2023 US Economic Outlook: Bad moon rising

- **We expect the FOMC to tighten another 100bp: 50bp in December and 25 bp in both February and March**
- **The almost 500bp of expected cumulative hikes is already delivering a commensurate tightening of financial conditions...**
- **...which we believe will tip the economy into mild recession later next year**
- **Even with a modest slowdown and with firms hoarding labor, we think the economy could shed over a million jobs**
- **Inflation should moderate with a softer labor market, stronger dollar, and unwinding of pandemic distortions**
- **With falling inflation and an unemployment rate rising toward 5%, we look for the Fed to ease up on policy by early '24**
- **Calibrating monetary policy to maintain a soft landing will prove to be a very difficult task**
- **But we don't see the need for a big recession to bring the economy more into balance**

Economic and Policy Research

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Table 1: US economic forecasts

	3Q22	Forecasts 4Q22	1Q23	2Q23	3Q23	4Q23	2022 %q4/q4	2023 %q4/q4	2024 %q4/q4
Real GDP (%q/q, saar)	2.6	1.5	1.0	0.8	0.5	-0.5	0.5	0.4	1.0
Real consumer spending (%q/q, saar)	1.4	3.2	2.0	1.8	1.3	0.2	2.0	1.4	1.6
Core PCE prices (%q/q, saar)	4.5	4.0	3.1	3.1	2.8	2.2	4.7	2.8	2.1
Unemployment rate (%, qtr avg)	3.6	3.6	3.7	3.8	4.0	4.3			
Fed funds target (%, eop, top of range)	3.25	4.50	5.00	5.00	5.00	5.00			

Source: J.P. Morgan forecasts

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See page 10 for analyst certification and important disclosures.

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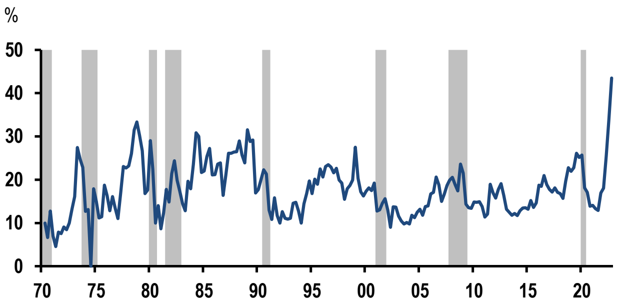
"No postwar expansion died of old age. They were all murdered by the Fed." Since the late Rudiger Dornbusch reportedly said that, we have had the 'post-modern' recessions of '01 and '08 that were more associated with asset price froth than aggressive Fed actions, and we also had the brief (but severe) COVID-19 downturn, for which it's hard to blame the Fed. But those subsequent caveats notwithstanding, most postwar expansions were indeed done in by Fed tightening. And the Fed is currently tightening as rapidly as it has ever done, and we now believe it will deliver another 100bp of hikes before going on hold next spring. So it makes sense that forecasters are more convinced than they have ever been of a recession over the next year (Figure 1).

Figure 1: Survey of Professional Forecasters 4-qtr recession prob.



Source: Philadelphia Fed, J.P. Morgan

And yet if we put the series in Figure 1 to the test, we find that professional forecasters' forecasts don't increase forecast accuracy.[1] So a soupçon of humility is warranted when projecting, in the NBER's words, "a significant decline in economic activity that is spread across the economy and that lasts more than a few months." But to get inflation to behave, it seems hard to avoid a period of significant decline in labor market activity. Even as supply chain normalization should provide some relief to price inflation, that relief will be, pardon the word, transitory, unless wage inflation also moderates.

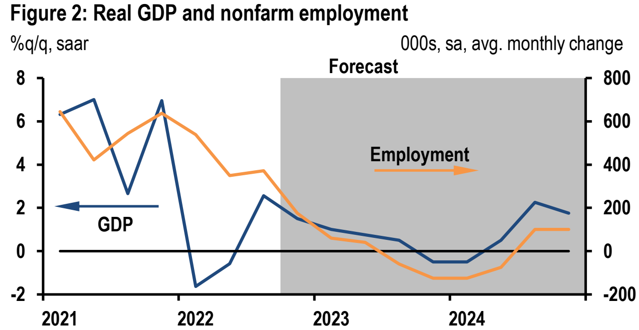
By most measures hourly wage growth is currently running around 5%. That likely needs to run closer to 3.5% before policymakers can feel more comfortable about returning to 2% inflation. And that sort of wage growth deceleration will likely require an unemployment rate between 4% and 5%, depending on how entrenched wage growth expectations have become.

It would be nice to think the Fed could gently nudge the unemployment rate up 0.5-1.0%-pt to restore labor market balance, but the cyclical behavior of the unemployment rate exhibits both asymmetries and non-linearities. As former Fed Vice Chair Kohn used to say, the unemployment rate goes down by the escalator and up by the elevator. Consistent with this, we also expect slowing aggregate demand eventually leading to labor market weakness that builds on itself, and we anticipate that we could lose over a million jobs by the middle of '24. We also believe that this labor market weakness will convince the Fed that it has generated enough disinflationary impetus that it can start to ease policy toward a more neutral posture.

