

ANALYSIS
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Going Down the Debt Limit Rabbit Hole

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Going Down the Debt Limit Rabbit Hole

BY MARK ZANDI, CRISTIAN DERITIS AND BERNARD YAROS

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Estimating the X-date

The [Treasury debt limit](#), also known as the debt ceiling, is the maximum amount of debt that the Treasury can issue to the public or to other federal agencies. The amount is set by law and has been increased or suspended many times over the decades to allow the Treasury to finance the government's operations.

The debt limit was [hit on January 19](#), and the Treasury is now using “[extraordinary measures](#)” to come up with the additional cash needed to pay its bills. Based on our assessment of the government's outlays and receipts in coming weeks, those measures seem likely to be exhausted by mid-August. To be more precise, the X-date appears to be August 18.² That is a few days after the Treasury will have made a scheduled interest payment to Treasury bondholders (see Chart 1). Investors in short-term Treasury securities are coalescing around a similar X-date, demanding higher yields on securities that mature just after the date given worries that a debt limit breach may occur (see Chart 2).

Unless the debt limit is increased, suspended, or done away with by then, someone will not get paid in a timely way. The U.S. government will default on its obligations. In this analysis, a default occurs when the Treasury fails to make good on any of its obligations in full or on time, regardless of whether it is to bondholders, Social Security beneficiaries, defense contractors, or others.

The original intent of the debt limit was to force lawmakers to be fiscally disciplined—to raise taxes or restrain government spending sufficiently to keep the government's deficits in check and its debt load low and stable. It has failed at this. Instead, the debt limit has become highly disruptive to the fiscal process, resulting in unproductive political brinkmanship that has unnerved financial markets, businesses and households (see Chart 3).

The current battle over the debt limit looks to be even more vexed than in times past. Odds that lawmakers are unable to resolve their differences and avoid a breach of the debt limit appear mean-

Chart 1: X-Date Is August 18 Give or Take

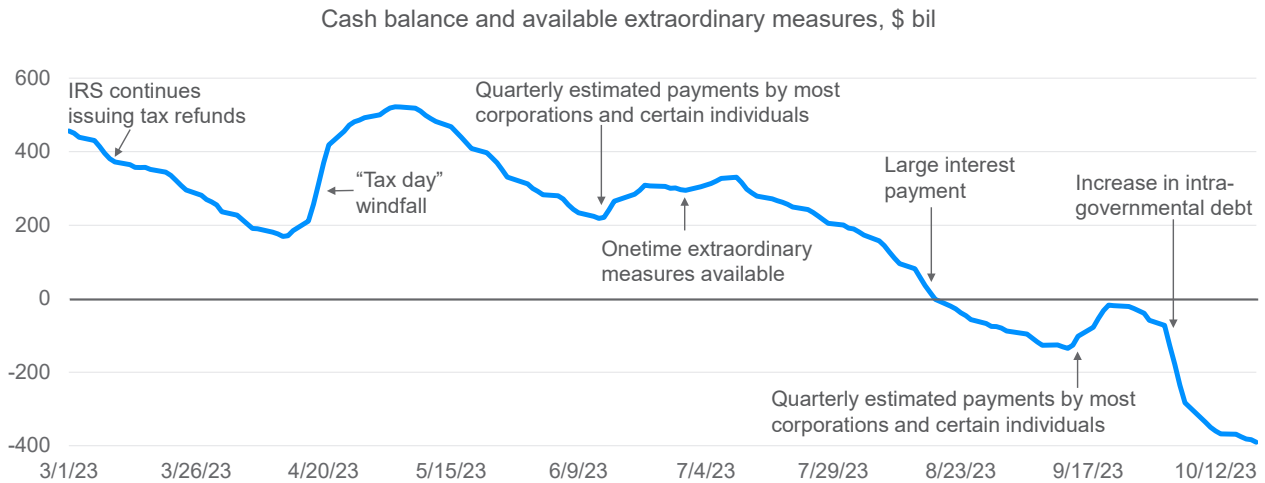
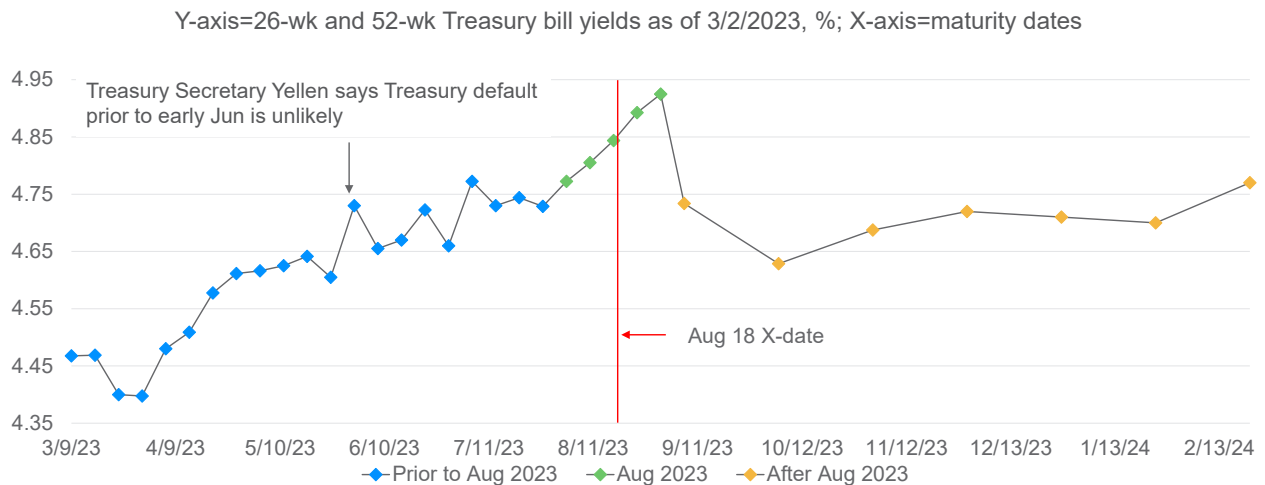


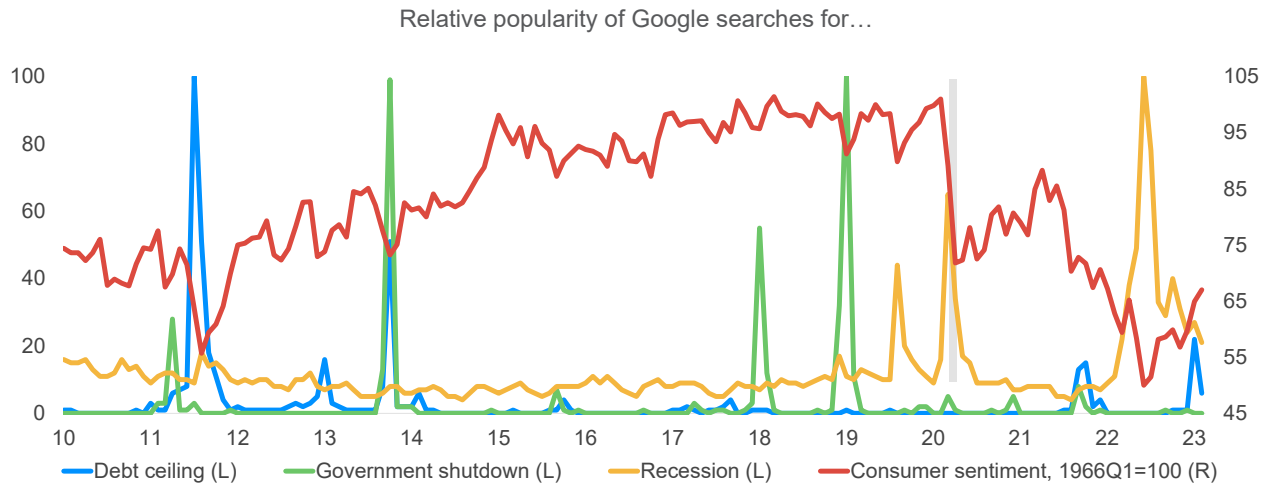
Chart 2: Investors Also Expect a Mid-August X-Date



ingfully greater than zero. The difficulty House Republicans had electing Kevin McCarthy as Speaker, and the terms Speaker McCarthy acquiesced to—including having a battle over the debt limit with Democrats—do not augur well for a reasonably graceful resolution to the current impasse. Getting any legislation through the legislative process is tough under typical circumstances. Getting highly contentious debt limit legislation signed into law through this Congress before a potential breach will be a heavy lift.

Adding to concern is the growing number of lawmakers openly contemplating whether the Treasury could navigate a breach of the debt limit by prioritizing payments to Treasury bondholders. They may be earnest to question whether a breach would lead to turmoil in financial markets and the economy along the lines shown in this analysis, but their nonchalance is badly misguided.

