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The U.S. Economic Outlook for 2023–2024

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Introduction

The outlook for the economy is currently very fluid, with multiple realistic economic scenarios in play over the next year. The ongoing stress in the banking sector lends more credibility to the widespread narrative that a recession is imminent. Factors such as tightening lending standards, low current and expected level of industrial activity, stalled business fixed investment, and declining service sector sentiment all support that view. While the unemployment rate is still exceptionally low, the labor market appears to be cooling off meaningfully along several other key metrics, albeit from a quite overheated state.

On the other hand, consumption expenditures remain resilient, growing strongly in 2023Q1. Vehicle sales have surprised on the upside so far this year. Even while headline readings benefit from markedly lower energy prices relative to last year's, measures of trend inflation remain stubbornly high. With supply chains improving substantially, the absence of a convincing downtrend in inflation suggests demand continues to run hot. The residential construction sector appears to have adjusted to higher mortgage rates and is well positioned to fill the void in the housing market left by current homeowners

"The Michigan Model"

unwilling to sell, likely because they are locked into low-rate mortgages. Wage growth remains brisk, supporting incomes. So, there are reasons for optimism that the U.S. economy will be able to avoid a recession in 2023–24.

Our outlook lies somewhere in between these two perspectives. We expect the economy to soften by late 2023, driven by a slowdown in consumer spending. We expect a very modest increase in the unemployment rate, peaking at 4.1 percent in 2024.

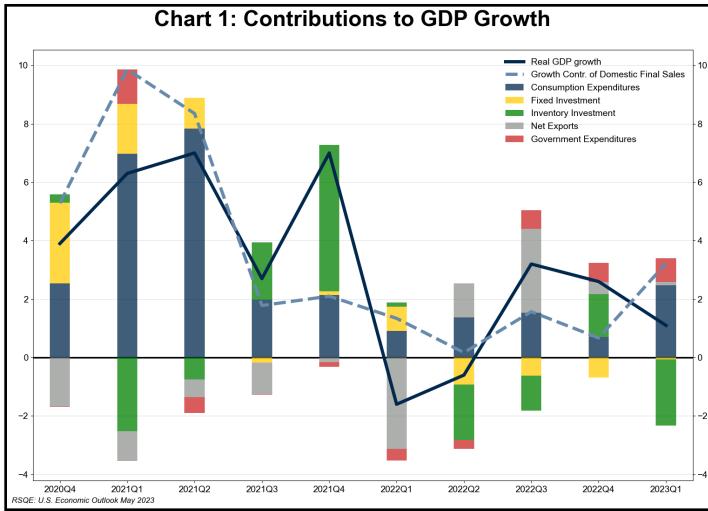
We think that the fed funds rate has already reached its terminal range for this cycle at 5.0–5.25 percent. We expect the Fed to hold the fed funds rate flat for the rest of the year, as inflation gradually falls and unemployment inches up. By early 2024, with consensus forecasts of inflation falling convincingly toward the Fed's 2.0 percent target within a year or so and the labor market cooling, we expect the Fed to start cutting rates at a measured pace. As the Fed eases, we expect the pace of real GDP growth to recover to above 2.0 percent again by 2024Q4.

We expect the current standoff over the debt ceiling to be resolved with only minor transitory damage to the economy. Still, with divided government, the debt ceiling fight will not be the last point of contention. Hence, we expect fiscal policy to continue along the path of least resistance, with some spending restraint for discretionary non-defense spending, but sizeable increases in defense spending due to the war in Ukraine and other global threats. Geopolitical and energy supply risks remain prominent, and we are monitoring the evolving situation closely.

The Current State of the Economy

The stacked colored bars in Chart 1 show the growth contributions of the major components of GDP over recent quarters, while the dashed light blue and solid black lines show the growth contribution of domestic final sales and the annualized pace of real GDP growth, respectively. The relatively weak headline growth pace of 1.1 percent in 2023Q1 masks solid fundamentals. Consumption expenditures contributed 2.5 percentage points to growth—the most since 2021Q2. After holding GDP growth back

significantly for the past three quarters, business fixed investment was virtually flat in 2023Q1. Inventory

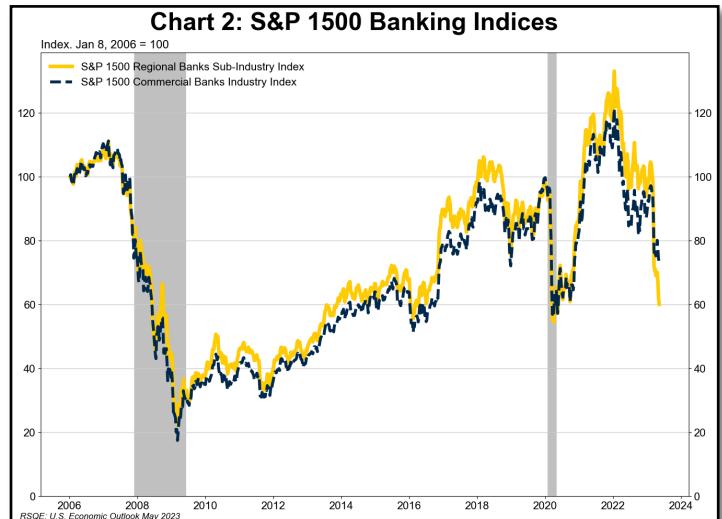


investment, which is historically very volatile, subtracted 2.3 percentage points of real GDP growth.

The banking sector has been under stress in recent months, with several banks failing and regional banks facing particular pressure. Chart 2 shows the S&P 1500 stock price indices for the broader banking industry

and for the regional banking sub-industry.¹ Normally, these two indices track each other closely, but their performance has diverged significantly since mid-March. While the entire industry has taken a hit, regional banks have fared much worse than their nationwide counterparts. This is the first divergence of this magnitude since 2003, the first year both indices are available. However, we have been unable to ascertain any clear patterns explaining the markets' focus on regional banks in the macro data on U.S. banking.

The Federal Reserve publishes weekly aggregate balance sheets for large domestically chartered banks and small (predominantly regional and community) banks.² The latter group has allocated a lower portion of their assets to government and government-sponsored enterprise debt, resulting in less direct exposure to valuation losses caused by rising interest rates. However, even before the crisis, small banks had been experiencing faster deposit outflows, which have accelerated in recent weeks. As a result, regional banks have been running down

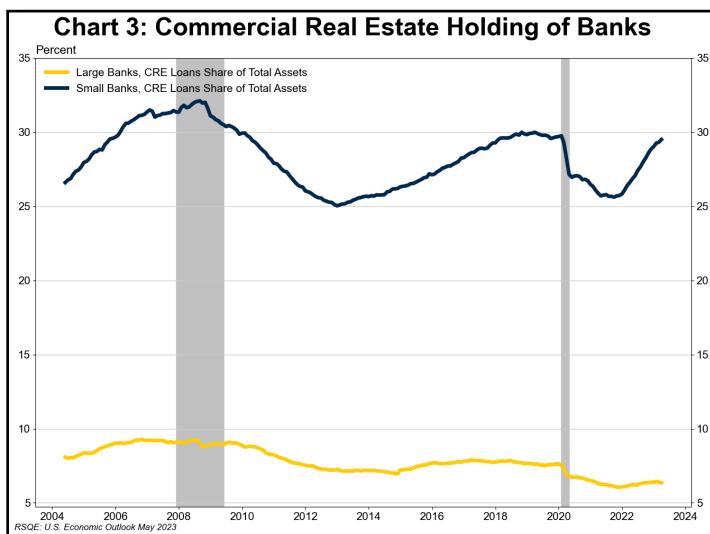


¹ The S&P 1500 banking indices cover banks present in the S&P LargeCap 500, the S&P MidCap 400, and the S&P SmallCap 600 indices.

² The Fed defines "large" banks as those in the top 25 by domestic assets. The failed Silicon Valley Bank and the First Republic Bank were classified as "large" as of December 31, 2022.

their cash reserves at a faster pace and have ramped up their usage of the Fed's repo facilities more than large banks. Still, the levels of cash reserves and repo facility use are not yet at alarming levels.