So why don't we have a deeper downturn penciled into our outlook? If we do have a downturn next year, it will be the most well-telegraphed recession in modern memory. That fact alone should change the nature of the slowdown. When businesses and households expect good times to last they take on leverage and spend freely, particularly for durables. But as attested to by the Fed's recent Financial Stability Report, you have to squint to see signs of financial excess right now. And after its post-pandemic normalization, the net spending share on durables and structures has flattened off below its historical mean. Like Nineveh's response to Jonah's prophecy, the people have taken heed of what forecasters are saying and are beginning to change their behavior in ways that affect the forecasted outcome.

This thinking is similar to both the Austrian and Pigouvian theories of the business cycle: expansions end when optimistic expectations meet a less optimistic reality. The more conventional thinking, and the one both we and Dornbusch ascribe to, is that expansions end when the Fed takes away the punch bowl. Even so, these other schools of thought can provide useful insight into the nature of any prospective downturn.

Figure 2: Real GDP and nonfarm employment



Source: BEA, BLS, J.P. Morgan forecast

We're effectively looking for a Category 1 economic hurricane (Table 1 and Figure 2). What are the risks? Weakness could build on itself, requiring a larger response by the Fed to

1. In the sense that a naïve forecast that sees recession probability monotonically increasing with the length of time since the previous recession (quarters since last recession ended/36, capped at 1.0) has a larger AUC than the SPF forecasts.

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get the economy back on track. In this scenario it's not difficult to see the Fed returning to the effective lower bound by the end of '24. Unless it is increased by the lame duck Congress, the debt ceiling will be a binding constraint on government finances late next year. Given the polarized state of US politics, that sets up the risk of a technical default and thus a deeper downturn. In these year-ahead outlooks "geopolitical risks" are usually mentioned in a perfunctory, almost throw-away, manner. Unfortunately for the coming year those risks feel more vivid than perhaps anytime since 2001.

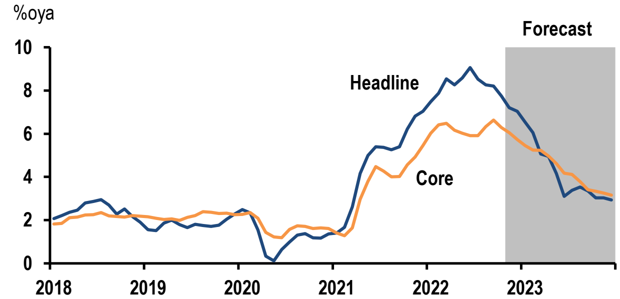
Risks are two-sided, however, and in all the gloom one shouldn't lose sight of the very real risk that the needed disinflation can occur without much pain. Economic theory teaches that if inflation expectations remain anchored, which arguably they have, then only a modest rise in the unemployment rate will be needed to restore price stability. Economic history teaches that this is not a fairy tale. Disruptions associated with the Korean war mobilization pushed the CPI up to 9.3% by March 1951. One year later CPI inflation was 1.9%. Over that period the unemployment rate fell a half percentage point.

In the usual narration of the economic outlook, one commonly begins with the prospects for spending by households, businesses, and governments, then on to how this aggregate demand is affecting labor demand, and from labor demand to wage and price inflation. This year we tell the tale backwards, beginning with the central actor in the story: inflation.

Finally an inflation moderation

Before the recent October CPI report, inflation had significantly and repeatedly surprised to the upside over the past year, pushing the Fed to tighten policy aggressively. While inflation is likely to remain above target through the end of next year, we see signs that a moderation is already underway and that this cooling will become more prominent over time. Overall, we think headline CPI inflation cools from 8.2%oya in September to 7.0% in December and then to 3.4% by September next year (Figure 3). For the core CPI, we forecast deceleration from 6.6%oya in September to 5.7% in December and 3.4% next September. This implies roughly 0.3% gains on average for the monthly core CPI prints into the third quarter of 2023. We expect annualized quarterly core CPI rates to cool from 5.5% in 2H22 to 3.7% in 1H23 and 2.9% in 2H23. The PCE price data similarly should moderate.

Figure 3: CPI inflation



Source: BLS, J.P. Morgan forecast

A few forces are driving this expected moderation. First, pandemic-related distortions that added inflationary pressures are finally starting to abate, some quite sharply. Supply chain dislocations have eased, and a surge in pent-up demand (initially for goods and more recently for services, such as travel) should fade. Second, the Fed's policy moves have led to tighter financial conditions, including significant US dollar appreciation and higher mortgage rates. As the Fed continues to push policy further into restrictive territory into early next year, we expect the now-tight labor market to loosen as well. Labor market conditions will be an important driver of inflation both in the near term and further into the future.