Chart 3: Debt Limit Battle Will Hit an Already Fragile Collective Psyche



Sources: Google Trends, Univ. of Michigan, Moody's Analytics

Another worry is that global investors are not more exercised regarding the political and procedural headwinds in addressing the debt limit. Nonplussed investors believe they have seen this movie many times and know how it ends: That after bitter political back and forth, lawmakers will find a way to come to terms before a breach. Thus, interest rates will not rise and stock prices will not fall as the X-date approaches, sending the wrong signal to lawmakers who take their cues from investors. With investors so sanguine about how this drama will play out, policymakers may believe they have nothing to worry about and fail to resolve the debt limit in time. This would be an egregious error.

Just how lawmakers will resolve the impasse over the debt limit is thus uncomfortably uncertain. There are many possible scenarios, each with different macroeconomic implications. In the analysis that follows, we consider five scenarios ranging from a clean debt limit increase with no changes to fiscal policy and thus with no meaningful impact on the economy to a breach of the debt limit that drags on for weeks and is cataclysmic to financial markets and the economy. We use the Moody's Analytics Global Macroeconomic Model to quantify the economic impacts.³

Clean Debt Limit Increase⁴

In this scenario, history is a good guide and after much political wrangling Congress and the Biden administration come to terms just in time. They pass legislation to increase the debt limit just before the X-date, and the Treasury is able to pay all of the government's bills on time. The legislation does not include any meaningful changes to fiscal policy and is thus a so-called clean debt limit increase. As in times past, lawmakers are ultimately motivated to action by the recognition of the severe economic and political costs of breaching the debt limit.

This scenario is consistent with the long, arduous history of agreements on the debt limit, and it is fitting given the bipartisan nature of the financial obligations the debt would cover. Both Republicans and Democrats supported close to \$3 trillion in deficit-financed fiscal aid provided to the economy through the pandemic under President Trump in 2020. And while only Democrats supported the almost \$2 trillion deficit-financed [American Rescue Plan](#) passed early in the Biden administration to help with the fallout from the

pandemic, only Republicans supported the nearly \$2 trillion deficit-financed [Tax Cut and Jobs Act](#) passed early in the Trump administration that cut corporate and personal income taxes.

More specifically, in this scenario, we assume lawmakers temporarily suspend the debt limit just prior to the August 18 X-date through fiscal 2023, which ends on September 30. They do this to line up the debt limit decision with the federal government's fiscal 2024 budget, which is also must-pass legislation for lawmakers to ensure the government is funded and avoids a shutdown. To make sure there is maximal political pressure to get this all done by October 1 the legislation that suspends the limit requires the Treasury to have the same cash balance at the end of fiscal 2023 as it had at the start of the suspension when the cash balance was virtually exhausted.⁵

In this scenario, lawmakers go on to increase the debt limit just prior to the October 1 start of fiscal 2024. They increase the limit enough to push the next debt limit battle into early 2025, thus ensuring that it will not get caught up in the 2024 presidential election. We also assume that there are no other serious debt limit crises over the 10-year budget horizon through fiscal 2033.

Getting the debt limit legislation across the finish line will surely be messy and painful at times, causing heightened volatility in financial markets. But in this scenario, lawmakers ultimately get the job done before there is economic damage. The most significant financial market reaction is higher Treasury-bill yields for securities maturing just after the X-date. Stock prices, credit spreads and market volatility will also be under some pressure in the days leading up to an agreement. But at the end of the drama there is no meaningful macroeconomic fallout (see Tables 1-4).

Constitutional Crisis

Odds are that lawmakers will come to terms in time, but what if they do not? In this scenario, we assume that lawmakers are unable to reach agreement, and with a debt limit breach imminent President Biden invokes [Section 4 of the 14th Amendment](#) and orders the Treasury to keep issuing bonds and paying the government's bills. The 14th Amendment states that the "validity of the public debt of the United States...shall not be questioned." This seems a tenuous constitutional interpretation for the president to use, but given no better option, he uses it.

Indeed, a number of workarounds to a debt limit are being hotly debated. One of the most notable would have the Treasury issue a \$1 trillion platinum coin to raise the cash it needs. Federal law does provide the Treasury with the authority to mint platinum coins, and [the thinking is](#) that the Treasury would mint a \$1 trillion coin, deposit it at the Federal Reserve, and draw it down to pay the government's bills. However, the law authorizing platinum coins envisaged commemorative coins, not circumventing Congress' power of the purse. This would also put the Federal Reserve in the middle of the battle, badly politicizing the central bank and significantly jeopardizing its independence, which is critical to a well-functioning economy.

Another proposed workaround is to have the Treasury issue premium bonds rather than par bonds as Treasury debt comes due, lowering the face amount of debt outstanding and subject to the debt limit.⁶ Of course, the present value of the Treasury's debt obligation has not changed, so this is just a budget gimmick, but so too is the debt limit. While it shows creative financial engineering, this is not something the Treasury could roll out quickly, and it would be costly to commit the Treasury to making higher and higher interest payments. It also threatens the well-functioning of the Treasury bond market, the world's largest and most liquid market. Besides, interest rates would likely still spike as investors view this chicanery as putting the nation's fiscal discipline at risk.⁷

But if push comes to shove and lawmakers are about to breach the debt limit, a 14th Amendment declaration by the president seems the most viable option. The president can reasonably argue that his action preserves the constitutional sanctity of the nation's debt and abides by the government's duty to pay all its bills on time. Arguing otherwise seems an uncomfortable political position to be in.

Of course, Section 4 of the 14th Amendment was passed in the wake of the Civil War to ensure the federal government was not on the hook for the war debt of the Confederate states. Investors would rightly wonder if using the amendment to abrogate the debt limit law would stand up in the courts. A constitutional crisis would ensue with the Supreme Court taking up the matter. In this scenario, we assume that the court rules by the end of October, about as long as it took for the court to rule on *Bush vs. Gore* in the wake of the contested 2000 presidential election, and determines that Biden's move is constitutional. The debt limit law is effectively revoked. After the Supreme Court's ruling, lawmakers quickly come to terms to finance the government through fiscal 2024.

The extraordinary uncertainty created by the constitutional crisis leads to a selloff in financial markets until the Supreme Court rules. GDP and jobs are briefly diminished during this period, but the economy avoids a recession and quickly rebounds. Long term, Treasury yields are a few basis points lower as the debt limit is no longer a threat to the budget process and the nation's finances.

Payment Prioritization

A more worrisome scenario is that the debt limit is breached, and the Treasury prioritizes who gets paid on time and who does not. The department almost certainly would pay investors in Treasury securities first to avoid defaulting on its debt obligations.

While the Treasury may have the technical ability to pay bond investors before others, as those payments are handled by the [Fedwire payment system](#), and a different computer system handles other government obligations, it is unclear whether the Treasury is legally able to do so. It would almost certainly be challenged in the courts. Bond investors, unsure how this legal uncertainty would be resolved, would demand a much higher interest rate in compensation.

Moreover, politically it seems a stretch to think that bond investors, who include many [foreign investors](#), would get their money ahead of American seniors, the military, or even the federal government's electric bill.⁸ And then there is the question of how all the other bills would be prioritized. It is not possible for the Treasury to sort through the blizzard of payments due each day. More likely, as outlined in a [report by the Treasury's inspector general](#), the Treasury would delay all payments until it received enough cash to pay a given day's bills.

Financial markets would be roiled. A [TARP moment](#) seems likely. This harkens to the dark day in autumn 2008 when Congress initially failed to pass the Troubled Asset Relief Program bailout of the banking system, and the stock market and other financial markets cratered. A similar crisis, characterized by spiking interest rates and plunging equity prices, would be ignited. Short-term funding markets, which are essential to the flow of credit that helps finance the economy's day-to-day activities, likely would freeze up as well. It was a matter of days for Congress to reverse itself and vote for TARP, which is about the amount of time we assume is needed to convince this Congress to reverse itself and vote for a debt limit increase.