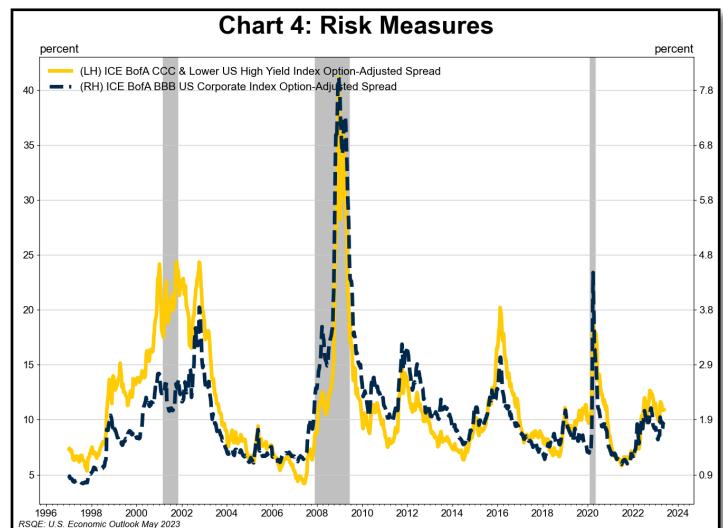
While the focus is on regional banks, the broader banking index is also down 40 percent from its peak in early 2022. Several broad developments are likely contributing to this situation. First, higher interest rates are depressing the market value of securities on banks' balance sheets, putting pressure on their capital levels. Second, markedly higher interest rates on balances offered by money market funds have led to significant outflows of deposits from the banking system. Third, the significant probability of a recession starting within the next twelve months or so is focusing markets' attention on banks' balance



sheet quality. Finally, the commercial real estate market, which is still reeling from the aftermath of the pandemic as vacancy rates remain high in many downtown districts, may also be weighing on banks. Several popular metrics of commercial real estate prices are showing depreciation of about 15–25 percent since early 2022. Many commercial real estate

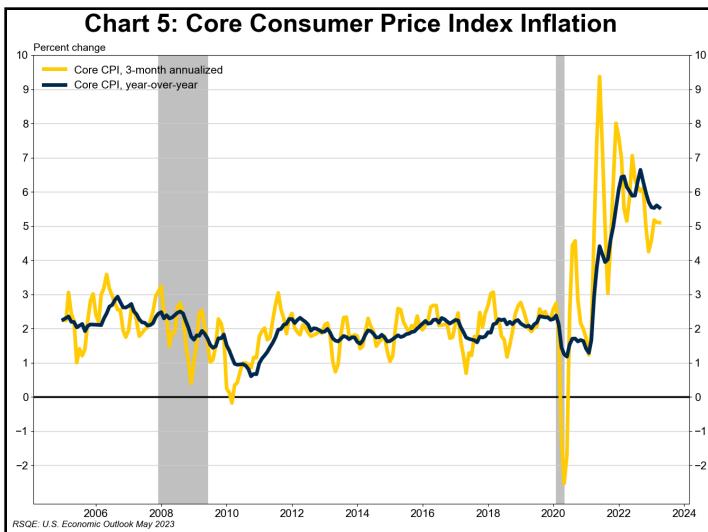
projects will likely face higher interest costs too. Regional banks have historically dedicated a much larger portion of their lending toward commercial real estate activity, shown on Chart 3, and may hence be more exposed to both the ongoing and potential future stress in the CRE space.

Overall, we believe that the stress in the banking sector will persist until banks have had time to heal their balance sheets. Many banks had already been tightening credit standards before the current stress episode began, and they are likely to tighten standards further to lower the average credit risk of their loan portfolios. This credit tightening will likely contribute to the slowdown in growth we are



expecting. While risk spreads have widened in recent months, their levels remain quite tame (as shown on Chart 4), suggesting that chances of a full-blown financial crisis remain quite low.

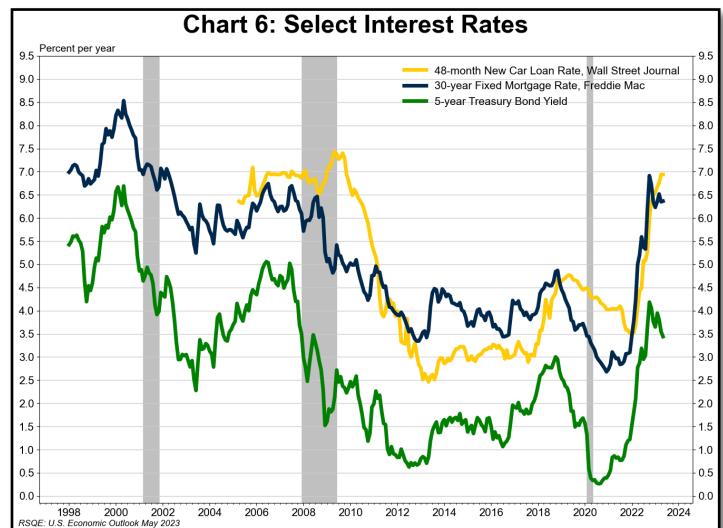
Inflation is the key determinant for whether banking stress will ease, as well as for our outlook more broadly. Considerable year-over-year declines in energy prices are contributing to ongoing declines of all-items inflation. Measures of underlying trend inflation, however, remain stubbornly high. Chart 5



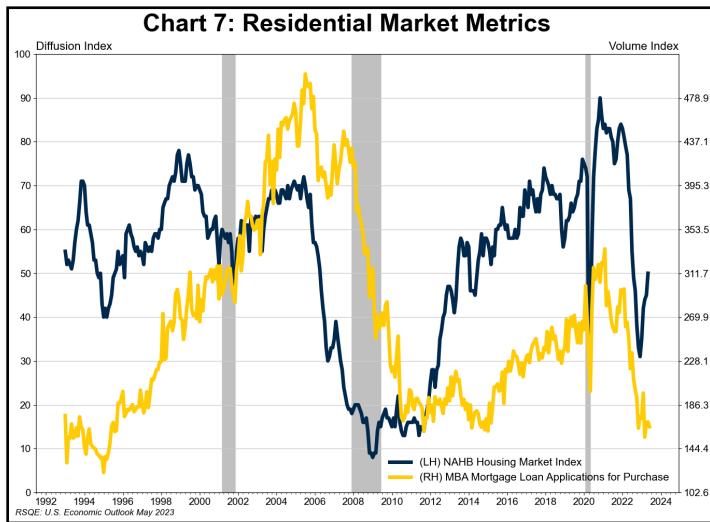
shows the 3-month pace of core Consumer Price Index (CPI) inflation, as well as year-over-year readings. Despite shelter inflation finally beginning to slow, core CPI inflation rebounded in recent months to an average of above 5 percent. Nonetheless, the Fed is widely expected to pause its monetary tightening cycle. The Fed is banking on policy

lags from the previously-administered 500 basis points of rate increases to cool off the economy without additional rate increases. The anticipated disinflation is expected to deliver gradually rising short-term real interest rates over the next few quarters.

Chart 6 shows the impact monetary policy tightening has had on select interest rates. Rates have risen sharply since the start of 2022, returning to levels not seen since the Great Recession. In recent months, the banking stress has pulled markets' expectations of future fed funds rate cuts into late 2023, pushing Treasury yields lower. Mortgage rates have followed government yields down a bit. The spread between the 30-year mortgage rate and 10-year Treasuries remains elevated though, at around 2.8–3.0 percent instead of the usual 1.5–2.0 percent, indicating that interest rate uncertainty is still



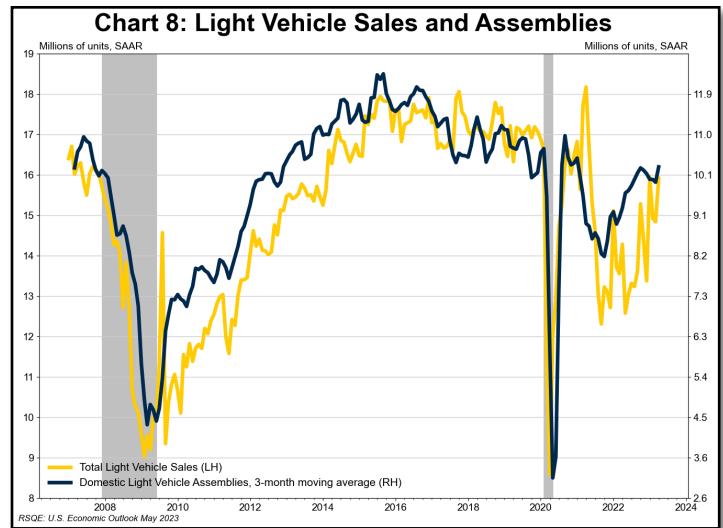
very significant. Moreover, interest rates for new vehicles, have continued to increase in recent weeks, likely reflecting rising credit risks as a possible recession draws nearer.



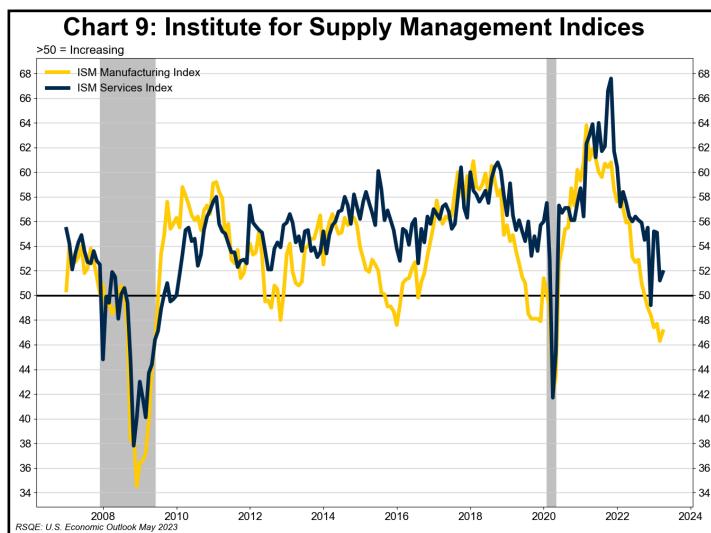
The recent pullback in mortgage rates has helped stabilize the housing market for now. Chart 7 shows the National Association of Homebuilders' Housing Market Index and the Mortgage Bankers' Association's volume index of mortgage applications for purchase. Both indices nosedived in the second half of 2022, but they have since stabilized or

improved somewhat. Moreover, current homeowners' reluctance to give up their low-rate mortgages has contributed to limited supply in the market for existing homes. The limited supply is in turn likely keeping prices from falling faster and pushing buyers into the new construction market.