Figure 4: Core goods and core services CPI

Source: BLS, J.P. Morgan

There are also several category-specific stories that we think will play out over the coming year that support our forecast that inflation will moderate. We briefly summarize these stories, which are explained in more detail in recent research. Auto prices jumped recently, but we think improvements on the supply side will allow vehicle prices to decline over the coming year. Shelter inflation has been robust in recent months, but Zillow data on asking rents for new leases signal that rent inflation will moderate (although likely not until close to the middle of next year given the lags between the Zillow and CPI data). Airfares also have surged lately, but we don't expect this jump in prices to repeat again next year in part because prices already have moved up from depressed levels. An update to source data that the BLS uses to estimate health insurance prices also should to lead to a drop in related CPI prices after they surged during the year into September

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2022. While one month does not make a trend, the October CPI report suggested that these expected stories are starting to play out—core goods prices declined while core services inflation moderated somewhat relative to recent average growth even with another firm print for shelter inflation (Figure 4).

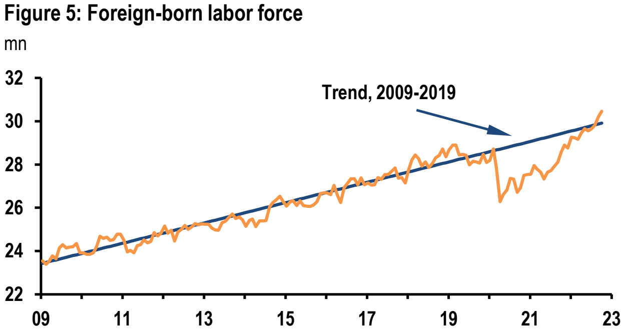
Inflation expectations also could influence where inflation is headed and will be important to monitor. The latest signals are somewhat mixed, but overall we don't think inflation expectations have changed materially relative to pre-pandemic levels. Inflation expectations are also likely influenced to some degree by realized inflation, so the moderation in inflation that we expect should help keep inflation expectations anchored.

Employment to contract

Inflation can be analyzed from the bottom up, looking at all the various categories. In the long run, however, inflation is a macroeconomic phenomenon, and its ultimate resolution will require macroeconomic rebalancing. With many pandemic-related distortions now clearly normalizing, the largest remaining imbalance is in the labor market. Rapid nominal labor income growth supports rapid nominal consumer spending growth. Given the still very slow growth in the economy's real productive capacity, the price-quantity split of fast nominal spending growth will continue to generate fast price growth. Reducing nominal income growth requires getting labor demand into better balance with labor supply.

Labor supply developments improved marginally in 2022, and we expect that trend will continue next year. Most notably, growth in the foreign-born workforce has been recovering and is now back to its pre-pandemic trend (Figure 5).

Figure 5: Foreign-born labor force

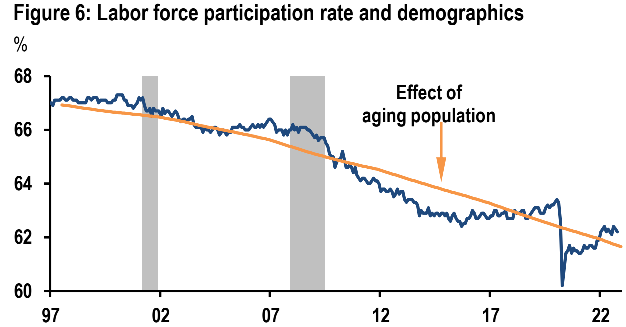


Source: BLS, J.P. Morgan

With wage growth likely to stay strong next year (and those wages denominated in the globally attractive greenback), the inducement for foreigners to come work in the US will remain strong. And the government's policies are likely to stay relatively receptive to immigration.

The labor force participation rate is sometimes characterized as depressed. We disagree with that characterization. Looking at the first 10 months of 2022 relative to the first 10 months of 2018—a good year for the labor market—age-specific participation rates are up for every five-year bucket except for those over 70 years old (a trivial part of the workforce). The overall participation rate is down relative to 2018 only because more of the population is graduating into older buckets that have lower participation rates. We expect this demographic force putting downward pressure on participation rates (Figure 6) will battle to a draw with the cyclical force exerting upward pressure, and we expect the participation rate will remain largely unchanged near it's latest reading of 62.2% through some likely monthly choppiness in the data.

Figure 6: Labor force participation rate and demographics



Source: BLS, J.P. Morgan. Orange line fixes LFPR for age-gender groups at pre-GFC levels.

The more pressing question for the outlook is: what will blunt labor demand? The standard answer to that question is that labor demand follows aggregate demand for goods and services. In fact, when productivity growth is steady this answer follows as a matter of arithmetic. We will turn to aggregate demand in the next section (short story: it should weaken further), but before doing that we first discuss some factors that have been creating slippage between aggregate demand and labor demand.

