Goldman Sachs | Economics Research

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US Economics Analyst

The Risks of a Higher Rate Regime (Mericle / Walker)

- Interest rates have risen across the curve in recent months even as the hiking cycle has increasingly looked finished. Rates have risen moderately at the front end as it has become less clear whether falling inflation will be enough to prompt cuts anytime soon. And rates have risen sharply further out the curve as investors have inferred from the economy's strong performance at a 5%+ fed funds rate that the neutral or equilibrium interest rate might be much higher than was widely assumed last cycle, when markets embraced the secular stagnation hypothesis.
- The main implication of the further tightening in financial conditions led by rising rates is that the drag on GDP growth will last longer. We now estimate a roughly -½pp hit to growth over the next year, meaningful but much less than last year and too small to threaten recession.
- The move to a higher rate regime poses other risks too. Last cycle, the belief that real rates would remain close to zero in the future helped to rationalize a few major economic trends that would otherwise have looked more questionable: elevated valuations of risky assets in financial markets, the surprising survival of persistently unprofitable firms in the corporate sector, and wide deficits that added to an already historically large federal debt in the public sector. We explore what the economic consequences might be if these trends were to begin to unwind.
- In financial markets, the key risk is that valuation measures that are benchmarked to interest rates are now higher for some assets, most importantly stocks. We estimate that if the equity risk premium fell to its 50th historical percentile, the hit to GDP growth over the following year would be 1pp. If it fell to its average level in the pre-GFC years, the hit would be 0.75pp.
- In the corporate sector, investors might hesitate to continue financing unprofitable companies that they hope will pay off well down the road now that the opportunity cost has risen. That could force these companies to close or cut labor costs more aggressively, as they have tended to do when hit with interest rate shocks in the past. A 50% increase in their exit rate would impose a roughly 20k drag on monthly payroll growth and a roughly 0.2pp hit to GDP growth.
- In the public sector, projections of real interest expense and the federal

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debt-to-GDP ratio look much worse than just a couple of years ago, when the interest rate on government debt (*r*) was expected to remain well below nominal GDP growth (*g*). We think it is unlikely that concern about debt sustainability will lead to a deficit reduction agreement anytime soon. But if it does happen eventually, an agreement similar in magnitude to the 1993 fiscal adjustment would imply a hit to GDP growth in the neighborhood of as much as ½pp per year for a number of years.

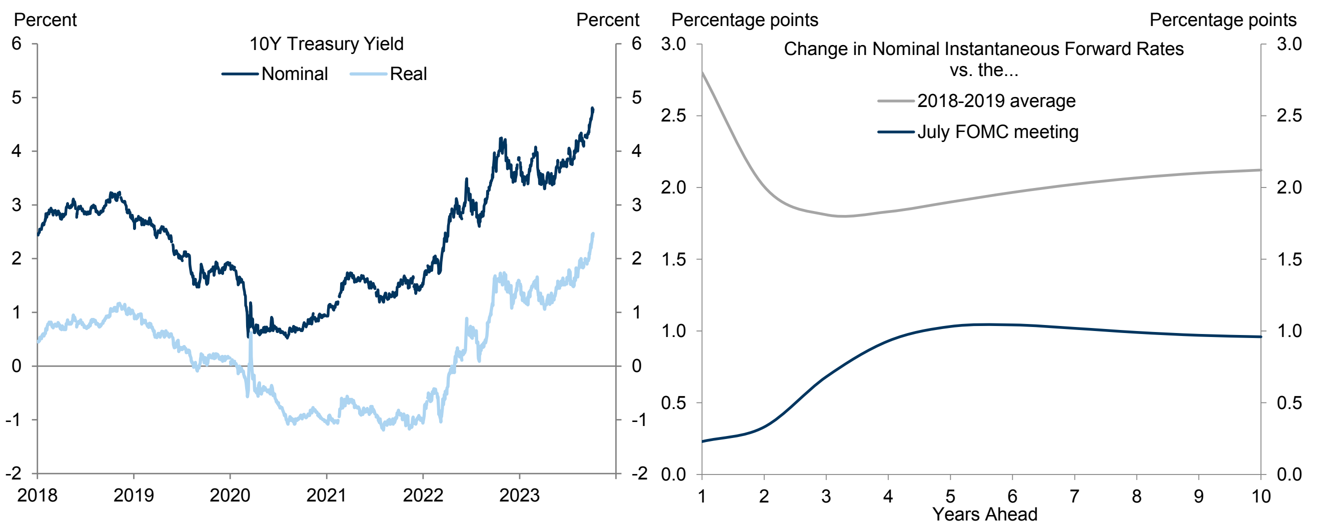
- While these risks are significant, they are probably not large enough individually to trigger a recession unless they occur abruptly and aggressively or simultaneously. And in those scenarios, we think that the Fed would likely deliver rate cuts that would offset much of the impact.

The Risks of a Higher Rate Regime

Interest rates have risen across the curve in recent months even as inflation has slowed and the hiking cycle has increasingly looked finished. Both nominal and real 10-year yields are now well above the levels seen toward the end of last cycle (Exhibit 1, left), and forward interest rates across the curve are around 2pp higher than in the pre-pandemic years (Exhibit 1, right). What has driven this large increase in interest rates? We see two clear contributors and one possible contributor.

First, rates have risen moderately at the front end of the curve recently as markets have become less confident that falling inflation will be enough to prompt cuts anytime soon. We agree that this was the key takeaway from the September FOMC meeting—some Fed officials now appear less convinced that rate cuts are necessary to avoid recession and less certain that the current policy rate is really so restrictive. If Fed officials come to see rate cuts as more optional, as we do, then at a minimum the burden on the inflation data to fall far enough to justify cuts will likely be higher.