Chart 8 plots annualized rates of light vehicle sales and domestic assemblies. Despite rising vehicle finance rates, the pace of sales reached nearly 16 million units in April. The pace of domestic assemblies improved considerably compared to 2022, but remains somewhat behind its pre-pandemic level. While dealer vehicle inventory is growing, the pace of growth has slowed from the second half of last year, with the inventory/sales ratios stuck far below the pre-pandemic normal. The level and the composition of dealer inventory is likely to continue constraining sales. In April, the CPI for new vehicles declined for the first time in two years. If the turnaround in prices lasts, it should relieve some of the pressure on sales from rising vehicle finance rates.



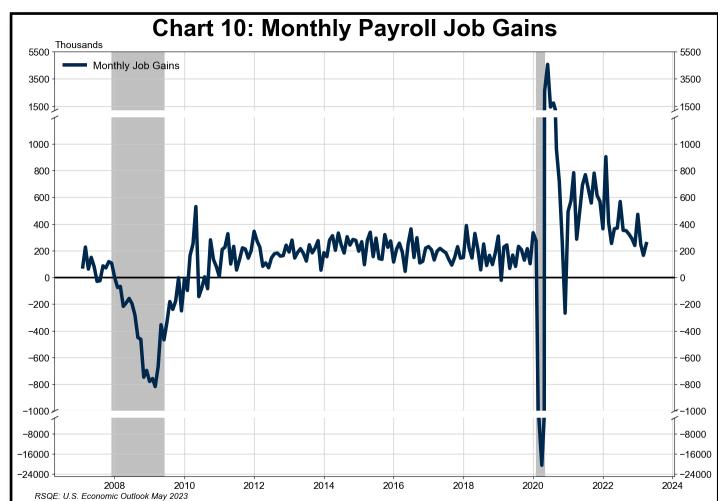
The near-term manufacturing outlook remains weak, as evidenced by the Institute for Supply Management's diffusion index for manufacturing shown in Chart 9. The service sector index has also



slowed markedly in recent months, a worrying development given that consumption of services has been the primary engine of growth over the past few quarters.

Chart 10 shows the monthly pace of nonfarm payroll job gains. Despite April job gains registering a healthy 253,000, the broader trend of slowing is evident. The

February–April average gains of 222,000 jobs were more than 300,000 jobs per month lower than in the same period in 2022. Falling job openings, rising layoffs, discharges, and new unemployment benefits claims all point to the excess heat in the labor market dissipating. Wage gains, however, remain strong. As a result, we believe the Fed is prepared to see the labor market cool off significantly to make sure price and wage inflation comes down. We expect the labor market to continue to soften well into 2024.



Overall, the state of the economy remains noisy and challenging to interpret, with many contradictory signals. We believe that the current picture is consistent with still-growing economic activity that is likely to give way to a mild contraction later this year or early in 2024.

Next, we outline several key policy and economic assumptions underlying the forecast.

Monetary Policy

The Federal Open Market Committee (FOMC) has continued to tighten its monetary policy stance in 2023 in order to bring inflation down to its 2.0 percent target. The Committee has hiked the federal

funds rate 25 basis points in all three meetings so far this year, bringing the current target range to 5.0–5.25 percent.

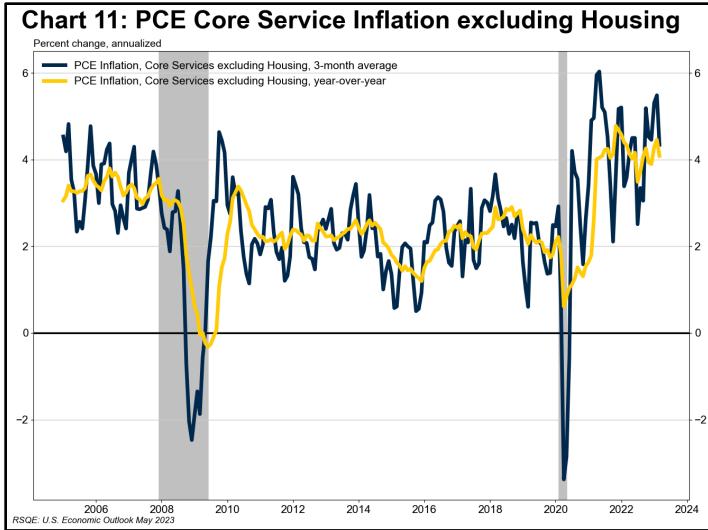
Until March, the FOMC members repeatedly emphasized that they anticipated ongoing increases in the target range. After the March meeting, the official line switched to anticipating "some additional policy firming." After the additional hike in early May, the FOMC statement shifted again, emphasizing that the committee is waiting to determine "the extent to which additional policy firming may be appropriate." We interpret this shift in communication as signaling that the Fed will now adopt a wait-and-see approach, pausing rate hikes for now.

The March FOMC meeting participants' median economic projection for the federal funds rate indicated an end to the tightening cycle at the current 5.0–5.25 percent target range. The Committee maintained its belief that inflation would continue to slow markedly this year, with the participants' median economic projection of Personal Consumption Expenditure (PCE) inflation falling to 3.6 percent and unemployment rate rising to 4.5 percent by the end of the year. Chair Powell reiterated in the press conference after the May FOMC meeting that if this forecast holds up, he does not think that rate cuts would be appropriate this year.

CPI data in the first few months of 2023 show that inflation is slowly retreating from 2022 highs, but it remains elevated. Core CPI inflation has averaged an annualized pace of 5.1 percent from January to April 2023. All-item CPI inflation has averaged 4.0 percent in that time, held back by a 4.8 percent annualized pace of declines of energy prices. As of April, year-over-year CPI inflation sits at 5.5 percent for core and 5.0 percent for all items.

Core PCE, a key metric for forecasting future inflation, increased by 4.6 percent year-over-year in March. This index has been stuck between 4.6 and 4.7 percent since December 2022. Since the middle of 2022, goods prices have remained mostly flat or declined slightly. Inflation in housing services persists as a pain point but has started to ease in 2023. Privately compiled measures of housing services inflation

also point to further easing in 2023. This leaves inflation in non-housing core services (roughly half of private core consumption), the portion of the economy likely most sensitive to wage pressures. Inflation in this segment has shown little evidence of sustained easing over the past year. The minutes from the



March FOMC meeting indicated that participants generally agreed that a slowdown in nominal wage growth would be a necessary condition to see disinflation in this metric.

The Fed's statutory dual mandate requires a balanced approach in promoting maximum employment as well as price stability. The labor market has held up well in

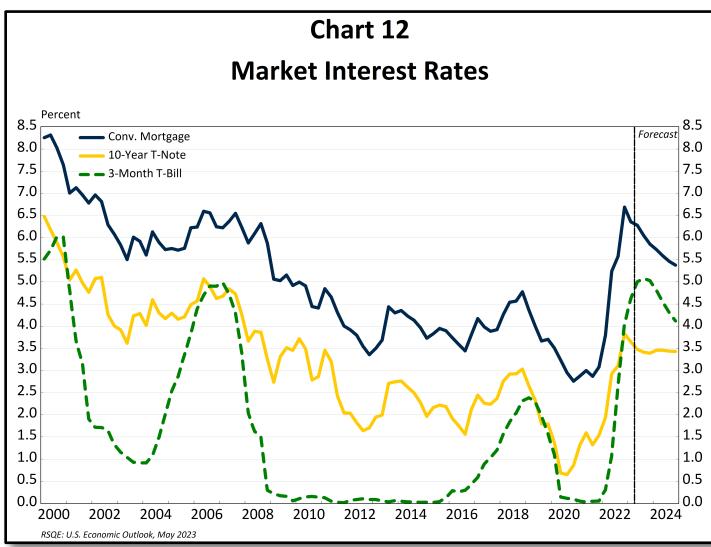
the first months of 2023 in the face of tightening monetary conditions. Total nonfarm payroll employment increased by 248,000 jobs in February, 165,000 in March, and 253,000 in April. Those gains were well below 2022's average monthly gain of 399,000 jobs, but they show that there is still juice left in the post-pandemic labor market. This resilience gives the Fed time to judge the disinflationary effects of its past monetary tightening before weakness in the labor creates any pressure to reverse course.