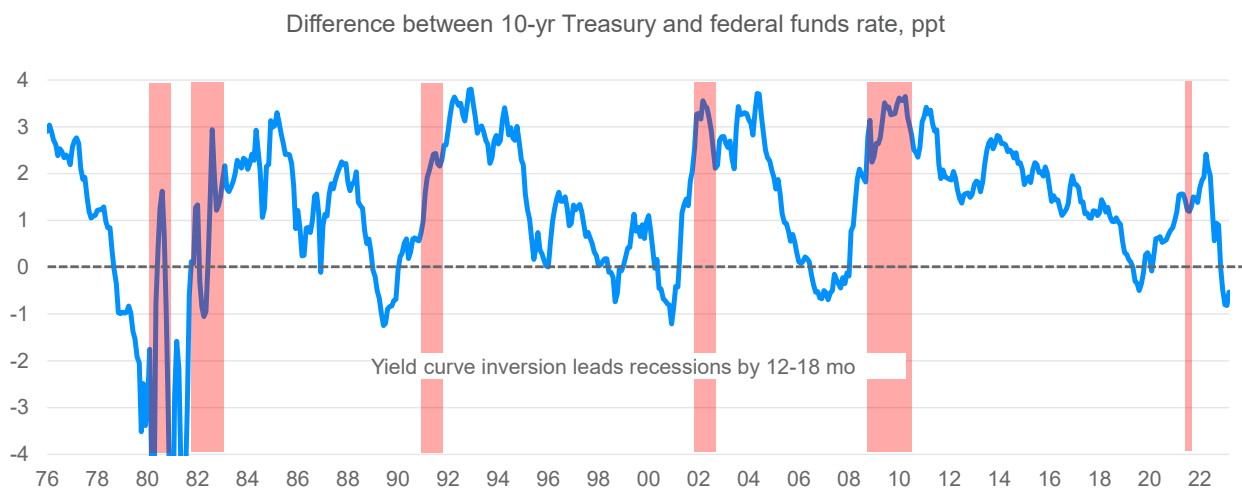
It is unimaginable that lawmakers would allow things to get to this point, but as the TARP experience highlights, they have done the unimaginable before. Still, if that harrowing experience is a guide, lawmakers would quickly reverse course and resolve the debt limit impasse to allow the Treasury to resume issuing debt again and pay its bills.

It is unclear whether the credit rating agencies would downgrade Treasury debt in this scenario. According to [Moody's Investors Service](#), it would downgrade if the Treasury failed to make a bond payment. But, according to the rating agency, if the episode was short-lived and cured with full recovery, the ratings impact "would likely be limited, with the sovereign rating likely remaining close to Aaa, consistent with the US' very high capacity to repay debt and supported by a number of key considerations including very strong economic and institutional credit features."⁹ However, [Standard & Poor's](#) downgraded the nation's debt in the 2011 debt limit battle for much less, citing the political dysfunction at the time. Since then, that dysfunction has only intensified.

A downgrade of Treasury debt would set off a cascade of credit implications and downgrades on the debt of many other financial institutions, nonfinancial corporations, municipalities, infrastructure providers, structured finance transactions, and other debt issuers. Those institutions that are clearly backstopped by the U.S. government, institutions such as Fannie Mae, Freddie Mac, and the Federal Home Loan Banks, would suffer the biggest changes to their ratings. The effects on other institutions' ratings would vary depending on their relationship with the U.S. government and offsetting financial strengths.

Despite lawmakers' quick reversal in this scenario and our assumption that the rating agencies do not engage in downgrades, significant damage will have already been done. The timing could not be worse for the economy; even without the specter of a debt limit breach many CEOs and economists believe a recession is dead ahead. With the Federal Reserve ramping up interest rates in an effort to quell wage and price pressures, avoiding a recession would be difficult even if nothing else went wrong. Most leading indicators of recession, including the prescient Treasury yield curve—the difference between long- and short-term Treasury yields—strongly point to recession beginning later this year at about the time lawmakers will be doing battle over the limit (see Chart 4).

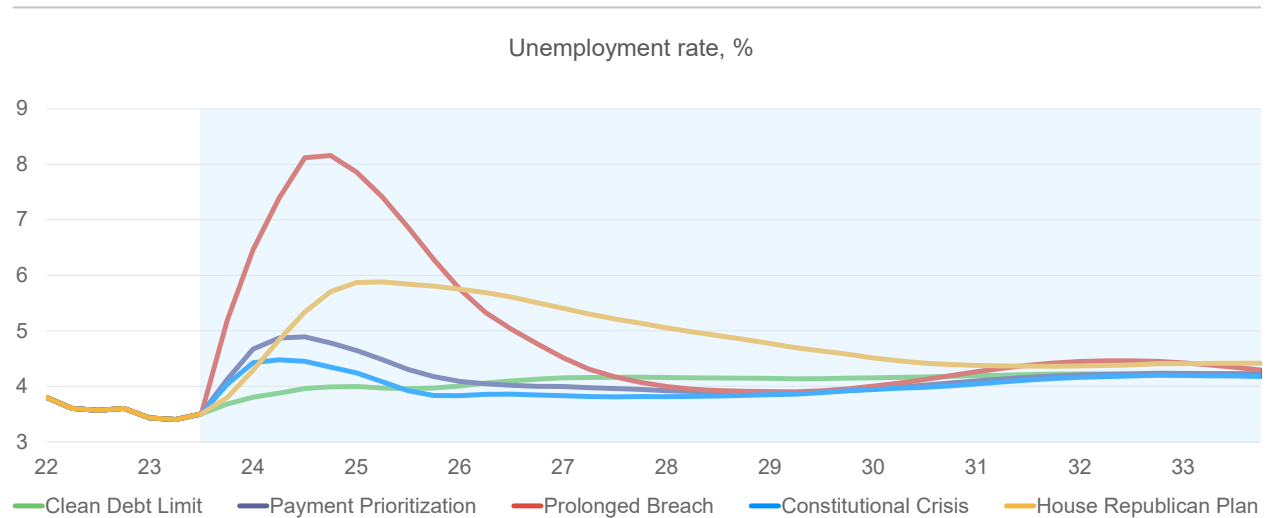
Chart 4: Leading Indicators Sound the Recession Alarm



Sources: Federal Reserve, Moody's Analytics

The already fragile economy suffers a mild recession beginning late this year in this scenario. Real GDP declines by nearly 0.5 percentage point peak to trough, employment declines by close to 1 million jobs, and the unemployment rate rises from 3.4% to a peak of almost 5% (see Chart 5). Financial markets sell off but settle as investors take solace in lawmakers' decision to quickly reverse course. The long-term fallout on the economy is marginal, although global investors continue to demand several basis points more in interest on Treasury debt to compensate for the meaningful risk that lawmakers may breach the debt limit again in the future. Even a few basis points more on trillions in Treasury debt adds up to a significant cost to taxpayers. If Treasury securities are no longer perceived as risk free by global investors, future generations of Americans would pay a steep economic price.

Chart 5: Unemployment Under Different Debt Limit Scenarios



Sources: BLS, Moody's Analytics

House Republican Plan

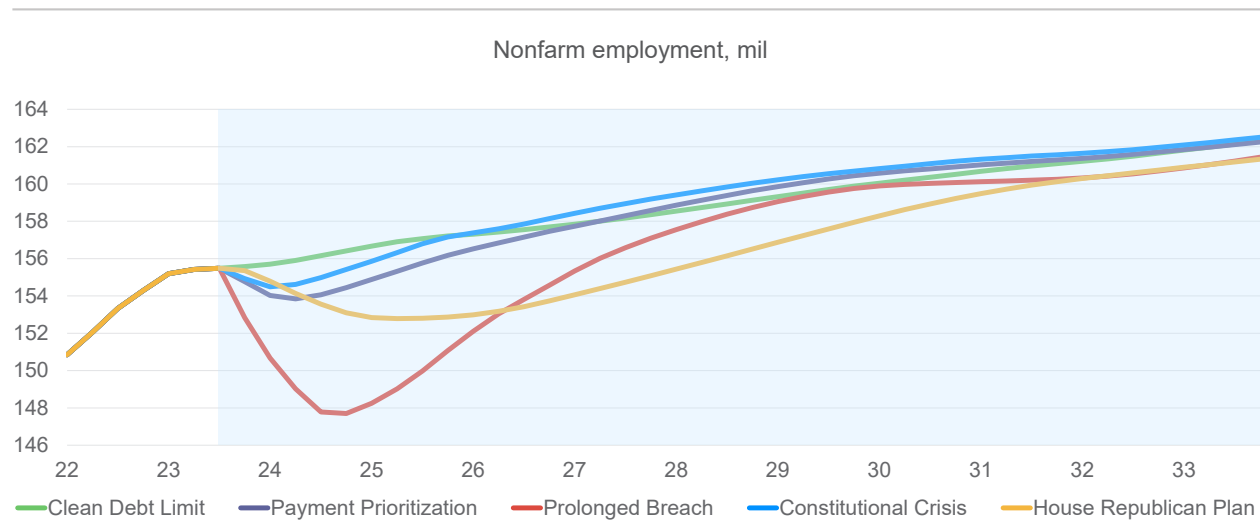
In this scenario, lawmakers avoid a debt limit breach by agreeing to adopt the government budget cuts [recently proposed by House Republicans](#). That is, the Biden administration and enough Congressional Democrats acquiesce to a large reduction in future budgeted government outlays to balance the government's budget at the end of the 10-year budget horizon. There are no tax increases to help achieve the balanced budget goal.

