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CHIEF INVESTMENT OFFICE

Fixed Income Spotlight

How Much Does Rising U.S. Treasury Supply Matter?

March 2024

All data, projections and opinions are as of the date of this report and subject to change.

SUMMARY

- Total U.S. federal debt is high both in absolute terms and relative to the economy and is projected to increase further with limited political appetite or ability to significantly slow deficit spending.
- Elevated Treasury issuance to fund these deficits, therefore, may keep rates slightly elevated and lead to more market volatility in the near-term, but in our view the effect should be very manageable.
- Concerns about a significant spike in interest rates over a longer period, however, are overblown in our opinion. In many developed market economies historically, excessive debt loads have actually led to lower interest rates when certain conditions were met.
- Investors with excessive cash balances should continue to look for opportunities to be close to fully invested across asset classes. Within Fixed Income, we continue to express a preference for clients to be slightly long to their strategic duration targets based on our expectations for inflation and the economy and as a diversifier for Equity risk, even in light of considerations about the budget deficit and high debt loads.

View the CIO Viewpoint ▶ View the CIO Asset Allocation Guidelines ▶

ASSET CLASS WEIGHTINGS

Asset Class	Underweight		Neutral	Overweight	
Global Fixed Income		●			
U.S. Governments				●	
U.S. Mortgages				●	
U.S. Corporates		●			
International Fixed Income			●		
High Yield		●			
U.S. Investment-grade Tax Exempt		●			
U.S. High Yield Tax Exempt		●			

These Chief Investment Office (CIO) views relate to fully-diversified, multi-asset class portfolio and use the asset class breakdown of the CIO "High Tax/Balanced" Allocation. Source: Global Wealth & Investment Management Investment Strategy Committee as of March 5, 2024.

FIXED INCOME U.S. RATES FORECAST

(% end of period)	Spot	1Q24	2Q24	3Q24	4Q24
Fed Funds Range	5.33	5.25-5.50	5.00-5.25	4.75-5.00	4.50-4.75
2-Year T-Note	4.69	4.75	4.50	4.25	4.00
5-Year T-Note	4.29	4.50	4.40	4.25	4.15
10-Year T-Note	4.29	4.40	4.30	4.25	4.25
30-Year T-Bond	4.44	4.70	4.65	4.65	4.75

Source: BofA Global Research U.S. Rates Research; March 15, 2024; spot price as of that date. Note: Federal funds rate forecasts are model expectations; other values are for market rates. The forecasts in the table above are the baseline view from BofA Global Research team. The Global Wealth & Investment Management (GWIM) Investment Strategy Committee (ISC) may make adjustments to this view over the course of the year and can express upside/downside to these forecasts. **There can be no assurance that the forecasts will be achieved. Economic or financial forecasts are inherently limited and should not be relied on as indicators of future investment outcomes.**

FIXED INCOME AT A GLANCE

Rates Markets	29-Feb	Last Month	Change
Fed Funds rate	5.38%	5.38%	+0 bps
3-month Treasury Bills	5.38%	5.37%	+2 bps
U.S. 2-year Note	4.62%	4.21%	+41 bps
U.S. 5-year Note	4.25%	3.84%	+41 bps
U.S. 10-year Note	4.25%	3.91%	+34 bps
U.S. 30-year Note	4.38%	4.17%	+21 bps
FF / 10s Curve	-112 bps	-146 bps	+34 bps
2s / 10s Curve	-37 bps	-30 bps	-7 bps
German 10-year	2.41%	2.17%	+25 bps
UK 10-year	4.12%	3.79%	+33 bps
Japanese 10-year	0.70%	0.73%	-2 bps

Credit Markets	29-Feb	Last Month	Change
U.S. Investment Grade (Spread)	+96 bps	+96 bps	+0 bps
U.S. High Yield (Spread)	+312 bps	+344 bps	-32 bps
U.S. High Yield (Yield)	7.86%	7.80%	+6 bps
Emerging Markets (U.S.$, Spread)	+277 bps	+301 bps	-24 bps
10-year AAA Municipal	2.53%	2.46%	+7 bps
10-year Muni / Treasury Ratio	59.5%	62.9%	-3.4%