The level of productivity in 3Q was 1.4% lower than the same time last year. The fact that firms kept hiring in a stagnant economy would appear to confirm that firms have prioritized re-staffing over cost-cutting. Numerous anecdotes also suggest that firms will be more reluctant than normal to lay off staff in the face of weaker product demand. One should bear in mind, however, that it doesn't require layoffs for job growth to turn negative. Given the massive amount of churn in the labor market, even a modest slowing in the pace of hiring can lead to a decline in employment (Figure 7). In most business cycles, more job loss can be accounted for by lower hiring than by higher layoffs.

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Figure 7: Labor market churn
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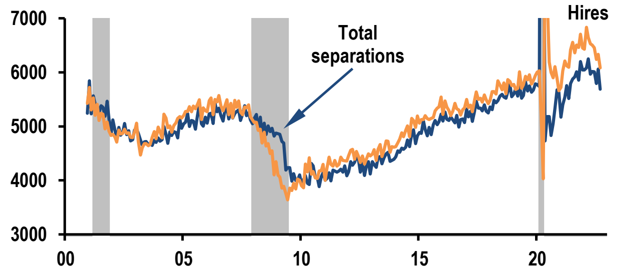
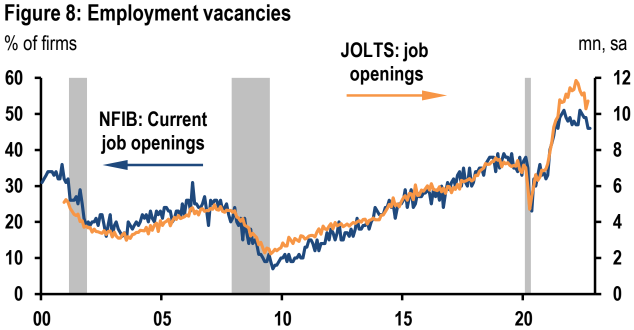


Source: BLS, J.P. Morgan

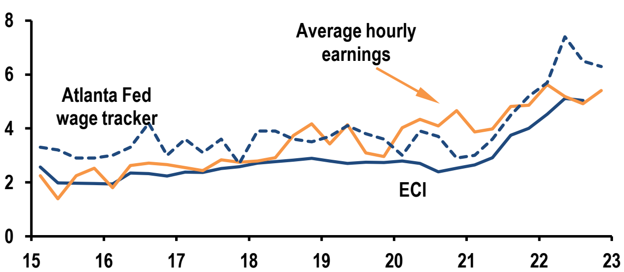
There are already signs that firms' appetite to hire is easing, and we expect that to continue next year to the point where we see outright declines in the monthly job figures in 2H23. Job openings peaked in March and are down 9.6% through September (Figure 8). Other indicators like NFIB and LinkUp suggest that this downward trend is continuing in the fall. Hiring reached its zenith in February and is now 11.0% off the peak. Only a decline in quits has prevented this from materializing in negative job growth.

Figure 8: Employment vacancies
% of firms



Source: BLS, NFIB, J.P. Morgan

Figure 9: Select measures of employment costs
%oya, end of quarter (Oct 2022 values shown for 4Q22 when applicable)



Source: BLS, Atlanta Fed, J.P. Morgan

We also are seeing tentative signs that the labor market has moved past the strongest period of wage inflation. To be sure, recent reports suggest that the tight labor market has been keeping significant upward pressure on employee earnings lately. But there has been at least some degree of moderation in some of the related measures relative to an even more robust period for wage inflation (Figure 9).

We expect this trend will accelerate in '23. Markets are now rewarding companies that prioritize cutting costs, and labor costs are often the largest cost category. This shouldn't be a surprise given that nonfinancial corporate profit margins peaked last year, in both the NIPA and S&P data. We expect margins will remain under pressure next year. Nonfinancial corporations have about $5 trillion in net short-term debt obligations. As short-term interest rates are expected to increase almost 500bp between March '22 and March '23 this will add $250 billion to interest expense, subtracting 15% off of nonfinancial after-tax corporate profits.

The other factor weighing on profitability—and on hiring—will come from top-line developments, which we expect will wilt under the pressure of tighter financial conditions.

Consumers losing their cushion

In many ways the consumer is closing out 2022 in worse shape than they ended 2021. Financial conditions have tightened significantly as the Fed has been tightening policy and consumers have dealt with a drop in household wealth and higher interest rates. And inflation has squeezed purchasing power, including a surge in motor fuel costs. The Fed's financial accounts show that the net worth of households and non-profits fell by about $6 trillion over the first two quarters of the year, and we think that consumer spending declines about 2-3 cents for every dollar lost in household wealth. Wealth likely continued to drop in the second half given recent declines in equity markets and house prices.

Higher rates should also boost debt payments, but the high percentage of consumer debt that comes with fixed interest rates limits the effects of interest rate hikes on consumer debt payments—using estimates from our earlier research, the large jump in interest rates over the past year or so likely corresponded with an increase in the debt service payments of about $100bn (worth about 0.5% of disposable income).