Most measures of inflation expectations have remained largely stable so far this year. Keeping longer-term inflation expectations in check is important for economic stability. If high inflation were to become engrained in long-term plans and contracts, it could be very costly to bring back down. It is reassuring to see the 10-year breakeven inflation rate on Treasury Inflation Protected Securities hovering largely between 2.25 and 2.5 percent this year, down from over 3 percent at the peak in April 2022. The 5-year-to-10-year inflation expectations from the University of Michigan's Surveys of Consumers had remained below 3 percent through April, but jumped to 3.2 percent in May, the highest reading in more than a decade. The preliminary May reading, however, is based on a limited sample of respondents and may yet be revised.

Since May 2022, the Fed has been reducing the size of its balance sheet, though the pace of the sell-off has been somewhat slower than initially announced. It is worth noting that the Fed provided almost

400 billion dollars of liquidity support to banks to combat the financial stress in March. However, this support did not affect the Fed's plan to shrink its balance sheet by over 70 billion dollars per month for the foreseeable future.

We think the path of monetary policy described below is the most consistent with our outlook. The Fed will hold its current 5.0–5.25 percent target range for the federal funds rate steady for the rest of 2023. We expect the Fed to start cutting rates in early 2024 as inflation slides and labor market softens,



going by 25 basis points at every other meeting. Chart 12 shows our projections for selected key interest rates. The 3-month Treasury bill rate climbs to 5.0 percent in 2023Q2 before it peaks at 5.1 percent in 2023Q3 and declines to 4.1 percent by 2024Q4. The 10-year Treasury rate slips to 3.5 percent in 2023Q2 and 3.4 percent by the end of 2024, leading to an inverted yield curve

over our entire forecast horizon. The 30-year conventional fixed-rate mortgage rate falls to 6.3 percent in 2023Q2 and to 5.4 percent by the end of 2024. Mortgage rates decline more quickly than longer term government bond yields because the excess spread that has developed between them shrinks toward more normal levels by 2024Q4.

Fiscal Policy

The Congressional Budget Office (CBO) recently released its updated 10-year baseline budget projections, which are very alarming. The CBO projects primary federal deficits to average about 3.0 percent of GDP over the next ten years, with deficits rising to over 6.0 percent when interest payments on the federal debt are factored in. The federal debt-to-GDP ratio is projected to rise by more than 20 percentage points over the next decade. It is against this backdrop that Congress is currently engaged in a fight over raising the debt limit to fund previously appropriated deficit spending. While the United

States clearly has a medium-term fiscal sustainability problem, a short-term deadline is probably not the best way to solve these long-running issues. Nor do we expect the almost inevitable agreement to result in major and immediate policy changes for mandatory spending or taxes.

Since January 19, 2023, the Treasury has been engaged in the now routine "extraordinary" measures of managing the nation's obligations while the debt ceiling binds. Recently, Secretary Yellen has declared that she cannot guarantee having sufficient cash on hand to make all required payments beyond June 1, 2023, likely due to weaker than expected revenue collections. In reality, such estimates are necessarily imprecise. It is plausible that there will be enough cash to last through the middle of June, when quarterly tax payments start rolling in. In that case, the deadline would likely shift to late July or August.

Until very recently, the White House had been using the "no negotiation" approach to negotiations, floating several risky legal strategies of neutering the debt ceiling altogether. It now appears that actual negotiations have begun. We believe that a deal is very likely, given that alternatives carry significant legal and economic risks. Given the tight schedule and limited number of days Congress is in session before the potential deadline, a short-term relaxation of the debt ceiling appears likely, possibly involving a small down payment on spending reductions by rescinding unspent Covid relief funds, for example.

A few weeks ago, House Republicans narrowly voted through their opening bid in the negotiations—the Limit, Save, Grow Act. The CBO estimated that the bill would save 4.8 trillion dollars through fiscal 2033, with the bulk due to discretionary spending caps that would send fiscal 2024 spending levels back to those of 2022 and then allow for only 1.0 percent growth every year. The bill features several Republican spending priorities, but also contains a provision effectively gutting the regulatory authority of many federal agencies, making it fairly certain to fail.

We believe the eventual compromise could look very similar to that of 2011: a commission to study ways to constrain the growth of mandatory spending, with discretionary spending caps to fall back on should the commission fail. We expect that defense spending will likely be spared. As a result, we are projecting a considerable slowdown of discretionary nondefense spending growth for fiscal 2024.

The outcome of the debt ceiling standoff is likely to have implications for topline fiscal 2024 budget figures. It is therefore not surprising that none of the twelve fiscal 2024 House appropriations bills have

been introduced yet. The new rules of the House of Representatives under Speaker McCarthy's leadership preclude packages of spending bills coming up for a vote at once, necessitating separate House votes on all twelve appropriation bills. The White House released its fiscal 2024 budget proposal in March. It features many policies contained in the original derailed Biden reconciliation deal that did not make it to the Inflation Reduction Act of 2022, such as an increase in the corporate tax rate to 28 percent and the expanded child tax credit. We judge the chances that any of these proposed policies become law to be slim.

It is also worth highlighting that the pace of sales of oil from (or, in the future, purchases for) the Strategic Petroleum Reserve (SPR) has a non-trivial impact on federal government consumption. Over the past two quarters, slower oil sales added 0.2 percentage points to the federal government's contribution to real GDP growth. If and when the SPR is eventually refilled, it would also constitute a boost to government spending.

The Covid-era moratorium on student loan payments is currently scheduled to expire 60 days either after the resolution of the student loan legal challenge or June 30, 2023, whichever comes sooner. As a result, unless the moratorium is extended again millions of borrowers will likely have to resume interest payments sometime in August. A resumption of student loan payments would reduce these borrowers' disposable incomes by hundreds of dollars per month on average—a headwind for consumption growth.

The 100 percent bonus depreciation enacted by the Tax Cuts and Jobs Act of 2017, a popular business incentive, has been reduced to 80 percent for 2023. It is scheduled to decline in 20 percentage point steps each year until 2027. The expiration of many important 2017 tax law provisions is already on the horizon. For instance, the personal tax rate cuts of 2018 are scheduled to be reversed in 2025. It is likely that these policies will take center stage in future federal budget fights, which will likely be as contentious as the current debt ceiling episode.

Table 1 contains fiscal year data and projections for the federal budget on a National Income and

	Table 1 Federal Budget, NIPA Basis (Billions of Dollars)			
	FY Forecast			
	2021	2022	2023	2024
Current receipts	4154.9	4905.4	4943.2	5022.7
% change	12.3	18.1	0.8	1.6
Current expenditures	7103.8	5992.5	6422.8	6640.5
% change	10.6	-15.6	7.2	3.4
Consumption	1230.5	1253.4	1349.2	1419.5
% change	6.8	1.9	7.6	5.2
Transfer payments	4789.4	3924.5	4024.1	4031.4
% change	14.9	-18.1	2.5	0.2
Federal subsidies	522.3	167.4	102.5	89.3
% change	-7.0	-68.0	-38.8	-12.8
Interest payments	561.6	647.2	947.0	1100.2
% change	4.2	15.2	46.3	16.2
Surplus (+) or deficit (-)	-2948.9	-1087.1	-1479.6	-1617.8
Percent of GDP	-13.0	-4.3	-5.6	-5.9

RSQE: U.S. Economic Outlook, May 2023

Product Accounts (NIPA) basis from 2021 to 2024. In fiscal 2022, current expenditures fell by 15.6 percent as most pandemic-related spending ended. Several programs such as healthcare provider relief, SNAP benefits, and the Medicare payment boost will phase out during 2023, further shrinking transfer payments. The Inflation Reduction Act, however, extended the pandemic-era

expansion of the Affordable Care Act credits through 2025.

Federal consumption expenditures are set to grow, boosted by the 2023 Omnibus, outlays related to the Infrastructure Investment and Jobs Act of 2021, strong growth of defense spending, and the eventual refilling of the SPR in the second half of calendar 2023. We project federal subsidies to continue to shrink rapidly toward pre-pandemic levels during fiscal 2023–24. Finally, federal interest expenses almost double between 2021 and 2024 as new borrowing is met with higher interest rates. In fact, the growth of interest payments over 2023–24 accounts for the bulk of growth in current expenditures compared to fiscal 2022.

The federal deficit narrowed drastically from 13.0 percent in fiscal 2021 to 4.3 percent in fiscal 2022. An 18.1 percent jump in revenues certainly helped, as outsized capital gains tax collections propelled federal revenues to 19.6 percent of GDP in fiscal 2022, the highest reading since 2000 and the fourth highest level in the post-WWII period. Predictably, these abnormal capital gains tax revenues have collapsed early in calendar 2023, owing to the poor financial market performance during 2022. Ongoing inflation, however, will still provide some support to nominal revenues in fiscal 2023–24, making sure that federal revenues keep edging up despite the economic slowdown we project. A product of modest revenue growth and rising interest expenses, the federal deficit widens to an average of 5.7 percent of GDP in fiscal 2023–24. These wide deficits will push the privately held debt-to-GDP ratio higher. We project this ratio to increase from about 73.2 percent in 2023Q1 to nearly 80.6 percent in 2024Q4.