[According to the Committee for Responsible Budget](#), under the [CBO's February 2023 10-year budget projections](#), fully balancing the federal budget in that period would require \$16 trillion in total spending cuts. By 2033, at the end of the budget horizon, spending would need to be slashed by more than a quarter—even more if there are any exemptions.

House Republicans have yet to precisely lay out how these spending cuts would be achieved, although they have committed to leaving the Social Security and Medicare entitlement programs intact. Given this constraint, they could opt to largely eliminate all defense and nondefense discretionary spending programs. Another option would be to cut Medicaid in half while eliminating all other mandatory spending outside of Social Security and Medicare. But most likely, and what we assume in this scenario, is that nondefense discretionary spending and the Medicaid program are eliminated.¹⁰

Given the dramatic reduction in government spending in this scenario and the already fragile economy, the economy suffers a recession in 2024, costing the economy 2.6 million jobs at the worst of the downturn and pushing unemployment to a peak of near 6%. The economy's long-term growth prospects are also meaningfully diminished given the severe fiscal restraint. A decade from now real GDP is 2.7% lower than in the clean debt limit increase scenario (equal to more than one year's worth of typical GDP growth), there are almost 1 million fewer jobs, and the full-employment unemployment rate is 0.2 percentage point higher (see Chart 6). Interest rates are lower in this scenario in part because of the weaker economy but also because of much less government borrowing given the massive cuts in outlays.

Chart 6: Employment Under Different Debt Limit Scenarios



Sources: BLS, Moody's Analytics

This analysis does not consider the distributional impacts of this scenario, but it is fair to say that lower-income households suffer substantially more financially, as they rely heavily on the government benefits lost in the budget cuts. They are also the principal casualties of the lost jobs and higher unemployment resulting from the weaker economy.

Prolonged Breach

This leads to the darkest scenario. In it, lawmakers breach the debt limit and trigger a TARP moment but then fail to respond and immediately reverse course. Instead, the political impasse drags on for weeks—say to just before Thanksgiving with the Treasury prioritizing debt payments over other bills. We assume in these circumstances that the credit rating agencies would downgrade Treasury debt, precipitating widespread downgrades throughout the financial system.

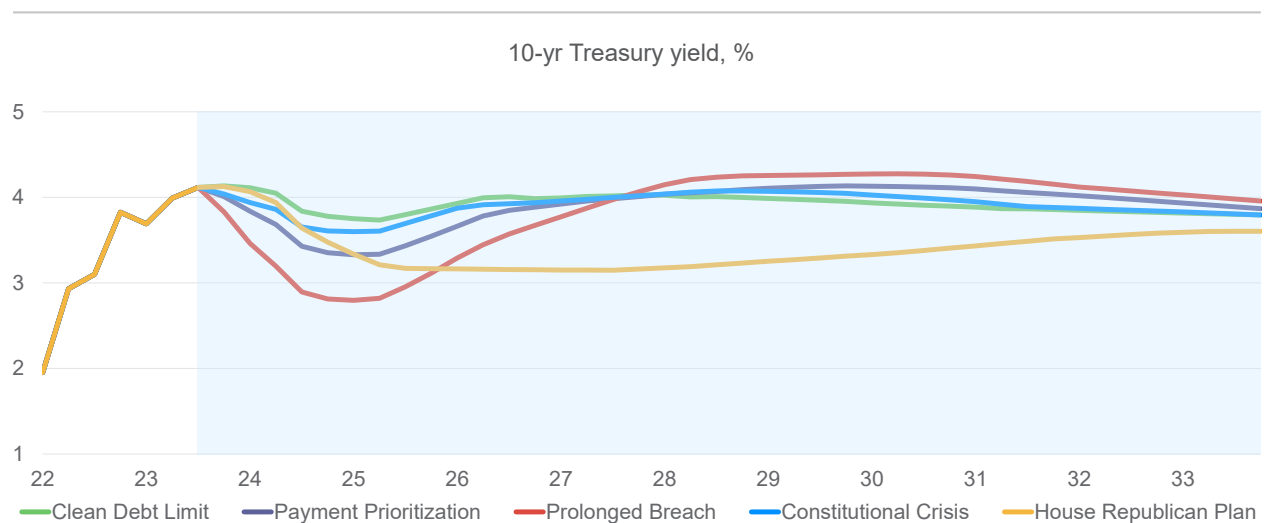
The blow to the economy would be cataclysmic. Immediately, the federal government would have no option but to slash its outlays, since outlays could be no greater than revenues the Treasury collects. Assuming an October 1 debt limit breach that dragged on through mid-November, the Treasury would have no choice but to eliminate a cash deficit of approximately \$350 billion by slashing government spending. As these cuts work through the economy, the hit to growth would be overwhelming.

Adding to the economic turmoil would be the damage to consumer, business and investor confidence. Political brinkmanship over the operations of the federal government has been frightening for Americans to watch. In both the 2011 and 2013 debt limit episodes, households were closely attuned to the political hardball being played in Washington, and consumer sentiment slumped. The brinkmanship is also unnerving for businesses that will curtail investment and hiring, and for financial institutions that will quickly turn more cautious in extending credit to households and businesses.

It is difficult to envisage what steps policymakers could take to mitigate the economic carnage. With lawmakers at loggerheads over the debt limit, it is unlikely they would agree on any fiscal support for the economy in response to the self-inflicted crisis, at least not quickly. The Federal Reserve would immediately cut short-term rates to near the zero lower bound and ramp up quantitative easing—Fed purchases of Treasury bonds—but any benefit would be undermined as global investors sold or stopped buying U.S. securities.¹¹

The economic downturn that would ensue would be comparable to that suffered during the global financial crisis. That means real GDP would decline beginning late this year and through much of 2024, falling more than 4% peak to trough, costing the economy more than 7 million jobs, and pushing the unemployment rate above 8%. Stock prices would fall by almost a fifth at the worst of the selloff, wiping out \$10 trillion in household wealth. Treasury yields, mortgage rates, and other consumer and corporate borrowing rates would initially spike, until the debt limit is resolved, decline during the subsequent deep recession, but ultimately remain elevated as investors demand compensation for the risk of a future breach (see Chart 7). The economy's long-term growth prospects are also weakened. A decade from now, real GDP is almost 1 percentage point lower than in the Clean Debt Limit Increase scenario, there are 900,000 fewer jobs, and the full-employment, or structural, unemployment rate is 0.1 percentage point higher.

Chart 7: 10-Year Treasury Yield Under Different Debt Limit Scenarios



Sources: Federal Reserve, Moody's Analytics

The broad trade-weighted value of the U.S. dollar would decline only modestly in this scenario, at least in the near term, as global investors would be unsure of alternative global safe havens to the dollar. The Swiss franc, euro and British pound would be the most significant beneficiaries. However, the value of the U.S. dollar steadily weakens in the longer run, since its status as the global reserve currency is diminished.

Conclusions

That the U.S. government is “money good”—that it pays the government's bills on time—is a bedrock of the U.S. economy and global financial system. Alexander Hamilton, the nation's first Treasury secretary, established this principle at the founding of the nation when he agreed to [pay Revolutionary War bond investors](#) at 100 cents on the dollar, even though the bonds were trading at pennies on the dollar because few believed the new American government would make good on its debts.

When the government did make good, it established the sound credit of the U.S., ensuring that we are the global safe haven. Hamilton's action said that when times are tough, even here at home, capital still flows, keeping interest rates down and ultimately paving the way for the U.S. dollar to become the global economy's reserve currency. The economic benefits over the generations are incalculable. Lawmakers must put a quick end to their wrangling over the debt limit so future generations can enjoy the same benefits.

Political brinkmanship over the debt limit is thus painful to watch. If lawmakers are unable to increase or suspend the debt limit before the Treasury fails to make a payment later this summer, the resulting chaos in global financial markets will be overwhelming. The U.S. and global economies, which are already struggling with high inflation and rising interest rates, would suffer a severe economic downturn. In times past, lawmakers have taken strident warnings like these to heart and acted. Let us hope they do so again. Soon.

