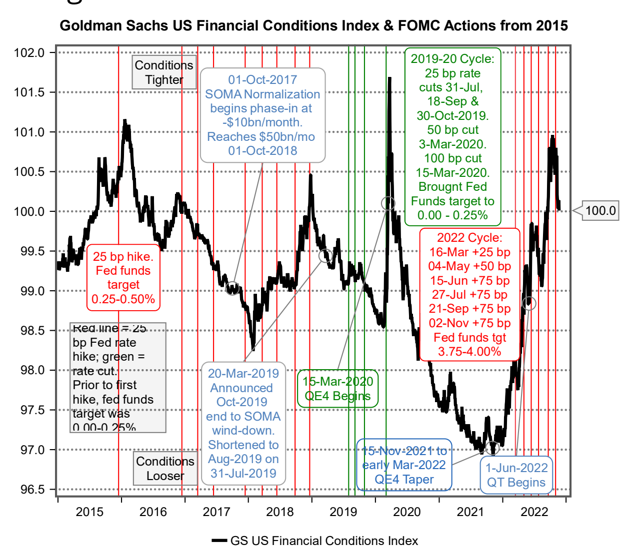


Figure 27: Financial Conditions Restrictive



The FOMC also increased the pace of securities reductions to the Fed's System Open Market Account (SOMA) during Q3. Beginning in September, the Fed has reduced Treasury holdings by up to $60 billion and agency mortgage-backed securities by up to $35 billion per month. Currently, the Fed will achieve those reductions by not reinvesting maturing Treasuries (primarily notes and bonds, with Treasury bills added to the mix if needed) and principal

[2] 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.

paydowns on mortgages. Later, it intends to sell securities if needed to reach those targets, although probably not until sometime in 2023. SOMA reductions have contributed to slower money supply growth and upward pressure on interest rates, and that will continue for some time. Financial conditions tightened in response (Figure 27), although they have eased somewhat as markets anticipate a slower pace of rate hikes followed by a pivot to lower rates soon after peaking—despite pushback by Fed officials against prospects for rate cuts in 2023.

Markets today appear to be roughly aligned with the Fed's current expectations for the peak fed funds rate, although that requires some guesswork until the FOMC updates its projections in December. In September, the FOMC's median forecast for the year-end 2023 fed funds rate was 4.6%. In his press conference following the November 2, 2022 FOMC meeting, Chairman Powell noted that members' projections had moved up, and minutes from that meeting suggest a variety of views. The market now is pricing in a peak fed funds rate of about 5.0%, or one more 25 bp rate hike than the FOMC's September projection. The FOMC could pencil in an even higher peak come December, but better than expected October CPI and PPI reports suggest that is unlikely. Of course, the FOMC cannot yet gauge when monetary policy will be sufficiently restrictive to ensure that inflation is heading toward its 2% target, but if we are right that inflation will decline quickly over the next several quarters, a peak fed funds rate around 4.75-5.00% should do it.

However, we agree with most FOMC members that rates will need to remain at that peak for somewhat longer than markets expect. We expect a mild recession to begin in the second half of 2023, which should push up the unemployment rate and slow wage growth—and service prices—over the course of several quarters. That is likely to prompt easing by the FOMC when inflation falls enough to convince committee members that it is on target, perhaps to around 3%, which could arrive in early 2024. Of course, the path of inflation and the Fed's reaction to it are highly uncertain, but we think it is unlikely that the Fed will cut rates in mid-2023 as market forwards currently project (Figure 26). Nonetheless, if the peak fed funds rate is close to current expectations but stays at that rate for six months or so longer than the market anticipates, then intermediate- and long-term rates should move only modestly higher—and remain below October peaks—despite another 100 bp or so of rate hikes by the Fed still ahead.