Exhibit 1: Real Interest Rates Have Risen Across the Curve as Investors Have Become Less Confident That the Fed Will Cut Next Year and Have Raised Their Long-Term Rate Expectations Too



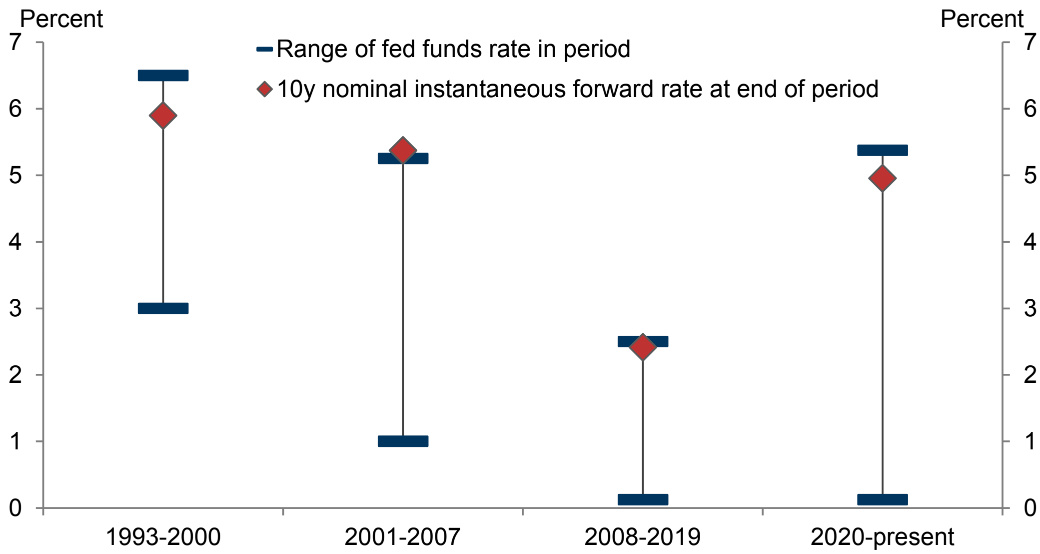
Source: Federal Reserve Board, Goldman Sachs Global Investment Research

Second, the much larger recent increase in interest rates further out the curve appears to have been driven mainly by investors inferring from the economy's strong performance at a 5%+ fed funds rate that the neutral or equilibrium interest rate might be much higher than was widely assumed last cycle, when markets embraced the secular stagnation hypothesis. As recent work by our strategists and Fed economists[1] has shown, markets tend to infer a lot from the current policy rate about distant forward rates, which have ended up near where the funds rate peaked in prior cycles (Exhibit 2). This cycle, unlike last cycle, the Fed has run the experiment of taking the funds rate well above the level that investors saw as neutral. Investors have been surprised by the

[1] Phurichai Rungcharoenkitkul and Fabian Winkler, "The Natural Rate of Interest Through a Hall of Mirrors," 2022.

economy's resilience and have quickly reevaluated the level of interest rates that might be sustainable in the future. In moderation, this type of learning can be a sensible corrective to a very low neutral rate view that we have long disputed, though it could be taken too far—after all, the tendency to infer from temporary economic headwinds that the neutral rate would be secularly much lower was precisely what we criticized market perceptions and model-based estimates of neutral for last cycle, and the same mistake can be made in the other direction.

Exhibit 2: The Rise in Distant Forward Rates Appears to Be Driven Mostly by Investors Rethinking Their Estimates of the Neutral Rate After Seeing the Economy Perform Surprisingly Well at a High Funds Rate



Source: Federal Reserve Board, Goldman Sachs Global Investment Research

Third, it is also possible that an increase in the term premium has contributed. Model-based decompositions of bond yields suggest that a rise in the term premium has played a supporting role recently, and the economic study that first pointed out that the funds rate has a surprisingly large influence on forward rates attributed it largely to a term premium channel.[2] We are unsure whether the term premium has played much of a role recently, though we see plausible reasons for why it might have risen, namely concerns about government debt dynamics, spillovers from foreign central bank actions, and the dramatic return of supply shocks, which has challenged the leading rationale for a negative term premium last cycle—that since modern business cycles are driven by demand fluctuations, inflation will be procyclical and bonds will therefore be a reliable hedge against risk assets.