Table 1: Real GDP Impact of Debt Limit Scenarios

	Clean Debt Limit Increase		Constitutional Crisis		Payment Prioritization		House Republican Plan		Prolonged Breach			
	2012\$ bil	Annual % growth	2012\$ bil	Annual % growth	2012\$ bil	Annual % growth	2012\$ bil	Annual % growth	2012\$ bil	Annual % growth	% difference with Clean Debt Limit	% difference with Clean Debt Limit
2022Q1	19,924	(1.6)	19,924	(1.6)	19,924	(1.6)	19,924	(1.6)	19,924	(1.6)	-	-
2022Q2	19,895	(0.6)	19,895	(0.6)	19,895	(0.6)	19,895	(0.6)	19,895	(0.6)	-	-
2022Q3	20,055	3.2	20,055	3.2	20,055	3.2	20,055	3.2	20,055	3.2	-	-
2022Q4	20,198	2.9	20,198	2.9	20,198	2.9	20,198	2.9	20,198	2.9	-	-
2023Q1	20,178	(0.4)	20,178	(0.4)	20,178	(0.4)	20,178	(0.4)	20,178	(0.4)	0.0	0.0
2023Q2	20,227	1.0	20,227	1.0	20,227	1.0	20,227	1.0	20,227	1.0	0.0	0.0
2023Q3	20,316	1.8	20,316	1.8	20,316	1.8	20,316	1.8	20,316	1.8	0.0	0.0
2023Q4	20,420	2.1	20,282	2.1	20,247	(1.4)	20,247	(0.8)	20,366	1.1	(0.3)	(3.1)
2024Q1	20,538	2.3	20,320	2.3	20,230	(0.3)	20,230	(1.5)	20,336	0.5	(1.0)	(3.5)
2024Q2	20,662	2.4	20,466	2.4	20,329	2.0	20,329	(1.6)	20,267	0.0	(1.9)	(5.7)
2024Q3	20,791	2.5	20,635	2.5	20,488	3.2	20,488	(1.5)	20,230	0.2	(2.7)	(6.6)
2024Q4	20,925	2.6	20,809	2.6	20,665	3.5	20,665	(1.2)	20,228	0.9	(3.3)	(6.4)
2025Q1	21,070	2.8	20,987	2.8	20,851	3.6	20,851	(1.0)	20,301	1.8	(3.7)	(5.9)
2025Q2	21,218	2.8	21,178	2.8	21,046	3.8	21,046	(0.8)	20,403	2.4	(3.8)	(5.3)
2025Q3	21,363	2.8	21,375	2.8	21,243	3.8	21,243	(0.6)	20,534	2.6	(3.9)	(4.5)
2025Q4	21,507	2.7	21,550	2.7	21,442	3.8	21,442	(0.3)	20,673	2.8	(3.9)	(3.6)
2026Q1	21,650	2.7	21,703	2.7	21,627	3.5	21,627	(0.1)	20,816	2.9	(3.9)	(2.8)
2026Q2	21,785	2.5	21,847	2.5	21,790	3.0	21,790	0.0	20,961	2.9	(3.8)	(2.2)
2026Q3	21,919	2.5	21,996	2.5	21,947	2.9	21,947	0.1	21,112	3.0	(3.7)	(1.7)
2026Q4	22,051	2.4	22,146	2.4	22,095	2.7	22,095	0.2	21,257	2.9	(3.6)	(1.3)
2027Q1	22,180	2.4	22,289	2.4	22,233	2.5	22,233	0.2	21,404	2.9	(3.5)	(0.9)
2027Q2	22,305	2.3	22,423	2.3	22,370	2.5	22,370	0.3	21,545	2.7	(3.4)	(0.6)
2027Q3	22,439	2.4	22,561	2.4	22,511	2.5	22,511	0.3	21,695	2.9	(3.3)	(0.4)
2027Q4	22,574	2.4	22,698	2.4	22,655	2.6	22,655	0.4	21,843	2.9	(3.2)	(0.3)
2028Q1	22,707	2.4	22,831	2.4	22,795	2.5	22,795	0.4	21,990	2.8	(3.2)	(0.2)
2028Q2	22,841	2.4	22,962	2.4	22,934	2.4	22,934	0.4	22,141	2.7	(3.1)	(0.1)
2028Q3	22,971	2.3	23,091	2.3	23,068	2.4	23,068	0.4	22,292	2.6	(3.0)	(0.1)
2028Q4	23,096	2.2	23,212	2.2	23,195	2.2	23,195	0.4	22,438	2.4	(2.8)	(0.1)
2029Q1	23,218	2.1	23,329	2.1	23,318	2.1	23,318	0.4	22,582	2.3	(2.7)	(0.1)
2029Q2	23,340	2.1	23,445	2.1	23,438	2.1	23,438	0.4	22,722	2.3	(2.6)	(0.1)
2029Q3	23,459	2.1	23,556	2.1	23,555	2.0	23,555	0.4	22,858	2.2	(2.6)	(0.1)
2029Q4	23,576	2.0	23,664	2.0	23,667	1.9	23,667	0.4	22,988	2.1	(2.5)	(0.2)
2030Q1	23,692	2.0	23,770	2.0	23,776	1.9	23,776	0.4	23,115	2.0	(2.4)	(0.3)
2030Q2	23,808	2.0	23,876	2.0	23,883	1.8	23,883	0.3	23,239	1.9	(2.4)	(0.3)
2030Q3	23,924	2.0	23,982	2.0	23,990	1.8	23,990	0.3	23,360	1.9	(2.4)	(0.4)
2030Q4	24,038	1.9	24,086	1.9	24,095	1.8	24,095	0.2	23,475	1.8	(2.3)	(0.5)
2031Q1	24,154	1.9	24,193	1.9	24,202	1.8	24,202	0.2	23,589	1.8	(2.3)	(0.6)
2031Q2	24,273	2.0	24,303	2.0	24,312	1.8	24,312	0.2	23,702	1.8	(2.4)	(0.6)
2031Q3	24,393	2.0	24,416	2.0	24,424	1.9	24,424	0.1	23,814	1.8	(2.4)	(0.7)
2031Q4	24,511	2.0	24,527	2.0	24,535	1.8	24,535	0.1	23,922	1.7	(2.4)	(0.8)
2032Q1	24,631	2.0	24,641	2.0	24,649	1.9	24,649	0.1	24,028	1.7	(2.4)	(0.8)
2032Q2	24,753	2.0	24,757	2.0	24,766	1.9	24,766	0.1	24,136	1.8	(2.5)	(0.9)
2032Q3	24,877	2.0	24,875	2.0	24,886	2.0	24,886	0.0	24,245	1.8	(2.5)	(0.9)
2032Q4	25,004	2.1	24,998	2.1	25,011	2.0	25,011	0.0	24,357	1.9	(2.6)	(0.9)
2033Q1	25,134	2.1	25,124	2.1	25,140	2.1	25,140	0.0	24,470	1.9	(2.6)	(0.9)
2033Q2	25,266	2.1	25,252	2.1	25,271	2.1	25,271	0.0	24,586	1.9	(2.7)	(0.9)
2033Q3	25,399	2.1	25,383	2.1	25,405	2.1	25,405	0.0	24,703	2.0	(2.7)	(0.9)
2033Q4	25,533	2.1	25,516	2.1	25,541	2.2	25,541	0.0	24,823	2.0	(2.8)	(0.9)

Table 1: Real GDP Impact of Debt Limit Scenarios (Cont.)

	Clean Debt Limit Increase		Constitutional Crisis		Payment Prioritization		House Republican Plan		Prolonged Breach			
	2012\$ bil	Annual % growth	2012\$ bil	Annual % growth	2012\$ bil	Annual % growth	2012\$ bil	Annual % growth	2012\$ bil	Annual % growth	% difference with Clean Debt Limit	% difference with Clean Debt Limit
2022	20,018	2.1	20,018	2.1	20,018	2.1	20,018	2.1	20,018	2.1	0.0	0.0
2023	20,285	1.3	20,251	1.3	20,242	1.1	20,272	1.3	20,129	0.6	(0.2)	(0.8)
2024	20,729	2.2	20,558	2.2	20,428	0.9	20,266	0.7	19,528	(3.0)	(1.5)	(5.8)
2025	21,290	2.7	21,273	2.7	21,145	3.5	20,478	1.6	20,263	3.8	(0.7)	(4.8)
2026	21,851	2.6	21,923	2.6	21,865	3.4	21,037	2.8	21,412	5.7	0.1	(2.0)
2027	22,374	2.4	22,493	2.4	22,442	2.6	21,622	2.9	22,250	3.9	0.3	(0.6)
2028	22,904	2.4	23,024	2.4	22,998	2.5	22,215	2.8	22,877	2.8	0.4	(0.1)
2029	23,398	2.2	23,499	2.2	23,494	2.2	22,787	2.4	23,369	2.2	0.4	(0.1)
2030	23,866	2.0	23,929	2.0	23,936	1.9	23,298	2.0	23,777	1.7	0.3	(0.4)
2031	24,333	2.0	24,360	2.0	24,368	1.8	23,757	1.8	24,168	1.6	0.1	(0.7)
2032	24,816	2.0	24,818	2.0	24,828	1.9	24,191	1.8	24,601	1.8	0.0	(0.9)
2033	25,333	2.1	25,319	2.1	25,339	2.1	24,646	1.9	25,109	2.1	0.0	(0.9)