The Housing Market

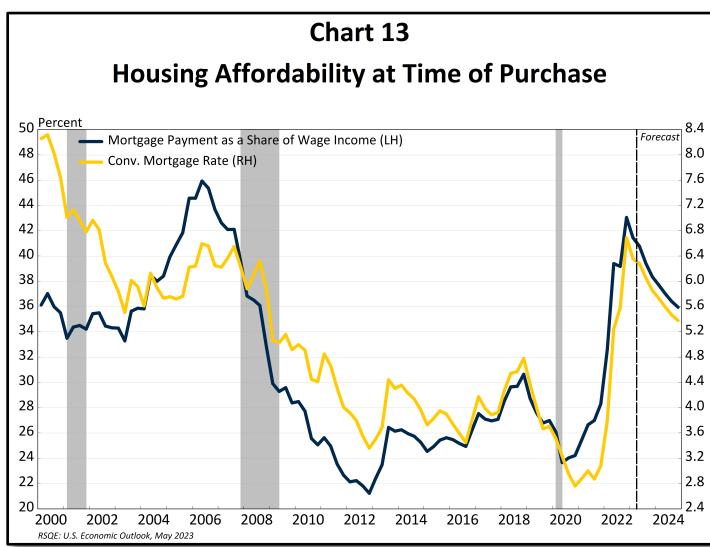
Since the end of 2021, the 30-year fixed mortgage rate has increased by more than 3 percentage points. Unsurprisingly, the surge has put a sizable dent in housing demand and has shifted the pace of price appreciation into reverse. The seasonally adjusted Case-Shiller National Home Price Index declined every month between July 2022 and January 2023, before rebounding slightly in February. The year-over-year appreciation rate collapsed at an unprecedented pace, falling from 20.7 percent in April 2022 to 2.1 percent in February 2023. Nonetheless, the decline in demand seems to have stabilized for now and some housing indicators have even started to improve. We judge that the housing market has not hit bottom on most metrics just yet, though we expect the remaining correction to be marginal, avoiding large volumes of distressed sales or mortgage defaults with major spillovers to the rest of the economy.

After declining for most of last year, annualized sales of new single-family homes have rebounded modestly in recent months, from an average of 598,000 units in 2022Q4 to 651,000 units in 2023Q1. The collapse of existing single-family home sales appears to have stalled for now. The pace of existing single-family home sales fell from 5.6 million units in January 2022 to 3.6 million in January 2023, before rebounding slightly to 4 million in March. Leading indicators of demand for existing homes are showing no clear signs of a turnaround. Mortgage purchase applications have been hovering around the same level for several weeks. Pending home sales had increased modestly in February but fell again in March. In December of last year, the NAHB's Housing Market Index plunged to levels last seen during the first months of the pandemic, but it has been on a slow-but-steady rebound since. The University of Michigan Surveys of Consumers' sentiment index of conditions for buying a home saw modest improvements in January and February but retreated to its December level in the preliminary May report.

Depressed demand for housing effectively ended the construction expansion by the middle of last year. The annualized pace of single-family housing starts fell from nearly 1.2 million in March 2022 to 804,000 in November, before stabilizing around 830,000 units in the first months of 2023. The multi-family market has been holding up much better, with first quarter starts running at a 551,000-unit average pace, or 3.1 percent above the pace in 2022Q1. The months' supply of new single-family homes for sale fell from a peak of 10.1 months in September 2022 to 7.6 months in March, still indicating some supply

overhang in the market for new homes. Months' supply in the market for existing single-family homes tightened slightly to 2.8 months in March. This comparison between the markets for existing and new homes suggests that existing sales are still constrained by low levels of inventory, as homeowners are disincentivized from moving by high mortgage rates. The resulting tightness in the market for existing homes is likely cushioning prices against larger declines.

The National Association of Realtors' Housing Affordability Index fell to its worst level since 1985 in October of last year and improved only marginally since. Chart 13 plots a similar measure of affordability that we calculate—the ratio between a mortgage payment on a newly bought home and average wage income.³ Despite the run-up in house prices during the pandemic, low mortgage rates kept housing reasonably affordable throughout 2021. High mortgage rates have changed the situation drastically, and affordability cratered during 2022, returning to levels last seen in late 2006. We estimate that the share of average wage income that would go toward a mortgage payment on a newly purchased home peaked at 43.1 percent in 2022Q4. It should start to improve this year as mortgage rates decline.

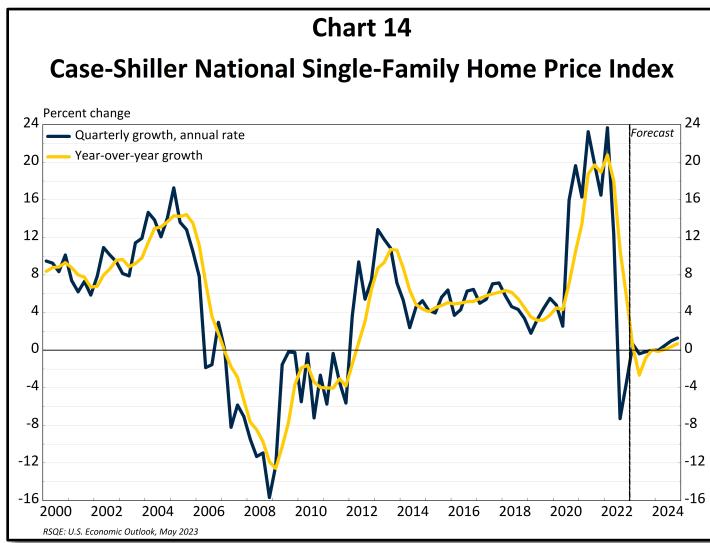


We do not foresee a large increase in distressed sales or mortgage defaults. The Mortgage Banking Association's Mortgage Credit Availability Index suggests that mortgage lending standards have remained much more conservative over recent history than during the run-up to the financial crisis. Mortgage delinquency rates and foreclosures remain very low. In the absence of a severe

recession with widespread job loss, we expect the housing market to hold up much better in this cycle than it did in the aftermath of the 2008 financial crisis.

³ The mortgage payment is computed assuming no down payment using the contemporaneous average conventional mortgage rate. As a proxy for the mortgage size we index the median home price in 2012 to cumulative house price growth since that time as measured by the Case-Shiller Home Prices Index. Average wage is computed by dividing total wage income by employment level in the BLS' household survey.

Chart 14 shows the historical and forecast paths of year-over-year and annualized quarterly rates of home price appreciation as measured by the Case-Shiller Home Price Index. Based on an internal nowcasting model, we have penciled in a slight temporary increase of 0.2 percent for national house



prices in the first quarter of 2023 (compared to the 0.9 percent decline recorded in the fourth quarter). We project that prices will fall modestly in the second and third quarters. After that, a slowdown in overall economic conditions will hold prices from appreciating meaningfully until the second half of next year. In year-over-year terms, we are forecasting the Case-Shiller Home Price Index to fall by

2.6 percent in 2023Q2 and to hold flat in nominal terms from 2022Q4 to 2023Q4. The Index grows by only 0.7 percent year-over-year in 2024Q4.

Energy Markets

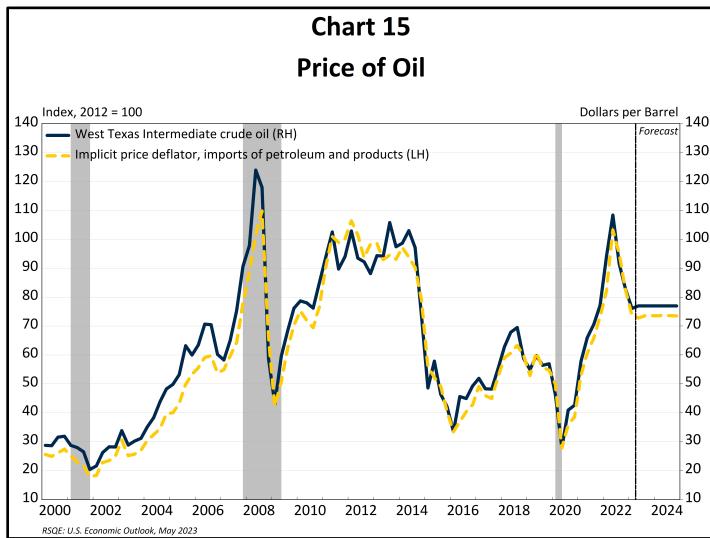
Energy markets have continued to oscillate, albeit with prices markedly down from the highs of 2022. The price for West Texas Intermediate crude oil (WTI) averaged 76 dollars per barrel in 2023Q1, significantly lower than the 2022 average of 95 dollars per barrel. The U.S. benchmark oil price has spent most of 2023 in the 70–80 dollars per barrel range.

Oil-exporting countries have attempted to sustain higher prices with announced production cuts. In February, Russia declared it would reduce crude oil production by 0.5 million barrels per day (bpd), roughly 5 percent of its total output. In early April, the Organization of Petroleum Exporting Countries and its allies (OPEC+) announced further production cuts of 1.4 million bpd. The International Energy Agency (IEA) expects production from non-OPEC+ countries to grow by 1 million bpd in response, partially but not fully offsetting the announced cuts.