Index Returns	1-month	12-months	Year-to-Date
U.S. Treasury	-1.3%	-0.1%	-1.6%
U.S. MBS	-1.6%	-0.4%	-2.1%
U.S. ABS	-0.3%	4.3%	0.2%
U.S. CMBS	-0.3%	3.6%	1.2%
U.S. Corporate	-1.5%	2.6%	-1.7%
U.S. High Yield	0.3%	9.6%	0.3%
U.S. Leveraged Loans	0.9%	12.1%	1.6%
U.S. Municipals	0.1%	3.0%	-0.4%
U.S. Municipal High Yield	0.8%	4.9%	0.3%

Bps refers to basis points. Source: Bloomberg. Data as of February 29, 2024 and subject to change. **Past performance is no guarantee of future results. Please refer to the end of the document for asset class proxies and index definitions.**

U.S. total federal debt has risen by an astounding 222% in the last 15 years and is up 48% since 2020 alone.[1] The combination of continued high fiscal deficits, increasing debt load relative to the economy, a greater proportion of non-discretionary spending as part of the federal budget, and the inability of Congress to put forward meaningful reforms will be a persistent concern for markets and the economy in the coming years.

Since 2002, federal annual expenditures have exceeded revenues, creating a yearly deficit that has added to the national debt. In 2023, this deficit was approximately $1.7 trillion, increasing the national debt to over $33 trillion for the fiscal year ending September 30, 2023. The Congressional Budget Office (CBO) projects that fiscal year 2024 will end with a deficit of approximately $1.6 trillion. Tax cuts, discretionary spending expansion and stimulus spending measures have accounted for most of this deficit growth for over two decades.

The U.S. Treasury finances the national debt by issuing Treasury securities. Low interest rates in prior years meant this could be done at a reasonable cost. However, with rates currently higher than they have been in 15 years, the cost of financing persistent deficits and rolling over maturing debt has increased substantially. Higher interest payments add to the mismatch of tax revenues with government expenditures, exacerbating deficits. Increasing revenues (via tax rate increases) and reducing spending (including revisions to Social Security and Medicare) are potential solutions to reduce deficits, but enacting meaningful changes on either side of this equation is challenging. Indeed, neither of the leading presidential candidates have a plan to reduce the long-term deficit trajectory.

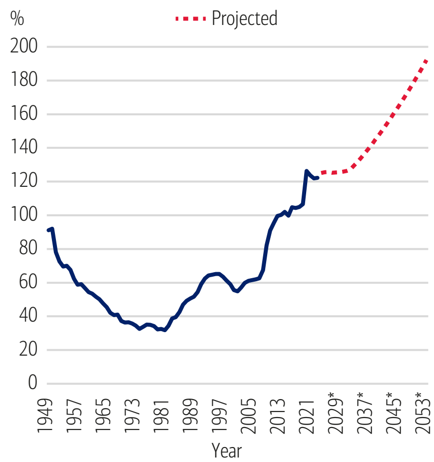
On the revenue side, several legislation items passed since 2001 have been a drag on tax inflows. These tax cuts were generally initiated as partisan legislation with a "sunset" date, but history shows that allowing tax breaks to expire is politically unpopular—regardless of the party in power. For example, significant tax cuts were passed in 2001 and 2003 with a Republican president and Congressional majority. While most provisions were set to expire in 2010, legislation passed in 2010 and 2013 by a divided Congress and Democratic president extended most of these tax provisions. Likewise, 2017 tax legislation included many tax cuts set to expire after 2025; however, both presumptive 2024 presidential nominees have expressed a desire to extend those cuts to avoid a potential tax increase for their constituents. Additionally, a tax package has recently passed the House with overwhelmingly bipartisan support and is awaiting consideration in the Senate. If passed, this is estimated to reduce 2024 revenue by $136 billion, adding to the current fiscal year deficit projection (but decreasing spending in later years). Overall, the near-term expectation is that tax legislation will do little to reduce the current federal budget deficit—and may even increase it.

To illustrate the effect of government spending on deficits and budget austerity as a means of reducing them, it is helpful to consider the allocations to various spending categories. For 2024, total government expenditures are estimated to be approximately $6.5 trillion. This figure comprises of $3.9 trillion (60%) of mandatory spending (including Medicare and Social Security); $1.7 trillion (27%) of discretionary spending, of which almost half is defense spending; and approximately $870 billion (13%) of interest expense.