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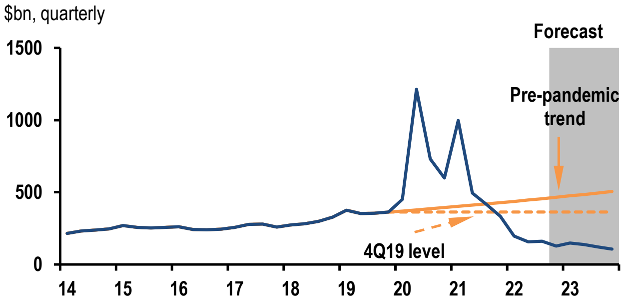
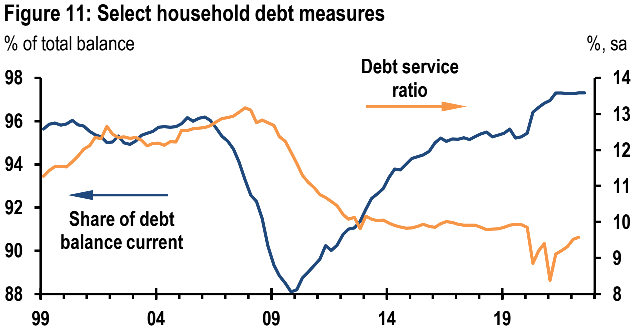
Figure 10: Estimated saving



Source: BEA, J.P. Morgan forecast. Note: Pre-pandemic trend extrapolates 2015-2019 growth.

Consumers had a big cushion of "excess saving" at the end of last year—supported by a variety of fiscal programs that have since lapsed—and this has helped households spend despite the aforementioned headwinds. The strong labor market also has helped provide nominal income support. But while nominal disposable income rose 3.2% oya into September, disposable income was down 2.9% oya after adjusting for inflation. As a result, consumers have started eating into that earlier cushion of saving that had been amassed relative to the pre-pandemic trend to fuel their recent consumption (Figure 10) and by some estimates may use it up entirely by the middle of next year (extrapolating the pre-pandemic growth trend as a benchmark to estimate "excess saving").

Figure 11: Select household debt measures



Source: New York Fed, Federal Reserve Board, J.P. Morgan

Despite the aforementioned drags on the consumer, it seems a stretch to argue that households are feeling particularly strained right now in the aggregate. For one, even though excess saving has dropped off lately, it is still big, somewhere in the order of about $1.2-1.8 trillion across households (Figure 10). And consumers were current on payments for about 97% of outstanding debt into 3Q, a higher share than in pre-pandemic years, while debt service payments remained below pre-pandemic norms relative to income (Figure 11).

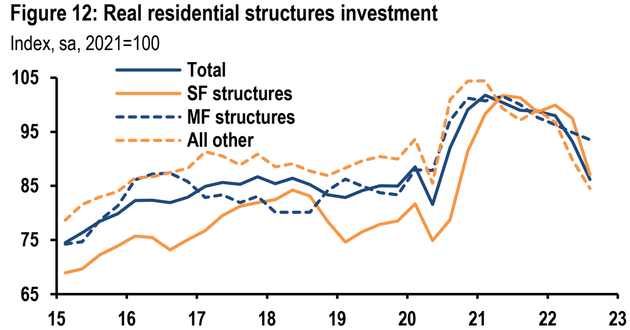
Our forecast for next year attempts to balance the mixed crosscurrents for the consumer. Headline inflation is expected to moderate significantly next year, but nominal income growth should also slow as the labor market cools and firms become more conservative about hiring. Households also look set to receive a jump in social security benefit payments at the turn of the year (totaling around $106bn over the year), but even with this support we think households continue to draw down their earlier excess saving to fund their spending. Overall we think that real consumption increases 1.4% next year. Services spending likely will outpace goods spending, considering that goods spending is generally more sensitive to changes in interest rates and goods consumption still looks due for some cooling given its continued outperformance relative to pre-pandemic norms.

Interest-sensitive sectors at ground zero

While consumption has some remaining supports, it's hard to make the same argument for the more interest-sensitive sectors of aggregate demand: investment and foreign trade.

For residential investment the question isn't the direction of travel but how much further will activity decline. The effects of Fed hikes are generally clearest on the housing market relative to other parts of the economy, and this hiking cycle looks no different—real residential investment tumbled 16.3% saar across the first three quarters of 2022 (Figure 12), while overall GDP was roughly unchanged. Our past research indicates that total home sales decline by about 10% for each 100bp increase in mortgage rates. Given the roughly 400bp increase in mortgage rates this year our research suggests we could still see another 15-20% decline in home sales from here. Construction activity should follow suit, and we expect residential investment will subtract about 0.3%-point from GDP growth next year.