Sources: BEA, Moody's Analytics

Table 2: Employment Impact of Debt Limit Scenarios

Clean Debt Limit Increase			Constitutional Crisis Difference with Clean Debt Limit			Payment Prioritization Difference with Clean Debt Limit			House Republican Plan Difference with Clean Debt Limit			Prolonged Breach Difference with Clean Debt Limit		
Mil	Change, ths		Mil	Change, ths	Limit	Mil	Change, ths	Limit	Mil	Change, ths	Limit	Mil	Change, ths	Limit
2022Q1	150.8	169	150.8	169	0	150.8	169	0	150.8	169	0	150.8	169	0
2022Q2	152.0	120	152.0	120	0	152.0	120	0	152.0	120	0	152.0	120	0
2022Q3	153.3	129	153.3	129	0	153.3	129	0	153.3	129	0	153.3	129	0
2022Q4	154.3	95	154.3	95	0	154.3	95	0	154.3	95	0	154.3	95	0
2023Q1	155.2	91	155.2	91	0	155.2	91	0	155.2	91	0	155.2	91	-0
2023Q2	155.4	23	155.4	23	0	155.4	23	0	155.4	23	0	155.4	23	-0
2023Q3	155.5	6	155.5	6	0	155.5	6	0	155.5	6	-0	155.5	6	-0
2023Q4	155.6	9	154.9	(55)	(645)	154.8	(72)	(807)	155.4	(12)	(213)	152.8	(265)	(2,739)
2024Q1	155.7	13	154.5	(43)	(1,208)	154.0	(74)	(1,676)	154.8	(57)	(911)	150.7	(216)	(5,027)
2024Q2	155.9	20	154.6	12	(1,289)	153.8	(19)	(2,065)	154.1	(65)	(1,766)	149.0	(166)	(6,885)
2024Q3	156.2	26	155.0	37	(1,175)	154.1	22	(2,100)	153.6	(58)	(2,602)	147.8	(124)	(8,381)
2024Q4	156.4	26	155.4	44	(994)	154.4	39	(1,968)	153.1	(47)	(3,325)	147.7	(8)	(8,720)
2025Q1	156.7	26	155.9	43	(815)	154.4	43	(1,792)	152.8	(25)	(3,832)	148.2	55	(8,423)
2025Q2	156.9	23	156.3	47	(577)	155.3	44	(1,585)	152.8	(5)	(4,119)	149.0	78	(7,879)
2025Q3	157.1	17	156.8	47	(279)	155.8	45	(1,304)	152.8	2	(4,266)	150.0	95	(7,093)
2025Q4	157.2	14	157.2	37	(52)	156.2	41	(1,039)	152.9	6	(4,345)	151.1	109	(6,138)
2026Q1	157.3	10	157.4	22	72	156.5	35	(788)	153.0	12	(4,328)	152.1	103	(5,210)
2026Q2	157.4	11	157.6	22	175	156.8	32	(577)	153.2	19	(4,246)	153.0	94	(4,381)
2026Q3	157.6	13	157.9	25	296	157.2	31	(400)	153.4	25	(4,127)	153.8	77	(3,740)
2026Q4	157.7	14	158.1	29	442	157.5	30	(242)	153.7	31	(3,961)	154.6	76	(3,123)
2027Q1	157.8	15	158.4	28	577	157.7	27	(117)	154.1	32	(3,789)	155.3	76	(2,507)
2027Q2	158.0	16	158.7	27	691	158.0	29	14	154.4	34	(3,609)	156.0	68	(1,985)
2027Q3	158.2	17	158.9	25	774	158.3	27	121	154.7	34	(3,436)	156.6	56	(1,592)
2027Q4	158.4	18	159.2	24	834	158.6	28	224	155.1	35	(3,271)	157.1	51	(1,262)
2028Q1	158.5	19	159.4	23	874	158.9	28	320	155.4	35	(3,103)	157.6	46	(990)
2028Q2	158.7	19	159.6	21	896	159.1	27	394	155.8	35	(2,942)	158.0	43	(752)
2028Q3	158.9	20	159.8	21	909	159.4	26	456	156.2	36	(2,780)	158.4	40	(551)
2028Q4	159.1	20	160.0	20	910	159.6	25	504	156.5	36	(2,616)	158.7	36	(392)
2029Q1	159.3	19	160.2	18	901	159.9	23	539	156.9	36	(2,446)	159.1	31	(271)
2029Q2	159.5	19	160.4	17	880	160.1	21	560	157.2	36	(2,275)	159.3	27	(187)
2029Q3	159.7	19	160.5	16	849	160.3	19	567	157.6	35	(2,107)	159.6	24	(135)
2029Q4	159.9	18	160.7	14	805	160.4	17	558	157.9	35	(1,936)	159.8	20	(122)
2030Q1	160.0	16	160.8	14	778	160.6	14	533	158.3	35	(1,750)	159.9	13	(149)
2030Q2	160.2	16	161.0	13	748	160.7	12	494	158.6	33	(1,579)	160.0	8	(228)
2030Q3	160.4	15	161.1	13	727	160.8	10	448	158.9	30	(1,428)	160.0	5	(329)
2030Q4	160.5	16	161.2	13	694	160.9	11	397	159.2	29	(1,301)	160.1	5	(443)
2031Q1	160.7	16	161.3	11	646	161.0	11	345	159.5	27	(1,193)	160.1	4	(557)
2031Q2	160.8	15	161.4	9	586	161.1	10	292	159.7	24	(1,102)	160.2	4	(663)
2031Q3	161.0	14	161.5	9	530	161.2	9	243	159.9	22	(1,026)	160.2	5	(758)
2031Q4	161.1	12	161.6	7	479	161.3	8	198	160.1	19	(962)	160.3	5	(835)
2032Q1	161.2	13	161.6	8	432	161.4	9	159	160.3	17	(920)	160.3	7	(891)
2032Q2	161.3	13	161.7	9	388	161.5	10	126	160.4	15	(903)	160.4	10	(928)
2032Q3	161.5	14	161.8	10	347	161.6	11	99	160.6	15	(894)	160.5	12	(950)
2032Q4	161.7	17	162.0	13	309	161.7	13	59	160.7	15	(912)	160.7	16	(961)
2033Q1	161.8	16	162.1	12	275	161.8	13	30	160.9	15	(919)	160.9	16	(957)
2033Q2	162.0	16	162.2	13	246	162.0	13	0	161.0	14	(939)	161.0	18	(939)
2033Q3	162.1	16	162.4	14	221	162.1	13	(31)	161.2	14	(960)	161.2	19	(911)
2033Q4	162.3	16	162.5	14	201	162.2	13	(59)	161.3	14	(978)	161.4	20	(871)

Table 2: Employment Impact of Debt Limit Scenarios (Cont.)

Clean Debt Limit Increase		Constitutional Crisis		Payment Prioritization		House Republican Plan		Prolonged Breach	
Mil	Change, ths	Mil	Change, ths	Mil	Change, ths	Mil	Change, ths	Mil	Change, ths
			Difference with Clean Debt Limit		Difference with Clean Debt Limit		Difference with Clean Debt Limit		Difference with Clean Debt Limit
2022	152.6	635	152.6	635	635	152.6	635	152.6	635
2023	155.4	279	155.3	263	259	155.4	274	154.7	210
2024	156.0	63	154.9	(38)	(112)	153.9	(147)	148.8	(594)
2025	157.0	92	156.5	166	144	152.8	(107)	149.6	79
2026	157.5	53	157.7	121	146	153.3	51	153.4	380
2027	158.1	60	158.8	107	116	154.6	124	156.3	288
2028	158.8	74	159.7	92	110	156.0	140	158.2	190
2029	159.6	77	160.5	73	91	157.4	144	159.4	126
2030	160.3	68	161.0	56	59	158.8	135	160.0	57
2031	160.9	61	161.4	43	41	159.8	105	160.2	19
2032	161.4	54	161.8	35	38	160.5	70	160.5	31
2033	162.1	63	162.3	50	51	161.1	59	161.1	64