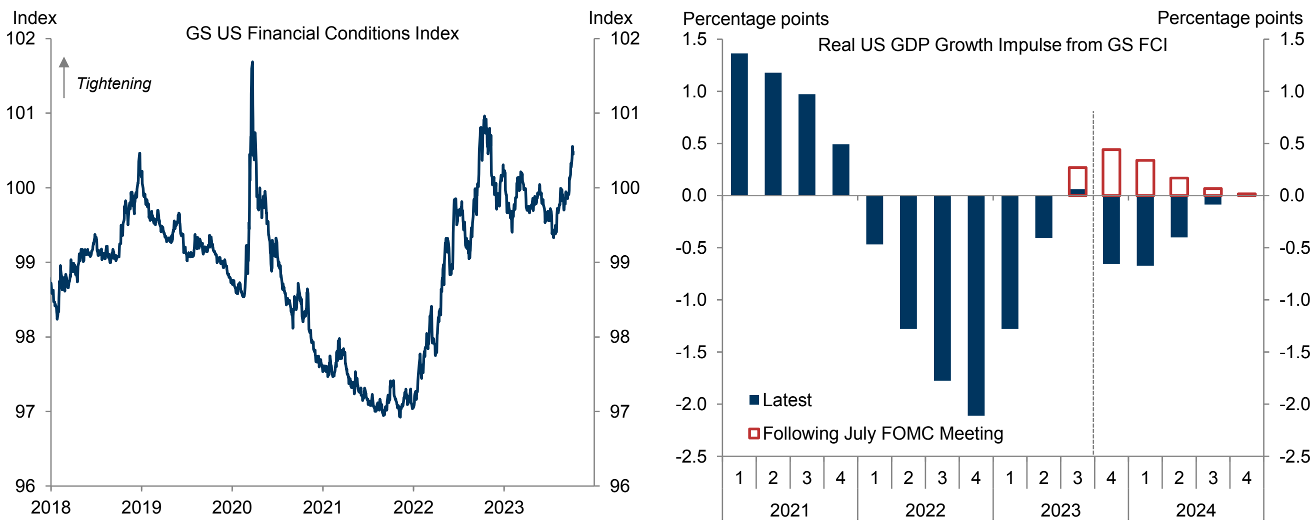
The Risks of a Higher Rate Regime

The main implication of the further tightening in financial conditions led by rising rates is that the drag on GDP growth will last longer. Our financial conditions index (FCI) growth impulse model now implies a roughly -½pp hit to growth over the next year (Exhibit 3), meaningful but much less than last year and too little to threaten recession.

[2] Samuel G. Hanson and Jeremy C. Stein, "Monetary policy and long-term real rates," Journal of Financial Economics, 2015.

In past research, we have explored reasons why the timing and magnitude of the impact of higher rates on the economy could be a bit different this cycle from the historical average impact estimated by our FCI growth impulse model. The nuances of the post-pandemic economy likely dampened and to a lesser degree prolonged the growth hit from higher rates. Dampened because adjustable-rate mortgages are rare in the US today and because the two most rate-sensitive sectors, housing and autos, have been constrained more by supply than by demand. Prolonged somewhat because elevated debt issuance starting in 2020 has limited companies' refinancing needs so far and delayed the rise in their interest expense. However, accounting for these nuances implies only a slightly larger drag on growth ahead.

Exhibit 3: The Recent Tightening in Financial Conditions Has Prolonged the Drag on GDP Growth, Though It Is Still Modest Compared to the 2022 Drag and Far From Implying Recession



Source: Goldman Sachs Global Investment Research

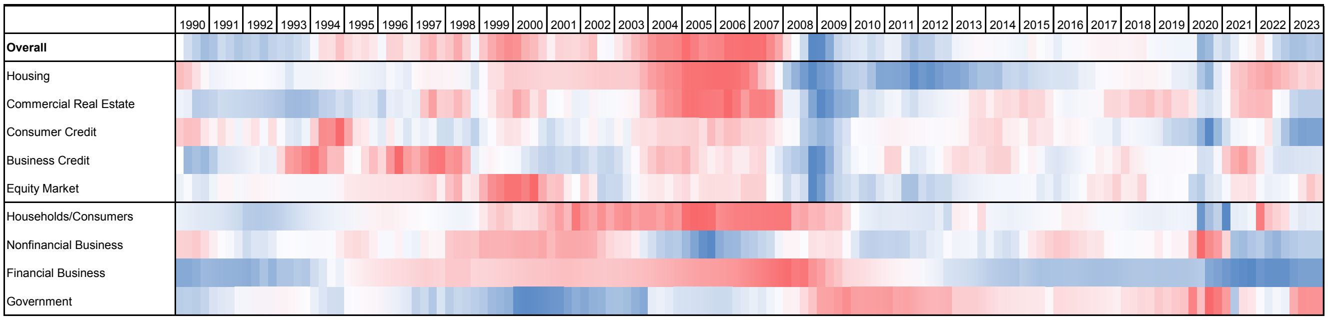
In this week's *Analyst* we consider other risks posed by the abrupt move from a very low rate regime to a higher rate regime. These risks could be partially additive to the FCI growth drag, either because they are at least somewhat outside its scope or because they have not fully materialized yet.

In particular, last cycle the belief that real rates would remain close to zero in the future helped to rationalize a few major economic trends that would otherwise have looked more questionable. In financial markets, low rates justified elevated valuations of risky assets. In the corporate sector, low rates made investors more willing to fund persistently unprofitable firms that they expected would only pay off well down the road. And in the public sector, low rates reduced anxiety about wide deficits adding to an already historically large federal debt because the burden of servicing the debt seemed low. We explore what the economic consequences might be if these trends were to begin to unwind.

The Risk from Financial Asset Valuations

In financial markets, the key risk is that valuation measures that are benchmarked to interest rates are now higher for some assets. Our financial excess monitor sends a fairly reassuring overall message, in part because some rate-sensitive asset classes have already repriced significantly. It suggests the most risk for housing, though we are less concerned there because the severe national shortage of single-family homes should limit the downside.

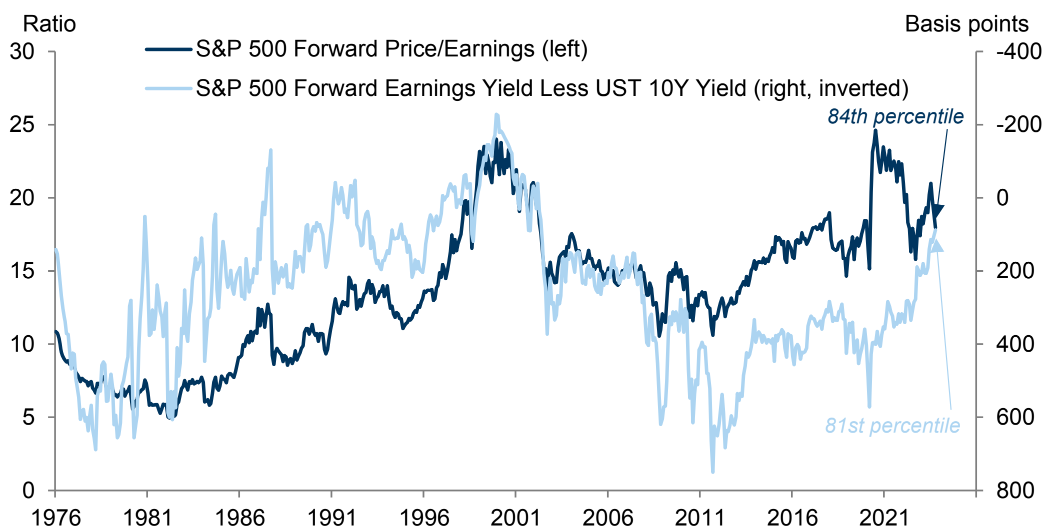
Exhibit 4: Our Financial Excess Monitor Does Not Raise Much Alarm Yet Despite the Rise in Interest Rates, in Part Because Some Rate-Sensitive Asset Classes Have Already Repriced Significantly