Credit Conditions and Outlook

Figure 28: Selected Credit Spreads and Quality Metrics

Credit Spreads (bp, end of period)	11/23/22	2022:3	2022:2	2022:1	2021:4	2021:3	2021:2	2021:1
ICE-BofAML Index, spread to worst								
US Corporate (C0A0)	145	168	163	121	95	84	82	91
US High Yield (H0A0)	464	550	592	371	330	331	318	353
US Preferred & Hybrid (P8JC)	334	319	332	240	178	170	137	166
10-Yr Interest Rate Swap Spread (bp)	(3.0)	6.1	8.3	5.8	6.3	2.3	(2.6)	3.6

	Delinquencies (% of loans)				Charge-Offs (% of loans)			
Bank Loan Quality (%) (FRB)	2022:2	2022:1	2021:4	2021:3	2022:2	2022:1	2021:4	2021:3
US Banks, Total Loans	1.19	1.24	1.31	1.28	0.22	0.21	0.20	0.20
Commercial & Industrial	1.03	1.05	1.12	1.03	0.13	0.13	0.12	0.16
Commercial Real Estate	0.73	0.75	0.79	0.85	-	-	0.03	0.04
Consumer	1.71	1.63	1.64	1.52	1.10	1.05	0.91	0.89

Bank Capital & Reserves*	2022:3	2022:2	2022:1	2021:4	2021:3	2021:2	2019:4
Common Equity Tier 1 Capital Ratio (%)	10.46	10.47	10.64	10.85	11.23	11.38	10.62
Loan-loss Reserve/Non-perf. Loans (%)	257	241	229	236	228	229	162

* Average of peer group of 31 large US banks (Source: S&P Capital IQ)

Credit spreads generally narrowed modestly in the third quarter and have been stable to narrower since the quarter ended (Figure 28). Credit fundamentals remained good but weakened in spots as tighter monetary policy and higher interest rates weighed on financial asset prices. Business bankruptcy filings edged up, while factors unfavorable to bankruptcy filings as measured by the National Association of Credit Management rose back to roughly pre-pandemic levels (Figure 29). The increase in unfavorable factors probably reflects rapidly rising interest expense, which squeezes highly leveraged companies that cannot fully pass along higher operating and interest costs. Bankruptcy filings are likely to increase.

Figure 29: Bankruptcies Low but Risk Up

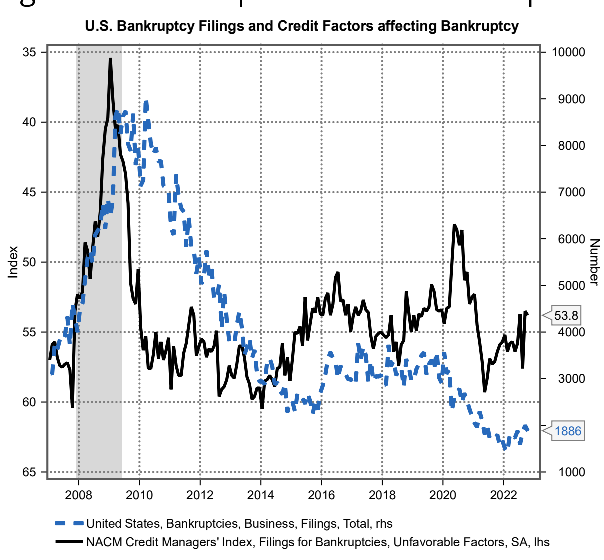
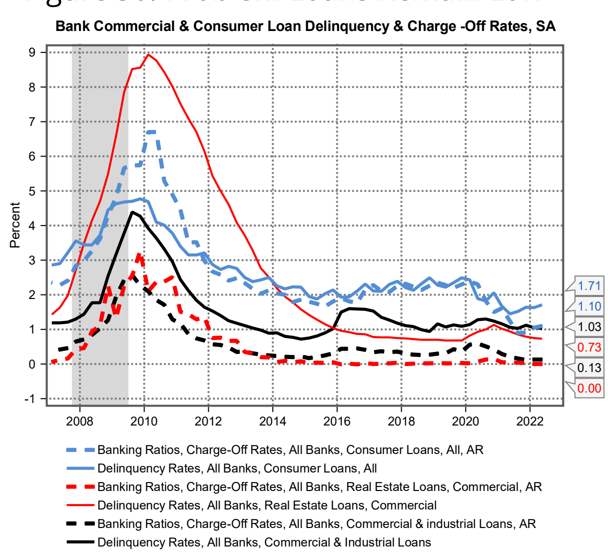


Figure 30: Problem Loans Remain Low



Bank loan quality was mostly steady in Q2 (latest data available), although consumer loan delinquencies ticked up (Figures 28 and 30). Despite that uptick, loan charge-offs are extremely low and bank loan quality remains excellent. Although we anticipate a recession in 2023, we think banks are prepared to manage through it. Despite sharply higher interest rates that have reduced the value of banks' fixed-income securities holdings, Common Equity Tier 1 (CET1) capital remains very strong. Banks' securities holdings generally are high quality, liquid assets whose values are likely to recover as they approach maturity, and we do not view these mark-to-market declines as credit problems.