Sources: BLS, Moody's Analytics

Table 3: Unemployment Rate Impact of Debt Limit Scenarios

	Clean Debt Limit Increase		Constitutional Crisis Difference with Clean Debt Limit,		Payment Prioritization Difference with Clean Debt Limit,		House Republican Plan Difference with Clean Debt Limit,		Prolonged Breach Difference with Clean Debt Limit,		
	%	%	%	%	%	%	%	%	%	%	
2022Q1	3.8	3.8	0.0	3.8	0.0	3.8	0.0	3.8	0.0	3.8	0.0
2022Q2	3.6	3.6	0.0	3.6	0.0	3.6	0.0	3.6	0.0	3.6	0.0
2022Q3	3.6	3.6	0.0	3.6	0.0	3.6	0.0	3.6	0.0	3.6	0.0
2022Q4	3.6	3.6	0.0	3.6	0.0	3.6	0.0	3.6	0.0	3.6	0.0
2023Q1	3.4	3.4	-0.0	3.4	-0.0	3.4	0.0	3.4	0.0	3.4	-0.0
2023Q2	3.4	3.4	-0.0	3.4	-0.0	3.4	0.0	3.4	0.0	3.4	-0.0
2023Q3	3.5	3.5	-0.0	3.5	0.0	3.5	0.0	3.5	0.0	3.5	-0.0
2023Q4	3.7	4.0	0.4	4.1	0.4	3.8	0.1	5.2	1.5	5.2	1.5
2024Q1	3.8	4.4	0.6	4.7	0.9	4.3	0.5	6.5	2.7	6.5	2.7
2024Q2	3.9	4.5	0.6	4.9	1.0	4.8	1.0	7.4	3.5	7.4	3.5
2024Q3	4.0	4.4	0.5	4.9	0.9	5.3	1.4	8.1	4.2	8.1	4.2
2024Q4	4.0	4.3	0.4	4.8	0.8	5.7	1.7	8.2	4.2	8.2	4.2
2025Q1	4.0	4.2	0.2	4.6	0.6	5.9	1.9	7.9	3.9	7.9	3.9
2025Q2	4.0	4.1	0.1	4.5	0.5	5.9	1.9	7.4	3.4	7.4	3.4
2025Q3	4.0	3.9	-0.0	4.3	0.3	5.8	1.9	6.9	2.9	6.9	2.9
2025Q4	4.0	3.8	-0.1	4.2	0.2	5.8	1.8	6.3	2.3	6.3	2.3
2026Q1	4.0	3.8	-0.2	4.1	0.1	5.7	1.7	5.8	1.7	5.8	1.7
2026Q2	4.1	3.9	-0.2	4.0	-0.0	5.7	1.6	5.3	1.3	5.3	1.3
2026Q3	4.1	3.9	-0.2	4.0	-0.1	5.6	1.5	5.0	0.9	5.0	0.9
2026Q4	4.1	3.8	-0.3	4.0	-0.1	5.5	1.4	4.8	0.6	4.8	0.6
2027Q1	4.2	3.8	-0.3	4.0	-0.2	5.4	1.3	4.5	0.4	4.5	0.4
2027Q2	4.2	3.8	-0.3	4.0	-0.2	5.3	1.1	4.3	0.2	4.3	0.2
2027Q3	4.2	3.8	-0.4	4.0	-0.2	5.2	1.1	4.2	0.0	4.2	0.0
2027Q4	4.2	3.8	-0.4	3.9	-0.2	5.1	1.0	4.1	-0.1	4.1	-0.1
2028Q1	4.2	3.8	-0.3	3.9	-0.2	5.1	0.9	4.0	-0.2	4.0	-0.2
2028Q2	4.2	3.8	-0.3	3.9	-0.2	5.0	0.8	3.9	-0.2	3.9	-0.2
2028Q3	4.2	3.8	-0.3	3.9	-0.3	4.9	0.8	3.9	-0.2	3.9	-0.2
2028Q4	4.1	3.8	-0.3	3.9	-0.3	4.8	0.7	3.9	-0.2	3.9	-0.2
2029Q1	4.1	3.8	-0.3	3.9	-0.3	4.8	0.6	3.9	-0.2	3.9	-0.2
2029Q2	4.1	3.9	-0.3	3.9	-0.3	4.7	0.6	3.9	-0.2	3.9	-0.2
2029Q3	4.1	3.9	-0.3	3.9	-0.2	4.6	0.5	3.9	-0.2	3.9	-0.2
2029Q4	4.1	3.9	-0.2	3.9	-0.2	4.6	0.4	4.0	-0.2	4.0	-0.2
2030Q1	4.2	3.9	-0.2	4.0	-0.2	4.5	0.4	4.0	-0.1	4.0	-0.1
2030Q2	4.2	4.0	-0.2	4.0	-0.2	4.5	0.3	4.1	-0.1	4.1	-0.1
2030Q3	4.2	4.0	-0.2	4.0	-0.1	4.4	0.2	4.1	-0.0	4.1	-0.0
2030Q4	4.2	4.0	-0.2	4.1	-0.1	4.4	0.2	4.2	0.0	4.2	0.0
2031Q1	4.2	4.0	-0.1	4.1	-0.1	4.4	0.2	4.3	0.1	4.3	0.1
2031Q2	4.2	4.1	-0.1	4.1	-0.1	4.4	0.2	4.3	0.1	4.3	0.1
2031Q3	4.2	4.1	-0.1	4.2	-0.0	4.4	0.2	4.4	0.2	4.4	0.2
2031Q4	4.2	4.1	-0.1	4.2	-0.0	4.4	0.1	4.4	0.2	4.4	0.2
2032Q1	4.2	4.2	-0.1	4.2	-0.0	4.4	0.1	4.4	0.2	4.4	0.2
2032Q2	4.2	4.2	-0.0	4.2	-0.0	4.4	0.2	4.5	0.2	4.5	0.2
2032Q3	4.2	4.2	-0.0	4.2	-0.0	4.4	0.2	4.5	0.2	4.5	0.2
2032Q4	4.2	4.2	-0.0	4.2	0.0	4.4	0.2	4.5	0.2	4.5	0.2
2033Q1	4.2	4.2	-0.0	4.2	0.0	4.4	0.2	4.4	0.2	4.4	0.2
2033Q2	4.2	4.2	-0.0	4.2	0.0	4.4	0.2	4.4	0.2	4.4	0.2
2033Q3	4.2	4.2	-0.0	4.2	0.0	4.4	0.2	4.3	0.2	4.3	0.2
2033Q4	4.2	4.2	-0.0	4.2	0.0	4.4	0.2	4.3	0.1	4.3	0.1
2022	3.6	3.6	0.0	3.6	0.0	3.6	0.0	3.6	0.0	3.6	0.0
2023	3.5	3.6	0.1	3.6	0.1	3.5	0.0	3.9	0.4	3.9	0.4
2024	3.9	4.4	0.5	4.8	0.9	5.0	1.1	7.5	3.6	7.5	3.6
2025	4.0	4.0	0.0	4.4	0.4	5.8	1.9	7.1	3.1	7.1	3.1
2026	4.1	3.8	-0.2	4.0	-0.0	5.6	1.6	5.2	1.1	5.2	1.1
2027	4.2	3.8	-0.3	4.0	-0.2	5.3	1.1	4.3	0.1	4.3	0.1
2028	4.2	3.8	-0.3	3.9	-0.2	4.9	0.8	3.9	-0.2	3.9	-0.2
2029	4.1	3.9	-0.3	3.9	-0.2	4.7	0.5	3.9	-0.2	3.9	-0.2
2030	4.2	4.0	-0.2	4.0	-0.2	4.4	0.3	4.1	-0.1	4.1	-0.1
2031	4.2	4.1	-0.1	4.1	-0.1	4.4	0.2	4.3	0.1	4.3	0.1
2032	4.2	4.2	-0.0	4.2	-0.0	4.4	0.2	4.5	0.2	4.5	0.2
2033	4.2	4.2	-0.0	4.2	0.0	4.4	0.2	4.4	0.2	4.4	0.2