Source: Goldman Sachs Global Investment Research

While the equity market looks much less stretched than during the technology bubble, many investors would likely have been surprised in 2019 if they were told that current valuations could prevail alongside the current level of interest rates. Our strategists' measure of the gap between the forward earnings yield and the 10-year Treasury yield is now much higher than before the pandemic (Exhibit 5).

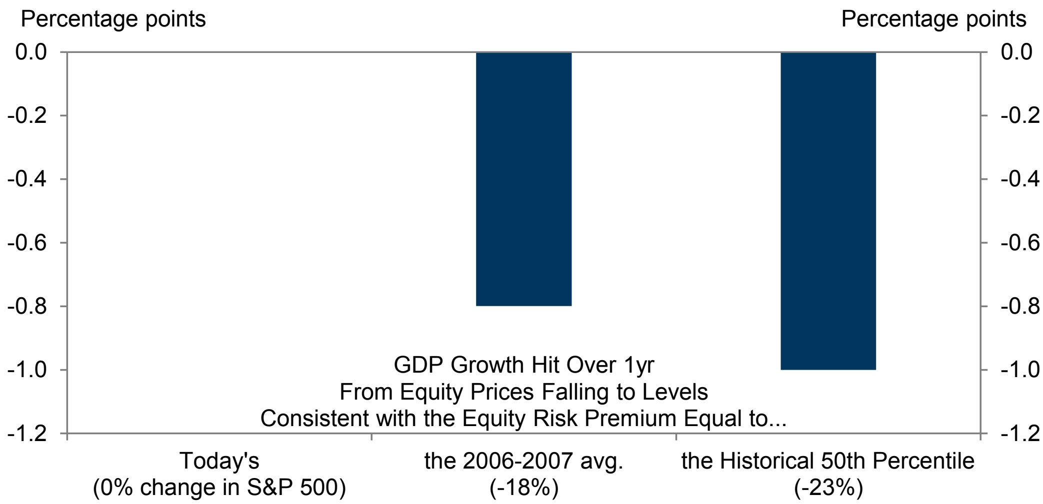
Exhibit 5: Asset Valuation Measures That Compare to the Risk-Free Interest Rate Now Look More Elevated Relative to History After the Recent Sharp Rise in Interest Rates



Source: Haver Analytics, Goldman Sachs Global Investment Research

We consider two scenarios to illustrate the potential impact on the economy of a further rate-driven sell-off in equities. We estimate that if the equity risk premium fell to its 50th historical percentile, the hit to GDP growth over the following year would be 1pp, while if it fell to its average level in the pre-GFC years, the hit would be 0.75pp (Exhibit 6).

Exhibit 6: A Further Repricing of Risk Assets in Response to Higher Interest Rates Could Add Substantially to the Drag on GDP Growth from the Tightening in Financial Conditions Seen So Far



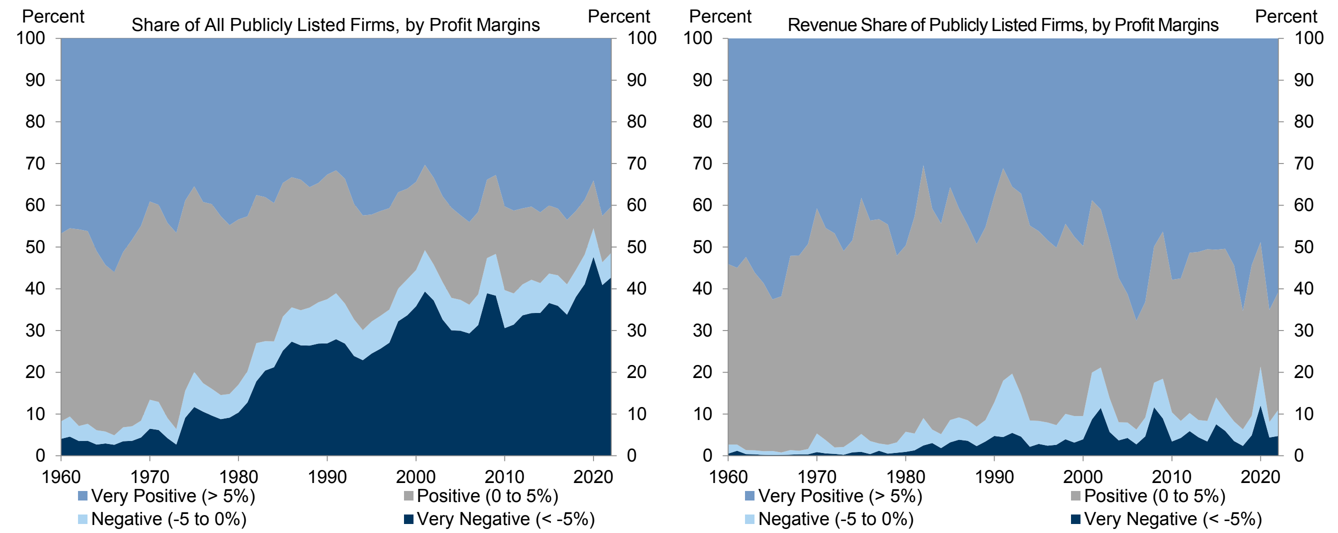
Source: Goldman Sachs Global Investment Research

The Risk from Unprofitable Firms

In the corporate sector, investors might hesitate to continue financing unprofitable companies that they hope will pay off well down the road now that the opportunity cost has risen. The number of unprofitable firms has risen in recent decades, reaching almost 50% of all publicly-listed companies in 2022 (Exhibit 7, left).[3] The share of business activity that they account for is much smaller but still an economically meaningful 10% of total business revenues (Exhibit 7, right).