Despite international sanctions on Russian energy exports by the European Union (EU) and the Group of Seven (G7), Russia continues to be a significant oil exporter. Having redirected most of its oil exports from EU and G7 countries towards India, China, and other countries not imposing sanctions, total Russian export volumes have stayed strong. Estimates from the IEA suggest that Russian oil exports in March 2023 were the highest since before the Russian invasion of Ukraine in February 2022.

Domestic production of crude oil continues to grow, averaging 12.5 million barrels per day in January and February, up over half a million barrels per day from the 2022 average. The total exploratory rig count, as reported by Baker Hughes, continues to hover below its pre-pandemic level. Capital expenditures from domestic publicly traded oil companies continue to grow, but they also remain below pre-pandemic levels. Releases from the U.S. SPR have slowed significantly from the rapid pace in 2022. Still, despite periods of low oil prices this spring, officials have delayed beginning to refill the reserve until the second half of 2023.

Natural gas prices at the Henry Hub have averaged just 2.6 dollars per thousand cubic feet this year, significantly down from the average of 6.65 last year. A mild winter pushed domestic natural gas



U.S. natural gas.

consumption to five-year lows in January, resulting in spring storage levels significantly above their five-year average. Similarly, storage levels in Europe at the end of the heating season are the highest they have been in five years. Nonetheless, exports of liquefied natural gas (LNG) to Europe will likely remain elevated, and the newly reopened Freeport LNG exporting facility will boost demand for

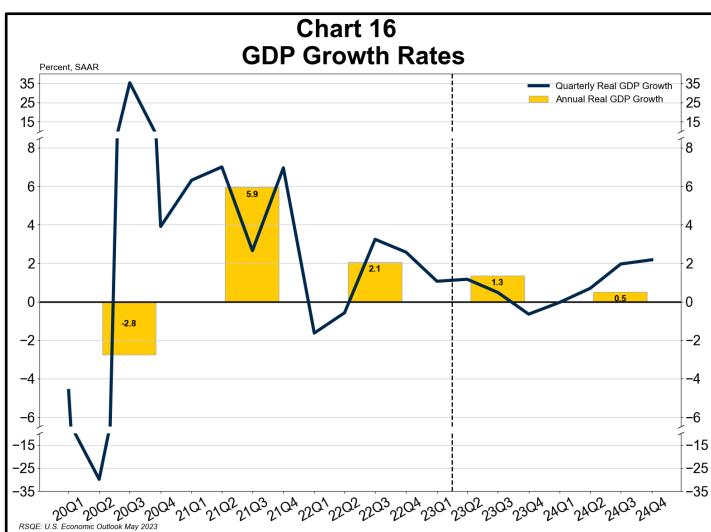
Chart 15 shows our forecast for WTI prices in blue, and the implicit price deflator for imports of petroleum in yellow. We expect the price of WTI to hold steady at 77 dollars per barrel through 2024.

Production cuts from OPEC+ are partially offset by increased production from non-OPEC countries and by lower demand due to slowing economic activity, leading to a roughly balanced energy market.

The implicit price deflator for imported petroleum products has historically been a more relevant metric for domestic gasoline prices. Imported oil prices are driven by oil price benchmarks other than the WTI. We expect the Brent–WTI price spread to remain approximately constant and the price for imported petroleum to stay steady through 2024.

The Forecast for 2023–2024

The post-pandemic economic landscape remains uncertain, with several realistic but diverging scenarios. The recent stress in the banking sector has added to the pre-existing uncertainty. The extent of trouble in the broader financial sector, however, is hard to assess. The first-quarter GDP report, which largely covered economic activity not yet affected by the banking woes, suggested strong momentum. A serious credit crunch is possible, as banks and financial institutions could try to shore up their balance sheets by lending only to the safest borrowers. A severe recession could be the result. Recent dynamics of credit spreads, however, do not suggest that a large credit crunch has started. Alternatively, the strong economic momentum could heal the banking malaise through low default rates and strong loan demand, while the Fed remains hesitant to stomp on the policy brake out of fear of triggering more banking turmoil. In this outcome, the yield curve could become less inverted which would also help banks to heal. Our outlook features some elements of both scenarios, with the path for real GDP somewhere in between. We do expect further tightening of credit standards to take a bite out of consumption growth in the second half of the year, contributing to a broader economic slowdown. We also think the Fed is done raising rates, despite measures of trend inflation and wage pressures not yet showing meaningful deceleration. The Fed treads gingerly in part because raising rates further could exacerbate the banking stress.



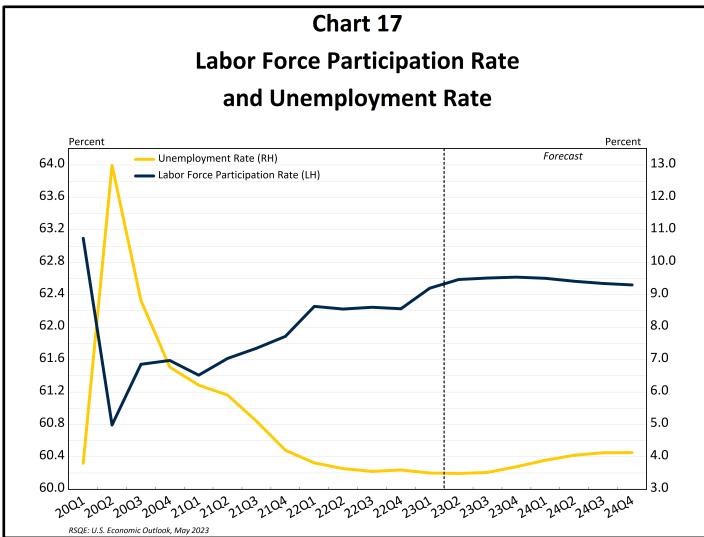
- While the headline real GDP growth rate of 1.1 percent was disappointing, the composition of growth suggests that the U.S. economy had plenty of momentum prior to banks coming under stress. Final sales of domestic product to domestic purchasers grew at a 3.2 percent pace.
- We expect headline growth to slow but to remain positive in 2023Q2–Q3.
- By 2023Q4, economic momentum fades, as the effects of prior monetary policy tightening accumulate and scarcer credit bites. Headline growth turns slightly negative in 2023Q4–24Q1, with a cumulative contraction of about 0.2 percent of GDP.
- By early 2024, conditions warrant some monetary policy easing, which helps GDP growth to rebound above the 2.0 percent pace by 2024H2.
- Despite growth ramping up late in 2024, weak growth readings late in 2023 and early in 2024 contribute to the slowdown of calendar year GDP growth from 1.3 percent in 2023 to 0.5 percent in 2024.

Table 2
Contributions to the Growth of Real GDP
(Average quarterly contributions, percentage points at annual rate)

Real GDP (% change, AR)	'23Q1	'23Q2	'23H2	'24H1	'24H2
Contributions to real GDP growth	1.1	1.2	-0.1	0.3	2.1
Final sales to domestic purchasers					
Consumption	3.2	0.9	-0.5	0.0	1.7
Nonresidential fixed investment	2.5	0.8	-0.8	-0.3	0.8
Residential investment	0.1	0.2	0.2	0.0	0.5
Government purchases	-0.2	-0.2	-0.0	0.1	0.2
Net exports	0.8	0.2	0.1	0.1	0.3
Inventory investment	0.1	0.1	0.4	0.5	0.1

RSQE: U.S. Economic Outlook, May 2023

- Consumption expenditures contributed 2.5 percentage points to 2023Q1 growth, the strongest reading in 7 quarters. Light vehicle purchases accounted for about 0.6 percentage points of the total.
- The surprise acceleration of consumption contributed to the rundown of inventories, with the latter subtracting 2.3 percentage points off growth.
- About half of the sizeable 0.8 percentage point contribution from the government was due to the slowing pace of sales from the Strategic Petroleum Reserve.
- We project consumption growth to stall in 2023H2 and 2024H1, driven by tightening credit, high interest rates, and a gradual return to pre-pandemic patterns of consumption.
- As the economy goes through a soft patch, we expect limited investment contribution to growth. By 2024H2, with the Fed easing policy, investment rebounds to add about 1.0 percentage point to GDP growth.