In addition to strong capital, large banks have continued to raise the ratio of loan-loss reserves to non-performing loans to an average of 257% in Q3 (Figure 28). Along with healthy pretax, pre-provision earnings, loan-loss reserves are an important layer of protection for CET1, and we are happy to see more.

Turning to major borrowing groups, **household debt service** remains low. The Federal Reserve's debt service ratio (DSR) and financial obligation ratio (FOR) estimate payments on household debt and major household obligations[3] as a percentage of disposable personal income. As of 2Q2022 (latest data available), the DSR was 9.6% and the FOR was 14.3%, both up modestly but still below pre-pandemic levels (Figure 31). While higher interest rates should boost those ratios and dampen discretionary spending, it will take time, given that most household loans (excluding revolving credit, such as credit cards) have fixed terms.

Figure 31: Household Debt Still Low

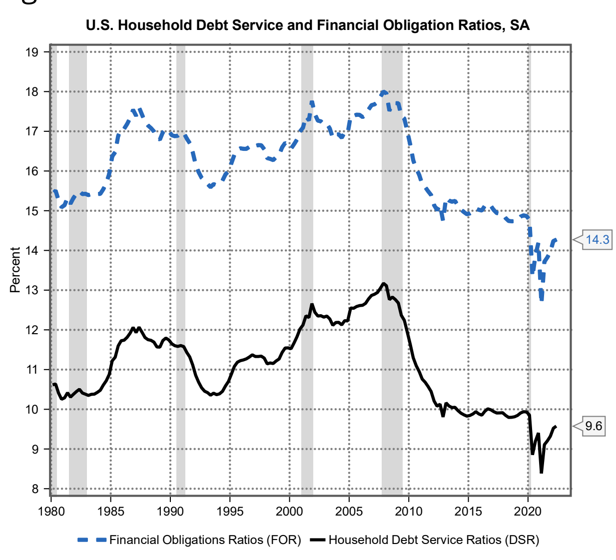
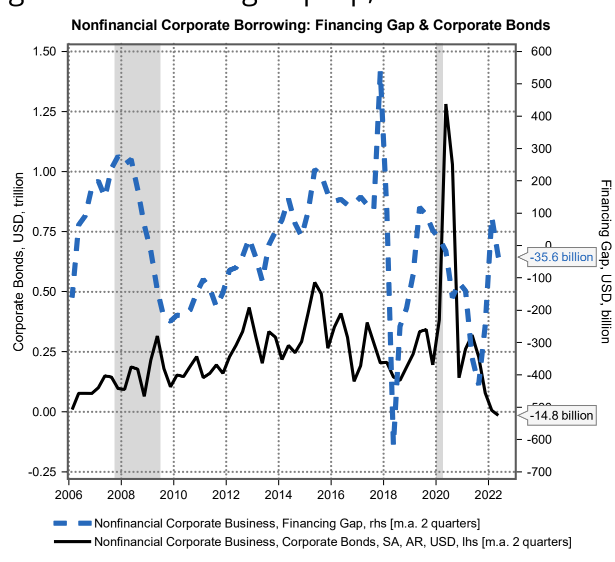


Figure 32: Financing Gap Up, Net Issuance Low



The "financing gap" (i.e., capital expenditures less internally generated funds) at nonfinancial corporations was little changed in the second quarter ($-36 billion) on a 2-quarter moving-

[3] Household debt service includes payments on home mortgage loans, student and personal loans, and automobile, marine and recreational vehicle loans. The financial obligation ratio (FOR) adds in residential rent payments for renters, property taxes and homeowner's insurance payments for owner-occupied property, and personal automobile lease payments. See https://www.federalreserve.gov/releases/housedebt/about.htm.

average basis after being sharply negative in 2021, and corporate bond issuance was slightly negative net of redemptions (Figure 32). The shift from significantly lower capital expenditures than internal funds to a roughly balanced financing position reflects both narrower operating margins from higher input costs in 2022 and higher capital expenditures to boost output or productivity. .Overall net borrowing needs should turn positive but remain modest in 2023.