[3] Researchers at the OECD and BIS have noted that the increase in unprofitable firms has occurred across advanced economies and have linked the rise in part to lower interest rates. See Müge Adalet McGowan, Dan Andrews, and Valentine Millot, "The Walking Dead? Zombie Firms and Productivity Performance in OECD Countries," 2017; Ryan Niladri Banerjee and Boris Hofmann, "The Rise of Zombie Firms: Causes and Consequences," 2018.

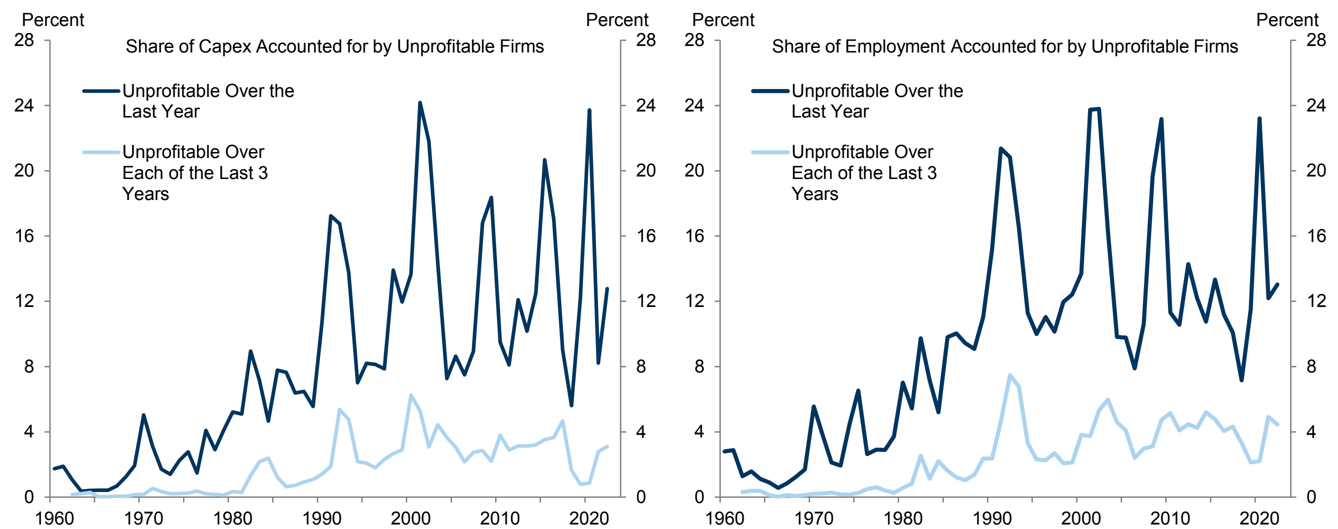
Exhibit 7: Unprofitable Firms and Even Persistently Unprofitable Firms Have Become a Larger Part of the US Corporate Sector Over Time and Have Been Largely Unscathed by the Pandemic Economy So Far



Source: Compustat, Goldman Sachs Global Investment Research

Unprofitable firms account for closer to 13% of capital spending and employment, and even just the smaller group of persistently unprofitable firms account for about 5% of employment (Exhibit 8).

Exhibit 8: Unprofitable Firms Account for About 13% of Employment and Capital Spending, and Even Just the Persistently Unprofitable Firms Account for 5% of Employment



Note: Shares are of the universe of publicly listed firms.

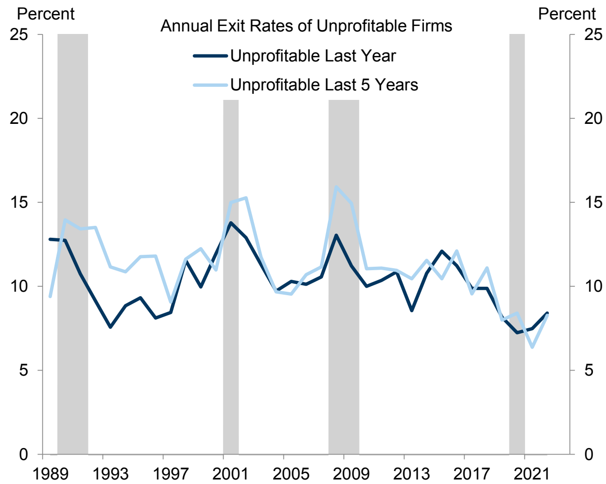
Source: Compustat, Goldman Sachs Global Investment Research

Higher funding costs could force some of these companies to cut labor costs or even close. In previous research we found that unprofitable firms tend to cut capital spending more aggressively when faced with margin pressure, and we find they also cut labor costs more aggressively when hit with interest rate shocks (Exhibit 9, left). The larger risk is that some firms might simply have to close if their path to profitability is too distant. The exit rate of unprofitable firms is currently low by historical standards and has actually declined since the start of the pandemic, leaving it ample room to rise from here (Exhibit 9, right).