Sources: BLS, Moody's Analytics

Table 4: 10-Year Treasury Yield Impact of Debt Limit Scenarios

	Clean Debt Limit Increase		Constitutional Crisis Difference with Clean Debt Limit,		Payment Prioritization Difference with Clean Debt Limit,		House Republican Plan Difference with Clean Debt Limit,		Prolonged Breach Difference with Clean Debt Limit,		
	%	%	bps	bps	%	%	bps	bps	%	bps	
2022Q1	2.0	2.0	0	2.0	0	2.0	0	2.0	0	2.0	0
2022Q2	2.9	2.9	0	2.9	0	2.9	0	2.9	0	2.9	0
2022Q3	3.1	3.1	0	3.1	0	3.1	0	3.1	0	3.1	0
2022Q4	3.8	3.8	0	3.8	0	3.8	0	3.8	0	3.8	0
2023Q1	3.7	3.7	0	3.7	0	3.7	0	3.7	0	3.7	0
2023Q2	4.0	4.0	0	4.0	0	4.0	0	4.0	0	4.0	0
2023Q3	4.1	4.1	0	4.1	0	4.1	0	4.1	0	4.1	0
2023Q4	4.1	4.0	-10	4.0	-13	4.1	-1	3.8	-30	3.8	-30
2024Q1	4.1	3.9	-17	3.8	-27	4.1	-4	3.5	-65	3.5	-65
2024Q2	4.1	3.9	-19	3.7	-37	3.9	-11	3.2	-85	3.2	-85
2024Q3	3.8	3.7	-19	3.4	-41	3.6	-20	2.9	-95	2.9	-95
2024Q4	3.8	3.6	-17	3.4	-43	3.5	-30	2.8	-97	2.8	-97
2025Q1	3.8	3.6	-15	3.3	-42	3.3	-41	2.8	-95	2.8	-95
2025Q2	3.7	3.6	-13	3.3	-40	3.2	-52	2.8	-91	2.8	-91
2025Q3	3.8	3.7	-10	3.4	-36	3.2	-63	3.0	-84	3.0	-84
2025Q4	3.9	3.8	-8	3.5	-32	3.2	-70	3.1	-75	3.1	-75
2026Q1	3.9	3.9	-6	3.7	-27	3.2	-77	3.3	-64	3.3	-64
2026Q2	4.0	3.9	-8	3.8	-21	3.2	-84	3.4	-55	3.4	-55
2026Q3	4.0	3.9	-8	3.8	-16	3.2	-85	3.6	-43	3.6	-43
2026Q4	4.0	3.9	-5	3.9	-10	3.2	-83	3.7	-31	3.7	-31
2027Q1	4.0	4.0	-4	3.9	-7	3.2	-84	3.8	-22	3.8	-22
2027Q2	4.0	4.0	-3	4.0	-5	3.2	-86	3.9	-14	3.9	-14
2027Q3	4.0	4.0	-2	4.0	-3	3.1	-87	4.0	-4	4.0	-4
2027Q4	4.0	4.0	-1	4.0	-2	3.2	-87	4.1	3	4.1	3
2028Q1	4.0	4.0	2	4.0	1	3.2	-85	4.1	12	4.1	12
2028Q2	4.0	4.1	6	4.1	5	3.2	-81	4.2	20	4.2	20
2028Q3	4.0	4.1	7	4.1	6	3.2	-80	4.2	23	4.2	23
2028Q4	4.0	4.1	8	4.1	9	3.2	-77	4.3	25	4.3	25
2029Q1	4.0	4.1	8	4.1	12	3.3	-73	4.3	27	4.3	27
2029Q2	4.0	4.1	9	4.1	14	3.3	-71	4.3	28	4.3	28
2029Q3	4.0	4.1	9	4.1	16	3.3	-67	4.3	30	4.3	30
2029Q4	4.0	4.0	9	4.1	18	3.3	-64	4.3	32	4.3	32
2030Q1	3.9	4.0	9	4.1	20	3.3	-60	4.3	34	4.3	34
2030Q2	3.9	4.0	9	4.1	21	3.4	-57	4.3	35	4.3	35
2030Q3	3.9	4.0	8	4.1	21	3.4	-53	4.3	36	4.3	36
2030Q4	3.9	4.0	7	4.1	21	3.4	-49	4.3	36	4.3	36
2031Q1	3.9	3.9	6	4.1	21	3.4	-45	4.2	36	4.2	36
2031Q2	3.9	3.9	5	4.1	21	3.5	-41	4.2	35	4.2	35
2031Q3	3.9	3.9	2	4.1	19	3.5	-38	4.2	32	4.2	32
2031Q4	3.9	3.9	2	4.0	18	3.5	-34	4.2	30	4.2	30
2032Q1	3.8	3.9	2	4.0	17	3.5	-32	4.1	27	4.1	27
2032Q2	3.8	3.9	2	4.0	16	3.5	-29	4.1	26	4.1	26
2032Q3	3.8	3.9	2	4.0	15	3.6	-27	4.1	24	4.1	24
2032Q4	3.8	3.8	2	4.0	13	3.6	-24	4.1	23	4.1	23
2033Q1	3.8	3.8	1	3.9	12	3.6	-22	4.0	21	4.0	21
2033Q2	3.8	3.8	1	3.9	10	3.6	-21	4.0	20	4.0	20
2033Q3	3.8	3.8	0	3.9	9	3.6	-20	4.0	18	4.0	18
2033Q4	3.8	3.8	-0	3.9	7	3.6	-19	4.0	16	4.0	16
2022	3.0	3.0	-0	3.0	-0	3.0	-0	3.0	-0	3.0	-0
2023	4.0	4.0	-2	4.0	-3	4.0	-0	3.9	-8	3.9	-8
2024	3.9	3.8	-18	3.6	-37	3.8	-16	3.1	-85	3.1	-85
2025	3.8	3.7	-12	3.4	-38	3.2	-57	2.9	-87	2.9	-87
2026	4.0	3.9	-7	3.8	-18	3.2	-82	3.5	-48	3.5	-48
2027	4.0	4.0	-2	4.0	-4	3.2	-86	3.9	-9	3.9	-9
2028	4.0	4.1	5	4.1	5	3.2	-81	4.2	20	4.2	20
2029	4.0	4.1	9	4.1	15	3.3	-69	4.3	29	4.3	29
2030	3.9	4.0	8	4.1	21	3.4	-55	4.3	36	4.3	36
2031	3.9	3.9	4	4.1	20	3.5	-40	4.2	33	4.2	33
2032	3.8	3.9	2	4.0	15	3.6	-28	4.1	25	4.1	25
2033	3.8	3.8	1	3.9	9	3.6	-20	4.0	19	4.0	19

Sources: Federal Reserve, Moody's Analytics

Endnotes

- 1 The Moody's Analytics white paper "[Debt Limit Brinkmanship \(Again\)](#)" provides additional relevant analysis on the Treasury debt limit.
- 2 This is consistent with the X-date ranges from the [Bipartisan Policy Center](#) and the [Congressional Budget Office](#).
- 3 The [Moody's Analytics macroeconomic model](#) of the U.S. and global economies is similar in theory and empirics to those used by the Federal Reserve Board and Congressional Budget Office for forecasting, budgeting and policy analysis.
- 4 The Moody's Analytics baseline, or most likely, outlook is similar to this scenario except that to pass legislation increasing the debt limit and the fiscal 2024 budget we expect there will be a token compromise between Democrats and Republicans. At least some House Republican votes will be needed, and the quid pro quo to get these votes is assumed to be some mutually agreeable tweaks to the budget rules, and a small reduction in future budgeted non-defense discretionary government outlays, excluding funds for the Veterans Administration.
- 5 The assumption that lawmakers temporarily suspend the debt limit to line it up with the start of fiscal 2024 is common to all of the scenarios we consider in this analysis. Not only is the Treasury required to slash its cash balance to practically zero by September 30 when the suspension ends, but the legislation temporarily suspending the debt limit through fiscal 2023 comes with other strings attached that prevent the Treasury from targeting the G Fund of Federal Employees' Retirement System Thrift Savings Plan, which normally provides the Treasury significant headroom under the debt limit. As a result, October 1 is the effective X-date once the suspension ends. This is similarly true in all the scenarios we put forth in this analysis.
- 6 A simple example illustrates. The seven-year Treasury bond is trading at 3.5% and there is an upcoming auction for these securities of \$35 billion. Suppose the Treasury instead offers \$35 billion face value of seven-year bonds at 5%. The bond market should price them at around 109% of par. This would bring in \$38 billion in proceeds, which would retire \$38 billion in Treasury debt, but increase the debt subject to the limit by only \$35 billion for a net reduction in debt subject to the limit of \$3 billion. This could be scaled up by issuing even higher coupons, for example the Treasury might bring in \$14 billion with \$35 billion of face value and a 10% coupon.
- 7 There are likely many unintended consequences as well given how engrained Treasury bonds are in a wide variety of contracts. The tax consequences of large premiums are also unknown and could be complicated.
- 8 There have been [legislative attempts](#) to prioritize the Treasury's payments in the case of breach of the default limit. Social Security payments, payments to the military, and interest and principal payments to Treasury bond investors receive priority. But the legislation has never become law and would likely not mitigate a serious reaction by global investors, who would appropriately conclude that this prioritization would be politically untenable and not stand for long.
- 9 Additional documentation from Moody's Investors Service is available upon request. The rating agency plans to release an updated FAQ on the debt limit later in March.
- 10 This may overstate House Republicans' budget-cutting ambitions. If, for example, their goal is to balance the primary budget by 2033 or to implement cuts sufficient to stabilize the federal debt-to-GDP ratio near its current level of just less than 100%, the budget cuts needed would be close to half of those assumed in this scenario to balance the full budget.
- 11 Federal Reserve policy in the scenarios is determined endogenously with the Moody's Analytics macroeconomic model. The federal funds rate equation in the model is a reaction function, which accounts for the Fed's dual mandate of low and stable inflation and full employment. It also captures financial conditions, which impact the transmission of Fed policy to the economy, and global economic conditions.

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