Figure 12: Real residential structures investment



Source: BEA, J.P. Morgan

House prices kept climbing early in 2022 despite large drops across a variety of measures of housing activity (Figure 12), and it is likely that limits in available housing inventory kept upward pressure on prices despite higher rates depressing demand. But house prices peaked in the middle of '22 and

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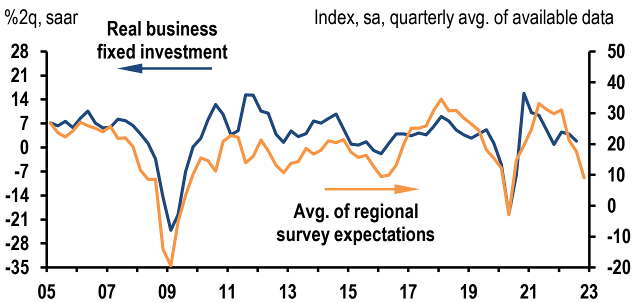
have been declining since. To return affordability back to historical norms, we think we could see a total 10% peak-to-trough decline in house prices, with much of that decline occurring next year. We see risks skewed toward a larger decline.

Business investment spending has held up better than housing, though this may be changing: core capital goods orders growth turned negative in September for the first time in over a year and a half. Capital spending intentions are also pointing lower (Figure 13). This shouldn't be surprising. Capital spending decisions should be determined by the cost of capital and the return on capital. The cost of capital has increased sharply. For example, triple-B borrowing rates have increased by 300bp over the past year. And the availability of external finance is getting harder to come by. The most recent Senior Loan Officer Opinion Survey indicates that banks are aggressively tightening lending standards for C&I and commercial real estate loans.

Figure 13: Capex and business survey capex expectations



Source: BEA, various Fed branches, J.P. Morgan

The return on capital is often proxied with growth in business final sales. This has been slow and is expected to remain slow. About 15% of US business sales are to foreign purchasers. Europe—both the Eurozone and other Europe—accounts for about a quarter of US exports and appears to be heading into recession (Table 2).

Table 2: US trade in goods by region (nominal values)

%over year ago growth rates are 3mma

	Exports		Imports	
	%oya	Shares	%oya	Shares
Canada	20.8	17.3	24.4	13.1
Mexico	20.9	15.9	22.5	14.3
Eurozone	29.8	15.5	6.1	14.5
Europe ex eurozone	35.7	8.6	-5.3	6.6
Japan	16.5	3.8	2.6	4.2
China	8.6	8.1	12.1	18.0
East Asia ex Japan and China	22.7	9.8	7.6	10.8
Central/South America	28.5	10.6	22.0	4.6
Other	21.2	10.5	30.6	13.8
Total	23.0		14.2	

Source: Census Bureau, J.P. Morgan

The other obvious headwind to US exports is the dollar, which on a real, trade-weighted basis is up about 15% since the beginning of the year. This will reduce foreign demand for US goods but also shift domestic demand to foreign suppliers. It should also be noted that while some financial conditions, such as mortgage rates, translate into a change in activity fairly quickly, the effect of dollar appreciation usually takes rather long to play itself out. For example, in the Fed's FRB/US model the effect of dollar appreciation on the level of GDP reaches a maximum two and a half years after the change in the exchange rate, though the expected mild recession likely will generate reduced demand for imports, which could limit the trade drag. All told, our models suggest that the strong dollar and the global growth slowdown means that net foreign trade will subtract about 1%-point from GDP growth in '23 and that this trade drag will continue into '24.

Amid the storm and stress of tighter financial conditions, the 17% of economic activity accounted for by the government sector should be relatively steady. Real federal government spending increased in '20 and early '21. While some payback is to be expected, the magnitude of the reversal is tempered by the infrastructure and CHIPS bills. We expect the FY23 deficit will come in around $1.05 trillion. State and local government finances are in better shape than they were prior to the pandemic, though enough challenges remain that we don't expect a major fiscal expansion at this level of government. Altogether we look for real government spending to decline about 0.7% next year. A likely divided government and the lack of much goodwill between parties makes prospects for big changes in fiscal policy unlikely, although it is possible that a mild recession is met with with a modest degree of fiscal stimulus at some point.

Observe-orient-decide-act

Colonel John Boyd's OODA loop is a reasonable description of how normal, data-dependent, monetary policy works: you meet, you decide (hike, cut, hold), you wait six weeks and observe the data, then meet again and repeat the process. It is not a reasonable description of how the Fed's monetary policy was conducted this year. Realizing it was wrong-footed to start the cycle, the FOMC fired off four consecutive 75bp rate hikes, effectively with its eyes shut.

Now that rates are more convincingly in restrictive territory, this anomalous period of policy-making appears to be behind us. Several Fed speakers have indicated their inclination to step down the size of future rate increases and to return to a data-dependent decision-making process that allows for observing economic outcomes. This means, to start, dialing down to a 50bp hike at the December meeting, which both we and the markets expect.

Things get more interesting after that. One self-imposed constraint on Fed policy is that the Committee has apparently agreed that rate hikes will continue until there is clear and convincing evidence that inflation is moving back closer to their 2% goal. Given this "outcome-oriented" constraint and given the long lags between rate hikes and inflation developments, we think it makes sense to dial down again to a 25bp hike at the January/February meeting and then keep delivering 25bp increases until they are convinced inflation is on the right track.