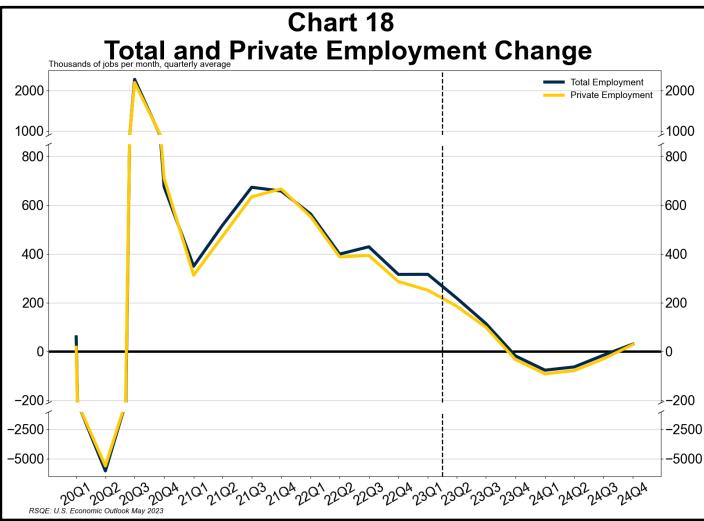


- The labor market remains tight despite the Fed's recent rapid monetary tightening. The unemployment rate has ranged between 3.4 percent and 3.7 percent for the past year, registering 3.4 percent in April 2023.

- After flatlining throughout most of 2022, labor force participation is trudging upwards, rising from 62.2 percent in November 2022 to 62.6 percent in April 2023. The participation rate is inching closer to the 2014–19 average of 62.9 percent.

- The labor force participation rate remains constant at the current 62.6 percent in our forecast until a slight dip to 62.5 percent by the end of 2024 due to labor market softening. The lack of a further rebound reflects the limited number of people remaining to coax back into the labor force post-pandemic.

- Tighter monetary conditions start to take a toll on the labor market later this year. The unemployment rate gradually rises from 3.5 percent in 2023Q2 to 3.7 percent in 2023Q4, reaching as high as 4.1 percent in mid-2024.

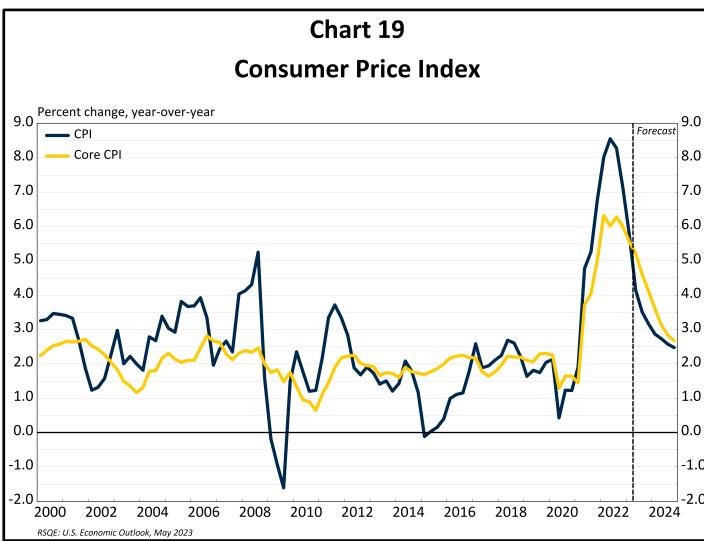


- Payroll employment gains continue a mostly downward trend but remain strong in the face of climbing interest rates. Payroll employment has added an average 285,000 jobs per month in 2023, below the 2022 average of 399,000.

- Despite the rapid decline in housing starts, employment in the construction sector has held up well so far in 2023 due to a backlog of projects started earlier. So far, employment in financial services has also withstood the stress experienced in the banking sector.

- The downward trend in job gains continues in the forecast, slipping into job losses by 2023Q4. The economy sheds 522,000 jobs between 2023Q4 and 2024Q3 before adding 90,000 jobs in 2024Q4.

- The government sector keeps adding jobs through 2024, finally reaching its pre-pandemic employment level by 2024Q4.



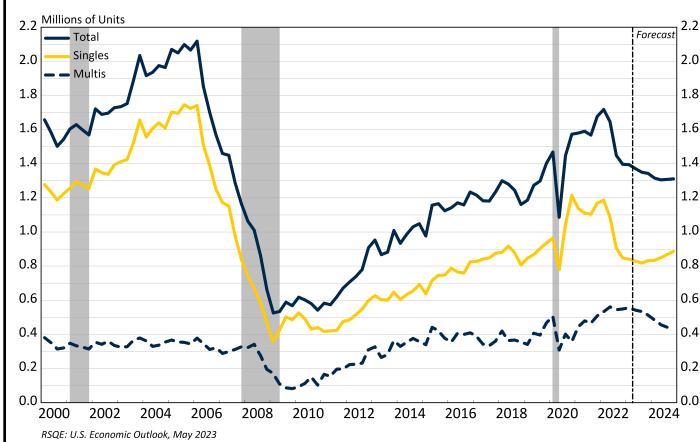
- All-items CPI inflation came in at a 3.8 percent annualized monthly pace in 2023Q1, while core inflation registered a 5.0 percent pace. Food and energy price inflation, which ran high in 2022, has slowed significantly in the first few months this year. Shelter and other non-energy services inflation remain elevated, with the former showing signs of slowing in 2023.

- We project significant progress on inflation over the next year as consumers pull back due to higher interest rates and the rental market cools.

- Core CPI inflation registers 5.2 percent year-over-year growth in 2023Q2, 4.1 percent in 2023Q4, and 2.7 percent in 2024Q4. Core CPI inflation is expected to stay above all-items inflation throughout the forecast, with food and energy price growth lagging behind.

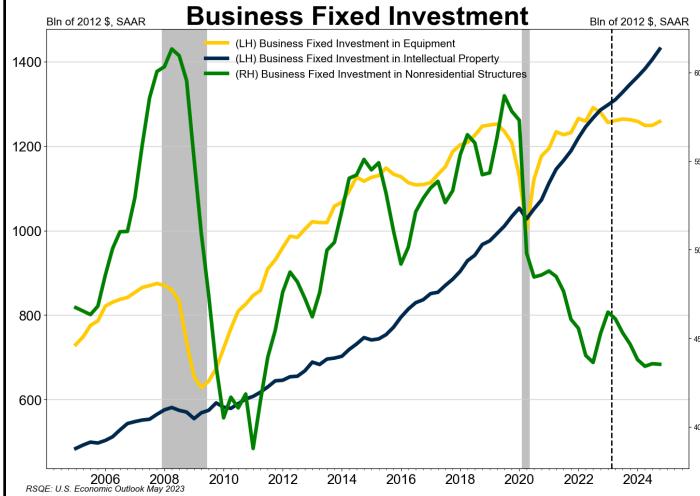
- The year-over-year change in the PCE deflator, the Fed's target measure, falls from 3.9 percent in 2023Q2 to 2.3 percent in 2024Q4.

Chart 20
Housing Starts



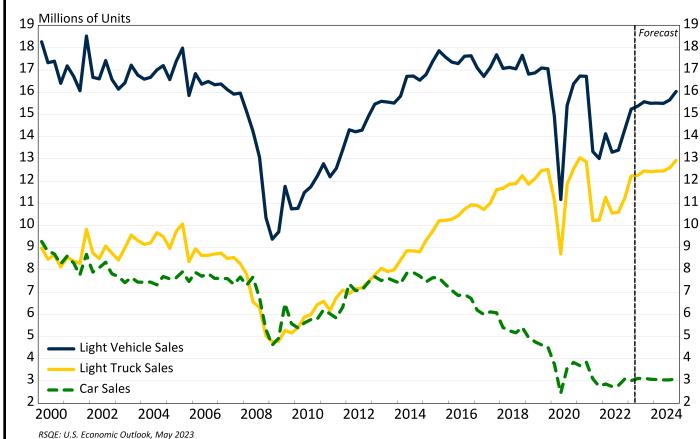
- The annual pace of single-family housing starts has stabilized in recent months around 840,000 units, a welcome development after the rapid construction bust of last year.
- Multi-family housing starts on a quarterly basis held above the 500,000 unit-pace for the past year and a half.
- With the recent peak in mortgage rates behind us, the pace of single-family starts bottoms out at 818,000 units in the third quarter of 2023 before embarking on a slow recovery.
- Single-family starts improve to 886,000 by 2024Q4, as interest rates recede and economic growth accelerates.
- As a wave of new supply comes to the market and a slowing economy puts further downward pressure on rents, multi-family starts fall modestly throughout the forecast. They slide from 555,000 in 2023Q1 to 483,000 in 2024Q1 and 426,000 in 2024Q4.