Figure 33: Spreads Widen on Recession Fear

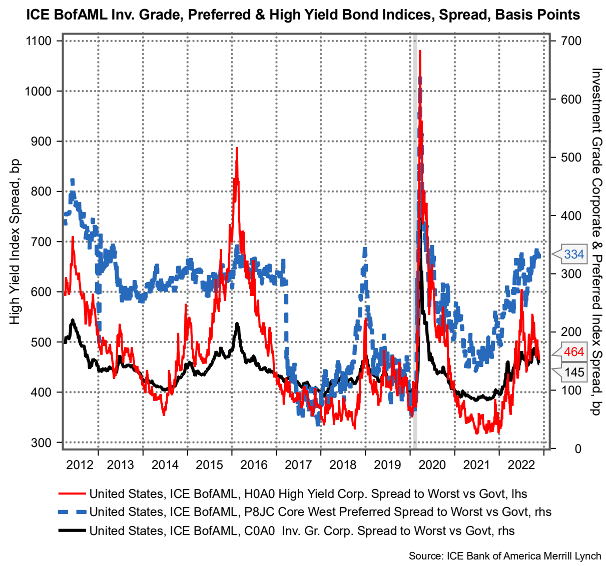
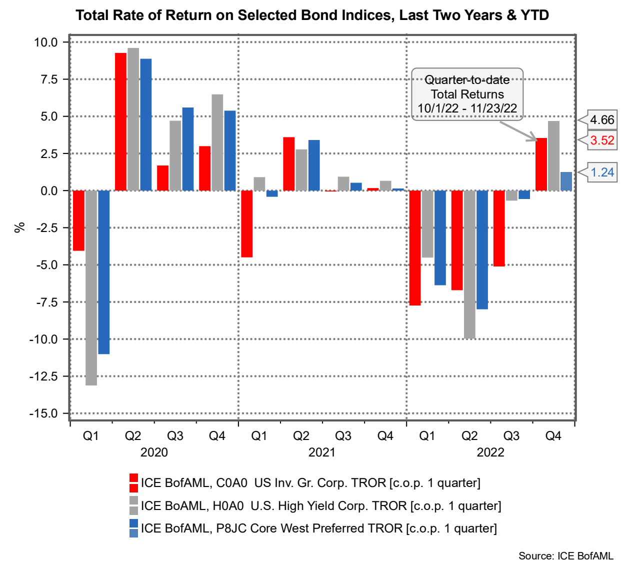


Figure 34: Risk Appetite Returning?



As noted above, tighter monetary policy and recession worries drove **credit spreads**[4] sharply wider in 2022, although spreads recovered some lost ground in recent months. From year-end 2021 through November 23, 2022, investment-grade and high-yield corporate bond spreads widened 50 and 134 bp, respectively (Figures 28 and 33).[5] Spreads on the preferred index widened 156 bp over the same period.[6]

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 of most preferred securities are above par (which is not the case currently). Therefore, we

[4] 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.

[5] 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 11/23/2022.

[6] 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 11/23/2022.

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 34 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. Fortunately, the fourth quarter so far has been a little better. Total return from January 1, 2022 through November 23, 2022 on the preferred index (-13.29%) significantly outperformed the investment-grade corporate bond index (-15.45%) but trailed the high-yield index (-10.64%).[7]

We remain confident in the credit fundamentals of most preferred issuers. The investment grade and high-yield indices are dominated by nonfinancial companies, which are exposed to rising interest rates. While that is a smaller concern for investment grade companies, it is a significant risk for many high-yield companies. In contrast, financial companies, which are by far the largest issuers of preferred securities, tend to *benefit* from rising rates. Banks today are asset-sensitive, meaning interest income tends to rise more quickly than deposit costs as interest rates move up, boosting margins. Finance companies also tend to raise their lending rates faster than their funding costs. Higher rates mean insurance companies earn more on their investment portfolios. Of course, credit risk also increases with tighter monetary policy, so there is a limit to the benefit of higher rates for financial companies. However, banks have sizable loan-loss reserves, earnings cushions, and capital to absorb potential losses in a recession. We think financial companies are well prepared for what lies ahead.

While the Fed still has more tightening to do, we think most of the upward move in rates and spreads has already occurred and believe today's yields of over 7% (with some issues over 9%) offer a foundation for potentially better returns ahead. We believe long-term investors should focus on the benefits that preferred and contingent capital securities continue to offer: moderate interest rate risk, very high income, and good credit quality.

Flaherty & Crumrine Incorporated
November 23, 2022

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