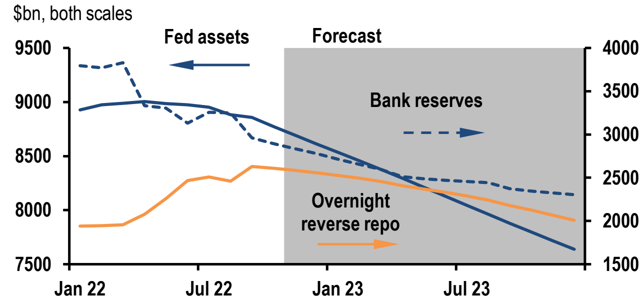
How long will this process go on? Given our forecast, we think this means another hike in March and then a pause at the May meeting. There are five employment reports due between now and the May FOMC; we expect by then the labor market will be rolling over in a way that gives the Committee confidence that their disinflation forecast will be realized. There's a risk of course that they may need to deliver more doses of the medicine, but there's also a risk that the labor market falls out of bed sooner than we forecast.

Whatever the eventual peak in rates might be, Fed officials lately have been stressing that equally important is how long rates remain in that restrictive setting. This likely reflects a desire to avoid repeating the mistaken "stop-go" policies of the 1970s, when the Fed eased at the first sign of economic weakness, thereby allowing inflation to fester longer. We don't doubt their sincerity in this regard. And there are precedents: after getting to 5.25% funds in mid 2006 the Committee maintained that rate for over a year.

But even taking them at their word, we do think there will be enough evidence of a lasting disinflation that we project easing in 2024. Under the assumption the economy slips into recession later next year and significant job losses ensue, we see the funds rate being reduced 50bp per quarter starting in 2Q24, leaving the funds rate at 3.5% by '24 year-end. Sticky inflation in our forecast prevents a more aggressive easing, though if inflation comes off quicker than we forecast we could see a much speedier unwind of restrictive policy.

Figure 14: Fed assets and liabilities

$bn, both scales



Source: FRB, J.P. Morgan forecast

Finally, the Fed's balance sheet reduction has been on autopilot since about midyear. In rounded figures, the Fed's balance sheet should decline a little over $1 trillion next year. (Figure 14)

Banks are currently holding about $3 trillion in reserves. While there's a lot of uncertainty, we estimate the lowest comfortable level of reserves for the banking system is about $2 trillion. This might imply that balance sheet runoff could end as soon as late '23. However, the size of the overnight reverse repo facility is currently over $2 trillion. This facility should decline in size, and as that occurs reserves come back into the system, thus lengthening the period of balance sheet reduction.

While the decline in the repo facility should occur partly as the result of market forces, we wouldn't be surprised if the FOMC takes active steps via administered rates to minimize its usage. There are financial market functioning arguments in having a large repo facility as a matter of business-as-usual. One can even see it as a modern extension of the Fed's primary mission "to furnish an elastic currency." However, there are also governance arguments for minimizing the Fed's overall footprint, particularly given the sensitive nature of independent agencies operating in an elective democracy. Nobody wants the Fed to become the financial market equivalent of Moses' Triborough Bridge Authority. A smaller balance sheet minimizes the risk that Congress perceives the Fed to be overstretching their authority.