Exhibit 9: Higher Interest Rates Could Cause Some Unprofitable Companies to Cut Costs More Aggressively or Close If Investors Start to See the Opportunity Cost of Financing Long-Term Bets As Too High

Impact of a $1 increase in interest expense on…	Sample			
	All firms		Persistently unprofitable firms	
	1	2	3	4
…labor costs	-0.21***		-0.31***	
…labor costs via employment		-0.11***		-0.15***

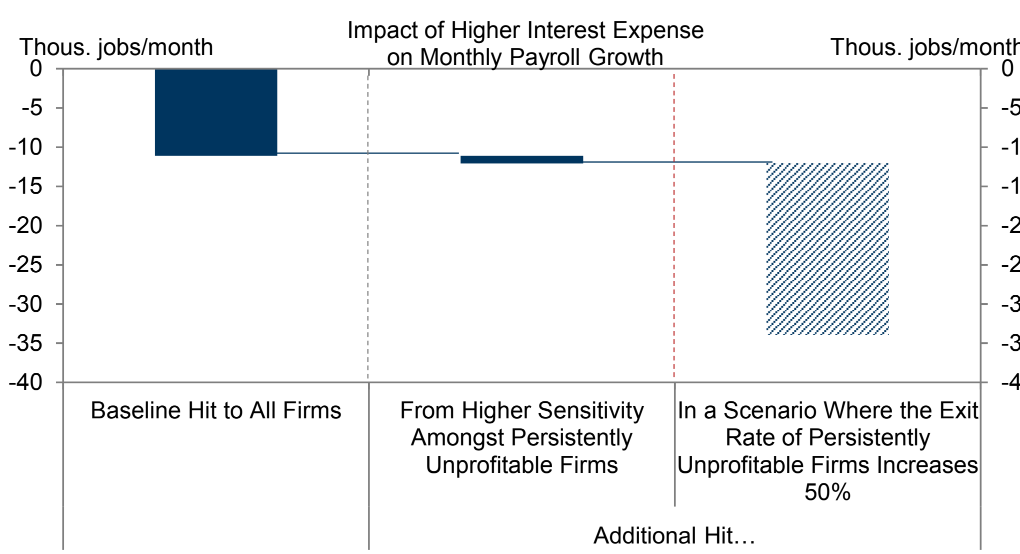
Note: The dependent and interest expense variables are expressed as shares of lagged revenues.
Sample period: 1965-2017
*** Significant at the 1% level.
All regressions include controls, including lagged employment, capex, and assets, and firm age.



Source: Compustat, Goldman Sachs Global Investment Research

We recently estimated that the coming rise in interest expense from the looming corporate debt maturity wall presents a roughly 10k headwind to monthly payroll growth on average in the coming years (Exhibit 10, left bar). Our analysis suggests that the higher interest rate sensitivity of persistently unprofitable firms poses only modest upside risk to our baseline estimate (middle bar), but business closures could have a much larger impact. For example, a 50% increase in the exit rate of persistently unprofitable firms (from 8% per year to 12%, an elevated but not historically unusual level) would add a further 20k drag on monthly payroll growth, which would be worth a roughly 0.2pp hit to GDP growth. A doubling of the exit rate back to the levels of the financial crisis would instead double these estimates.

Exhibit 10: If Some Unprofitable Firms Are Forced to Cut Labor Costs Aggressively and Especially If Many Are Forced to Close, the Hit to Employment from Higher Rates Would Grow



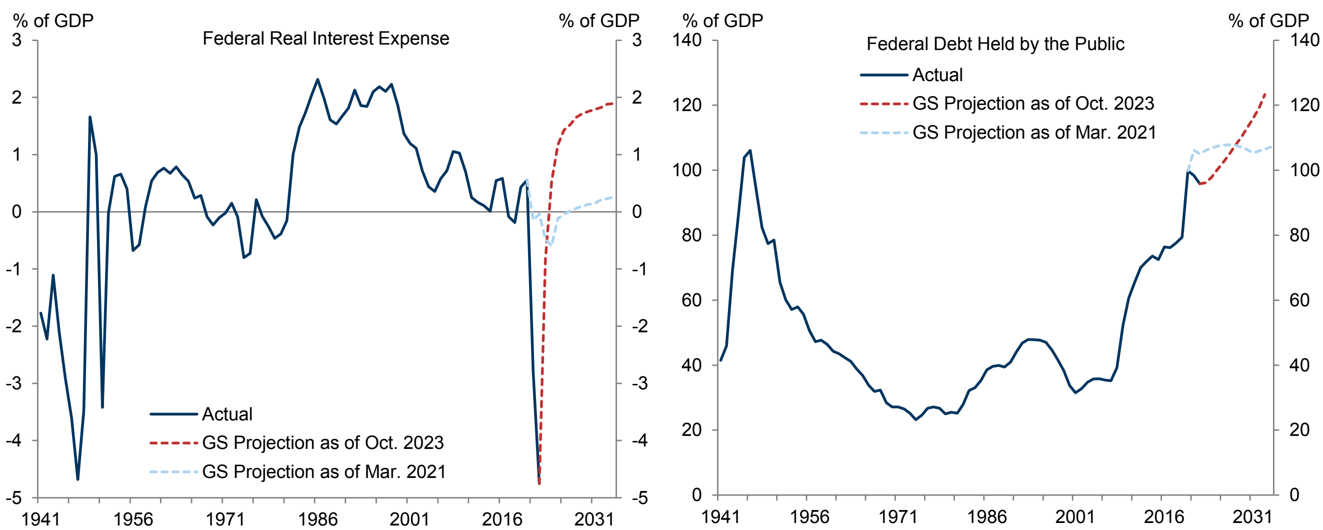
Source: Goldman Sachs Global Investment Research

The Risk of a Fiscal Adjustment

In the public sector, projections of real interest expense and the federal debt-to-GDP ratio look much worse than before the pandemic or even than a couple of years ago, when the largest pandemic relief programs were already included in fiscal projections. We now project that federal interest expense as a percent of GDP will surpass the early 1990s peak by 2025 and that the debt-to-GDP ratio will rise from 96% to 123% over the next decade (Exhibit 11).