Chart 21
Business Fixed Investment

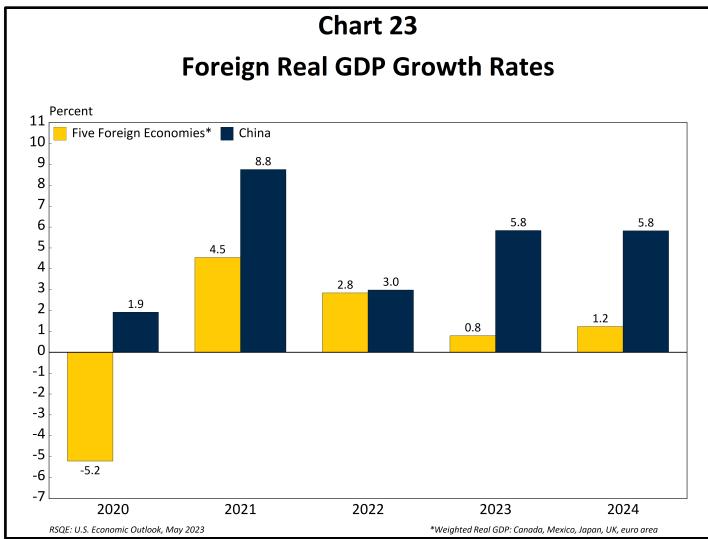


- Overall investment in equipment falls by 1.0 percent in 2023, despite rapid 10.9 percent growth in new vehicles investment due to the rebound in vehicle sales. In 2024, investment in equipment remains lukewarm, shrinking by a further 0.6 percent.
- Investment in nonresidential structures saw a temporary rebound in the past two quarters, supported by spending on new microchip factories, and mining and exploration.
- We project nonresidential investment to resume its downward slide in 2023Q2 and to bottom in 2024, held back by tight credit due to the regional banking turmoil.
- Investment in intellectual property compensated for weakness in nonresidential investment last year and continues to grow solidly throughout our forecast, by 5.3 percent this year and 5.7 percent in 2024.

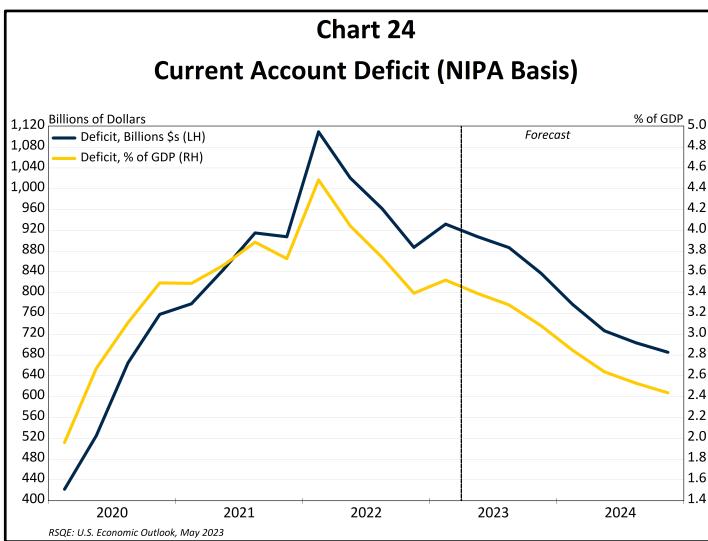
Chart 22
Light Vehicle Sales



- With the headwind from supply shortages dissipating, the pace of light vehicle sales rose sharply from 13.4 million units in 2022Q3 to 15.2 million in 2023Q1.
- The monthly sales pace exceeded 15.9 million in January and in April, possibly responding to generous incentives for electric and hybrid vehicles.
- The pace of sales is expected to stall for about a year at around 15.5 million units, as the economy goes through a soft patch and high vehicle financing interest rates bite.
- As economic growth returns in the second half of 2024, and interest rates fall, vehicle sales turn up, topping the 16 million unit pace.
- Sales of cars are expected to be broadly flat over the forecast, with light trucks sales accounting for the bulk of growth in 2024.



- To forecast demand for U.S. exports, we construct a trade-weighted index of real GDP for six of our major export markets: Canada, Mexico, China, Japan, the United Kingdom, and the euro area.
- Calendar year 2022 was the first time in decades that GDP growth in China was close to that of the other five countries. China's "zero Covid" policy and multiple disease outbreaks leading to local lockdowns were behind the slow growth.
- Economic growth in the United Kingdom and the Eurozone stalls early in 2023. In 2023H2, Canada and Mexico slow while growth in Europe inches up. As a result, the five-economy weighted GDP growth rate drops to just 0.8 percent. In 2024, growth rebounds modestly to 1.2 percent.
- In the absence of major escalation of tensions over Taiwan, we expect real GDP growth in China to accelerate to 5.8 percent in 2023–24.



- The current account deficit shrank from 4.5 percent of GDP in 2022Q1 to 3.5 percent in 2023Q1, owing to waning imports and rising energy exports.
- Overall, both exports and imports pull back in 2023–2024 relative to GDP. Still, exports are propped up by oil, LNG, and related products, as Russian supply continues to be sanctioned.
- Imports are pulling back partially due to onshoring efforts and slowing investment activity. Additionally, as the labor market weakens later this year and early next year, the projected decline in consumer spending puts another dent in import growth.
- The current account deficit continues to converge towards its pre-pandemic level of around 2 percent of GDP throughout our forecast, reaching 3.1 percent in 2023Q4 and 2.4 percent in 2024Q4.

Risks to the Forecast

Our forecast is subject to important risks. The largest set of concerns are related to the looming stress points in the banking sector. Additional uncertainty is still associated with the Federal Reserve's campaign to bring inflation back down to its target and the economic costs it will entail. An important tail risk to the economy is the possibility that the United States will not successfully resolve the ongoing standoff over the debt ceiling.

The ghost of the 2008 financial crisis is still on many people's minds. It is thus no surprise that when three sizeable banks fail in quick succession, predictions of imminent doom spread. Our judgement is that a full-blown financial crisis is quite unlikely this time around. This view, combined with the Fed's

aggressive policy response, means that our baseline forecast includes only a limited impact of the current banking stress on the real economy. Nevertheless, a more widespread banking crisis is a significant downside risk to our forecast. If more banks collapse, depositors and other sources of financing quickly flee for safe assets, and the Fed might not be able to contain the spread in time. As a result, lending might freeze or decline significantly. This scenario would have major impacts on investment and business growth in general, making a deep recession much more likely. On the other hand, it is possible that the banking sector has seen the worst for now, and lending standards will not tighten anymore, an upside risk to our forecast.

There are at least two stress points that could result in more disruption to the banking sector. The first stressor is what contributed to the downfall of the Silicon Valley Bank and Signature Bank: the likely very significant unrealized capital losses on banks' insufficiently hedged holdings of U.S. government bonds. The second stressor is the looming possibility of widespread defaults in the commercial real estate sector. Since the beginning of the pandemic, with offices emptying out and shopping shifting online, this sector has been under stress. If hybrid work schedules linger, many debt-financed CRE properties in city cores may have to default. Moreover, it is imaginable that defaults in commercial real estate could exhibit the contagious behavior residential real estate did during the 2008 crash—with neighboring properties going under when one defaults. That sort of contagion would be a major source of trouble for the regional and community banks.

Another source of uncertainty is the speed at which inflation will continue to normalize. A string of alarming data releases would likely motivate the Fed to resume its tightening of monetary policy, with additional costs to housing, banking stability, and investment. On the other hand, inflation could fall more quickly than we expect. Though core inflation remained unacceptably high in the latest CPI report, some of the persistence was caused by possibly temporary increases in specific categories, such as used cars. A rapid decline in inflation would provide room for the Fed to start cutting rates earlier than we anticipate and limit the risk of a recession later this year.

So far, the Fed's tightening has not inflicted much damage on the real economy outside of the housing sector, while inflation has moderated somewhat. Our baseline forecast is that the expected

easing in the labor market and an ensuing mild downturn is coming later this year and early next year. However, it may well turn out that the economy has enough momentum that improving supply chains, higher labor force participation, and ongoing economic normalization will allow the Fed to achieve a soft landing. This scenario is an upside risk to our forecast.

An even more dramatic upside risk scenario is also possible, in which the economic momentum proves very persistent and the economy shrugs off the previous monetary tightening. In this "no landing" scenario, inflation would likely remain elevated, while the Fed would hesitate to raise rates much higher out of fear of triggering further stress in the banking sector.

Our baseline forecast assumes that housing prices will fall slightly and stay almost flat until the second half of 2024. Nevertheless, the most recent (February) Case-Shiller National Home Price Index reading showed an increase of 0.2 percent month over month. Several other indicators also showed signs of optimism. While we consider it premature to declare a broader trend, a stronger-than-expected rebound in the housing market is certainly possible.

As of this writing, the U.S. debt ceiling stalemate does not appear to be close to a resolution, and it represents a tail risk for the economic outlook. We believe that a sustained breach of the so-called "X date" at which the Treasury's extraordinary measures will be exhausted could precipitate a sharp and immediate economic contraction. A breach could happen as early as the beginning of June. At present, it remains a low-probability event. Talks are ongoing, and many participants are invested in finding a solution. Still, the razor-thin majority in the House of Representatives may weaken leadership and empower small groups of members to block a potential deal.

Our fiscal policy path assumes that the debt ceiling stand-off ends with a negotiated deal, but the chances that the White House would choose to pursue one of several possible risky legal strategies are non-negligible. Such an outcome, if successful, could reduce the leverage of House Republicans, possibly resulting in more spending and wider near-term deficits.

Geopolitical risks remain prominent. A dramatic escalation of the war in Ukraine could bring about secondary sanctions on countries helping Russia evade Western trade restrictions. The already tense

relationship with China could snowball into an open trade and political conflict. Both developments would bring back supply chain stress and likely cause inflation to re-accelerate, darkening the economic outlook.