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J.P. Morgan US forecast

	%q/q, saar								%q4/q4			%y/y		
	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	2022	2023	2024	2022	2023	2024
Gross domestic product														
Real GDP	-1.6	-0.6	2.6	1.5	1.0	0.8	0.5	-0.5	0.5	0.4	1.0	1.9	1.0	0.4
Final sales	-1.8	1.3	3.3	1.2	0.5	0.2	0.4	0.7	1.0	0.4	0.8	1.2	1.0	0.6
Domestic	1.3	0.2	0.5	2.3	1.7	1.4	1.0	0.2	1.1	1.1	1.5	1.6	1.3	1.0
Consumer spending	1.3	2.0	1.4	3.2	2.0	1.8	1.3	0.8	2.0	1.4	1.6	2.8	1.9	1.3
Business investment	7.9	0.1	3.7	2.7	4.0	3.8	3.3	-0.6	3.6	2.6	3.6	3.5	3.1	2.2
Equipment	11.4	-2.0	10.8	1.5	2.0	2.0	1.0	-2.0	5.2	0.7	2.2	4.6	2.3	0.7
Structures	-4.3	-12.7	-15.3	-5.0	4.0	4.0	3.5	-4.0	-9.5	1.8	0.9	-9.1	-2.0	-0.3
Intellectual property products	10.8	8.9	6.9	6.5	6.0	5.5	5.5	2.0	8.3	4.7	5.7	8.8	6.0	4.4
Residential investment	-3.1	-17.8	-26.4	-15.0	-8.0	-6.0	-6.0	-4.0	-16.0	-6.0	0.5	-9.9	-11.8	-2.4
Government	-2.3	-1.6	2.4	1.8	0.0	-1.1	-1.1	-0.7	0.1	-0.7	-0.9	-0.9	0.1	-0.9
Net exports ($bn, chained $2012)	-1489	-1431	-1274	-1335	-1399	-1462	-1493	-1473	-	-	-	-	-	-
Exports (goods and services)	-4.6	13.8	14.4	-2.0	-3.3	-3.3	-3.3	-3.3	5.0	-3.3	-2.9	7.2	0.0	-3.0
Imports (goods and services)	18.4	2.2	-6.9	5.0	4.5	4.3	1.0	-4.0	4.3	1.4	2.0	8.9	1.9	0.1
Inventories (ch $bn, chained $2012)	214.5	110.2	61.9	75.7	102.7	130.6	135.1	76.7	-	-	-	-	-	-
Contribution to real GDP growth (% pts):														
Domestic final sales	1.4	0.2	0.5	2.4	1.7	1.4	1.0	0.3	1.1	1.1	1.5	1.7	1.3	1.0
Net exports	-3.1	1.2	2.8	-1.2	-1.3	-1.2	-0.6	0.4	-0.1	-0.6	-0.7	-0.4	-0.3	-0.3
Inventories	0.2	-1.9	-0.7	0.3	0.5	0.6	0.1	-1.2	-0.6	0.0	0.1	0.7	0.0	-0.3
Income and profits (NIPA basis)														
Adjusted corp profits	0.5	19.7	-2.5	-2.5	-8.0	-12.0	-14.0	-20.0	3.4	-13.6	0.4	6.6	-7.1	-9.1
Real disposable personal income	-10.6	-1.5	1.7	0.4	4.0	1.1	0.0	-0.1	-2.6	1.2	1.1	-6.4	1.4	0.4
Nominal disposable personal income	-3.1	5.8	5.9	3.9	6.9	3.8	2.6	2.0	3.0	3.8	3.2	-0.1	4.7	2.6
Saving rate[1]	4.3	3.4	3.3	2.7	3.1	3.0	2.7	2.5	-	-	-	3.4	2.8	1.9
Prices and labor cost														
Consumer price index	9.2	10.5	5.7	4.0	3.4	3.2	3.1	2.4	7.3	3.0	2.4	8.1	4.1	2.5
Core	6.5	6.6	6.4	4.6	3.6	3.7	3.2	2.5	6.0	3.2	2.5	6.2	4.2	2.7
PCE deflator	7.5	7.3	4.2	3.5	2.9	2.7	2.6	2.1	5.6	2.6	2.1	6.2	3.3	2.2
Core	5.6	4.7	4.5	4.0	3.1	3.1	2.8	2.2	4.7	2.8	2.1	5.0	3.4	2.3
GDP chain-type price index	8.3	9.0	4.1	2.7	2.4	2.3	2.3	2.3	6.0	2.3	2.3	6.9	3.0	2.3
S&P/C-S house price index (%oya)	20.0	19.6	12.5	4.9	2.3	-0.3	-2.6	-5.3	4.9	-5.3	2.5	14.0	-1.5	-0.4
Employment Cost Index	5.8	5.4	5.1	4.5	4.2	4.0	3.8	3.6	5.2	3.9	3.3	4.9	4.3	3.4
Productivity	-7.4	-4.1	0.3	0.3	0.5	0.5	1.0	0.5	-2.8	0.6	1.1	-1.8	0.2	0.8
Other indicators														
Housing starts (mn units, saar)[1]	1.720	1.647	1.461	1.400	1.425	1.475	1.525	1.525	-	-	-	1.557	1.488	1.554
Industrial production, mfg.	3.7	3.2	1.9	3.0	0.5	0.5	0.2	-3.0	3.0	-0.5	0.5	3.8	1.0	-0.6
Light vehicle sales (mn units, saar)[1]	14.1	13.3	13.3	15.0	16.0	17.0	17.1	16.8	-	-	-	13.9	16.7	17.0
Unemployment rate[1]	3.8	3.6	3.6	3.6	3.7	3.8	4.0	4.3	-	-	-	3.6	4.0	5.0
Payroll employment (ch, '000s, samr)[1]	539	349	372	175	60	40	-60	-125	-	-	-	359	-21	0
Nominal GDP	6.6	8.5	6.7	4.2	3.4	3.1	2.8	1.8	6.5	2.8	3.3	8.9	4.0	2.7
Current account balance ($bn)[1]	-282.5	-251.1	-185.3	-200.1	-204.9	-209.8	-214.8	-209.8	-	-	-	-919.0	-839.2	-936.5
% of GDP	-4.6	-4.0	-2.9	-3.1	-3.1	-3.2	-3.2	-3.1	-	-	-	-3.6	-3.2	-3.5
Federal budget balance ($bn)[1]	-	-	-	-	-	-	-	-	-	-	-	-1375.0	-1050.0	-1200.0
% of GDP	-	-	-	-	-	-	-	-	-	-	-	-5.4	-4.0	-4.4

1. Entries are average level for the period. Federal balance figures are for fiscal years.
Source: J.P. Morgan

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