The main challenge, a chronic primary deficit of about 3% of GDP that far exceeds what has been normal historically when the economy is at full employment, dates back to the mid-2010s. But debt dynamics looked less problematic before because the interest rate on government debt (*r*) was expected to remain well below nominal GDP growth (*g*) in the future. Higher interest rates, if they persist, will eventually add about 2% of GDP in real interest expense to the cost of stabilizing the debt-to-GDP ratio.

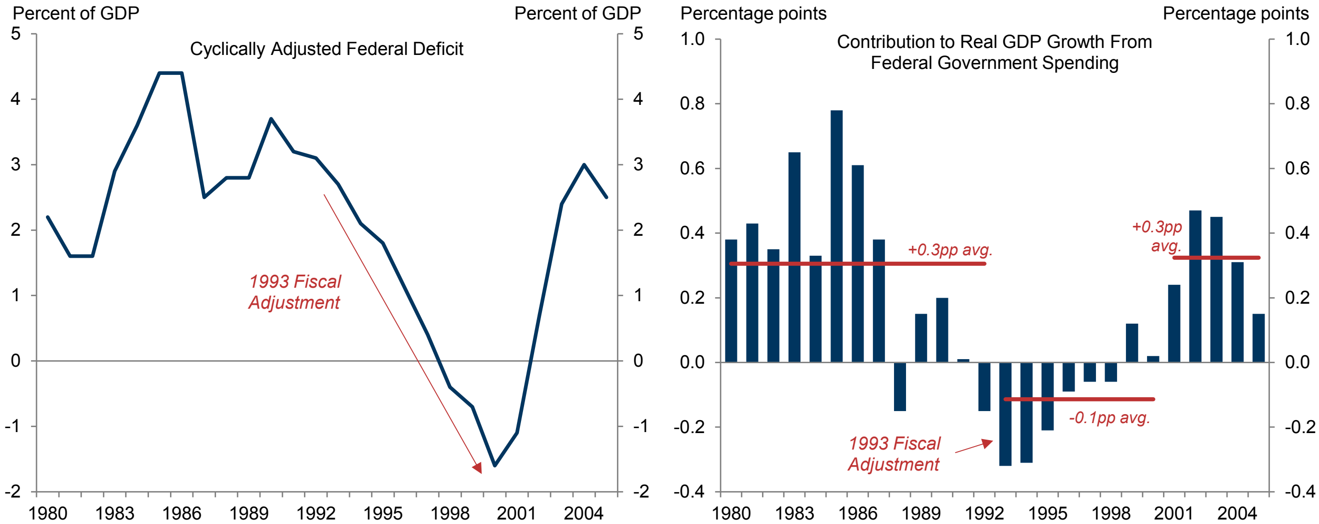
Exhibit 11: The Deterioration of the Outlook for Federal Interest Expense and Debt in a Higher-Rate Environment Could Prompt a Fiscal Adjustment at Some Point, Though It Appears Unlikely Anytime Soon



Source: Congressional Budget Office, Goldman Sachs Global Investment Research

We think it is unlikely that concern about debt sustainability will lead to a deficit reduction agreement anytime soon because of congressional gridlock, a lack of political attention to deficit reduction, and the upcoming 2024 election. And with neither of the likely presidential nominees focused on deficit reduction, it is unclear how much will change after the election. But if a fiscal adjustment does happen eventually, the 1993 deficit reduction provides a possible illustration of what it might look like—a similar adjustment would imply a hit to GDP growth of roughly as much as ½pp per year for a number of years.

Exhibit 12: If a Future Fiscal Adjustment Were Similar to the 1993 Deficit Reduction, It Would Imply a Hit to GDP Growth of Roughly ½pp for a Number of Years



Source: Congressional Budget Office, Department of Commerce, Goldman Sachs Global Investment Research

Higher Rates Are a Moderate Headwind to Growth, Not a Recessionary Shock

Our financial conditions index framework captures the main channels through which higher interest rates affect the economy. It implies that the recent rise is likely to be a moderate headwind to growth, not a recessionary shock. That verdict does not change when we tweak our framework a bit to account for unique features of this cycle like the delayed impact of higher rates on corporate interest expense.

The abrupt move away from the assumption last cycle that interest rates would remain very low indefinitely into the future might present some additional risks, as discussed above, though they are highly uncertain. In any case, our analysis above suggests that they are probably not large enough individually to trigger a recession unless they occur abruptly and aggressively or simultaneously.

If these risks were to materialize and add more meaningfully to the growth headwind, we think that the Fed would likely deliver rate cuts that would offset some or all of the impact. In fact, in that scenario, investors might well revise their expectations of future interest rates part of the way back down.

David Mericle

Ronnie Walker

The US Economic and Financial Outlook

THE US ECONOMIC AND FINANCIAL OUTLOOK
(% change on previous period, annualized, except where noted)

	2021	2022	2023 (f)	2024 (f)	2025 (f)	2026 (f)	2023 Q1	2023 Q2	2023 Q3	2023 Q4	2024 Q1	2024 Q2	2024 Q3	2024 Q4
OUTPUT AND SPENDING														
Real GDP	5.8	1.9	2.2	1.9	1.9	1.9	2.2	2.1	3.8	0.7	1.9	1.9	1.9	1.9
Real GDP (annual=Q4/Q4, quarterly=yoy)	5.4	0.7	2.2	1.9	1.9	1.9	1.7	2.4	2.7	2.2	2.1	2.1	1.6	1.9
Consumer Expenditures	8.4	2.5	2.1	1.7	1.9	1.9	3.8	0.8	3.1	0.8	1.6	1.9	1.9	1.9
Residential Fixed Investment	10.7	-9.0	-11.2	2.7	3.2	3.0	-5.3	-2.2	1.8	2.5	3.5	3.5	3.5	3.5
Business Fixed Investment	5.9	5.2	4.4	3.6	3.7	3.6	5.7	7.4	1.0	3.5	3.5	4.1	3.8	3.8
Structures	-3.2	-2.1	10.9	2.4	2.8	3.0	30.3	16.1	-1.8	2.0	2.0	2.0	2.5	2.5
Equipment	6.4	5.2	0.9	4.7	3.4	3.0	-4.1	7.7	1.6	6.0	5.0	5.0	4.0	4.0
Intellectual Property Products	10.4	9.1	4.3	3.2	4.5	4.5	3.8	2.7	2.0	2.0	3.0	4.5	4.5	4.5
Federal Government	1.4	-2.8	3.2	0.2	0.0	0.0	5.2	1.1	0.5	-0.6	0.6	0.0	0.0	0.0
State & Local Government	-1.3	0.2	3.1	0.6	0.9	1.0	4.6	4.7	0.8	0.0	0.0	0.1	0.9	0.9
Net Exports ($bn, '12)	-934	-1,051	-903	-909	-931	-936	-935	-928	-868	-880	-893	-903	-914	-927
Inventory Investment ($bn, '12)	13	128	21	45	60	60	27	15	28	15	30	40	50	60
Industrial Production, Mfg.	4.9	2.7	0.2	2.9	3.3	3.3	-0.3	0.4	4.0	2.3	2.9	3.3	3.3	3.4
HOUSING MARKET														
Housing Starts (units, thous)	1,606	1,551	1,424	1,539	1,539	1,539	1,385	1,450	1,425	1,437	1,539	1,539	1,539	1,539
New Home Sales (units, thous)	769	637	694	713	716	716	638	691	726	721	713	710	714	716
Existing Home Sales (units, thous)	6,128	5,081	4,276	4,546	4,796	4,827	4,327	4,250	4,259	4,268	4,390	4,512	4,607	4,674
Case-Shiller Home Prices (%yoy)*	19.0	7.5	2.0	1.7	2.4	3.7	2.3	-0.2	0.6	2.0	2.6	1.4	1.6	1.7
INFLATION (% ch, yr/yr)														
Consumer Price Index (CPI)**	7.2	6.4	3.1	2.8	2.3	2.4	5.8	4.1	3.5	3.1	2.9	2.9	2.8	2.8
Core CPI **	5.5	5.7	3.8	2.9	2.5	2.5	5.6	5.2	4.4	3.9	3.6	3.2	3.2	3.0
Core PCE** †	5.2	4.9	3.3	2.4	2.2	2.1	4.8	4.6	3.9	3.4	2.9	2.6	2.6	2.5
LABOR MARKET														
Unemployment Rate (%)^	3.9	3.5	3.6	3.6	3.6	3.6	3.5	3.6	3.8	3.6	3.6	3.6	3.6	3.6
U6 Underemployment Rate (%)^	7.3	6.5	6.7	6.6	6.6	6.6	6.7	6.9	7.0	6.7	6.6	6.6	6.6	6.6
Payrolls (thous, monthly rate)	606	399	230	103	80	75	312	201	266	142	112	100	100	100
Employment-Population Ratio (%)^	59.5	60.1	60.5	60.4	60.2	60.0	60.4	60.3	60.4	60.5	60.5	60.5	60.4	60.4
Labor Force Participation Rate (%)^	62.0	62.3	62.8	62.6	62.4	62.4	62.6	62.6	62.8	62.8	62.7	62.7	62.7	62.6
Average Hourly Earnings (%yoy)	4.2	5.3	4.3	3.9	3.6	3.6	4.5	4.4	4.2	4.1	4.1	3.9	3.8	3.7
GOVERNMENT FINANCE														
Federal Budget (FY, $bn)	-2,775	-1,375	-1,700	-1,700	-1,900	-1,800	--	--	--	--	--	--	--	--
FINANCIAL INDICATORS														
FF Target Range (Bottom-Top, %)^	0-0.25	4.25-4.5	5.25-5.5	5-5.25	4-4.25	3-3.25	4.75-5	5-5.25	5.25-5.5	5.25-5.5	5.25-5.5	5.25-5.5	5.25-5.5	5-5.25
10-Year Treasury Note^	1.52	3.88	4.30	4.30	4.25	4.25	3.48	3.81	4.59	4.30	4.60	4.60	4.50	4.30
Euro (€/$)^	1.13	1.07	1.07	1.15	1.15	1.15	1.09	1.09	1.06	1.07	1.09	1.11	1.12	1.15
Yen ($/¥)^	115	132	150	135	135	135	133	144	149	150	153	153	151	135

* Weighted average of metro-level HPIs for 381 metro cities where the weights are dollar values of housing stock reported in the American Community Survey. Annual numbers are Q4/Q4.
** Annual inflation numbers are December year-on-year values. Quarterly values are Q4/Q4.
† PCE = Personal consumption expenditures. ^ Denotes end of period.
Note: Published figures in bold.

Source: Goldman Sachs Global Investment Research

Disclosure Appendix

Reg AC

We, Jan Hatzius, Alec Phillips, David Mericle, Spencer Hill, CFA, Ronnie Walker, Tim Krupa and Manuel Abecasis, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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