The annual federal budget and appropriations process relates only to the $1.7 trillion discretionary portion. Therefore, meaningfully reducing a $1.6 trillion deficit simply through reductions in discretionary spending is unrealistic. For example, the spending caps under the 2023 debt ceiling agreement, known as The Fiscal Responsibility Act of 2023, were the product of months of high stakes negotiations and cut only around $100 billion from the president's fiscal 2024 budget (roughly 1.5% of the budget and 6.3% of the deficit). While not insignificant, this is clearly not the path to a balanced budget.

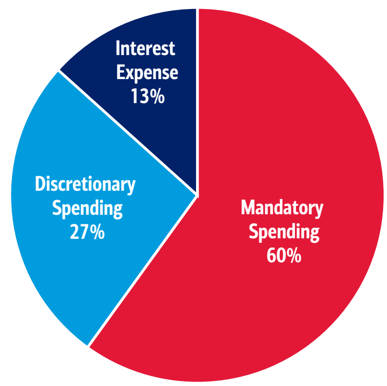
Based on CBO projections for the 10-year budget window, the annual deficit would expand to around $2.6 trillion for 2034, or considerably higher if the 2017 tax act

Exhibit 1: Gross Federal Debt to Gross Domestic Product (GDP).



*Estimate. Sources: Haver Analytics and CBO. March 13, 2024.

Exhibit 2: 2024 Fiscal Outlays by Category.



Source: Congressional Budget Office. February 2024.

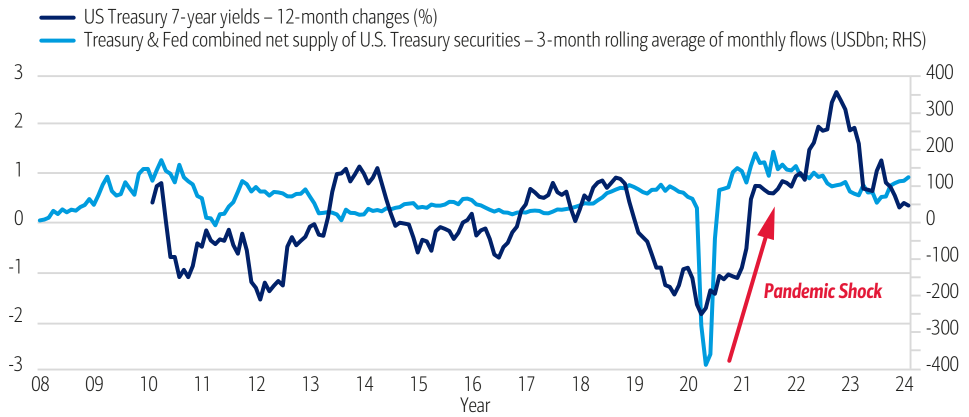
[1] Bloomberg. March 4, 2024.

provisions are continued for some or all taxpayers. Any plan to address this deficit would likely include a combination of systemic changes to government programs, limits on discretionary spending increases and tax increases. However, given the obstacles to making meaningful changes to both tax and spending policies, along with the higher cost of financing the debt, we expect federal deficits to remain in the near term, and the continued issuance of Treasury debt to finance these deficits.

Increasing Treasury issuance to fund a growing deficit while the Federal Reserve (Fed) is simultaneously reducing the amount of Treasury securities they own—via quantitative tightening (QT)—has heightened investor concerns that the market may have difficulty absorbing excess supply without a subsequent spike in yields. The expected delay in QT tapering to May has exacerbated these concerns since the public will be faced with absorbing an additional $60 billion of Treasurys per month for as long as QT continues. Following the January refunding announcement and the Fed's hawkish messaging at the first Federal Open Market Committee (FOMC) meeting of the year, BofA Global Research increased its forecast for 2024 bill supply to $278 billion after initially expecting net bill paydowns in 2024.[2] These sizeable increases in projections for both the fiscal deficit and the U.S. Treasury supply have, understandably, generated concern among investors about who will buy the additional supply—and at what yields. Rising government debt ratios and interest costs are starting to crowd out spending on critical government programs, and some research suggests that each one percentage point increase in the debt/GDP ratio has resulted in a 4.5 basis point (bps) increase in real (i.e., inflation-adjusted) 10-year Treasury yields since the 2010s.[3]

So far, however, the market has absorbed increased Treasury-bill (T-bill) supply relatively easily. February auctions were met with reasonably stable demand and mostly muted market reaction.[4] We expect demand to remain stable as yields are still very attractive relative to recent history and versus expected inflation, and many institutional investors are likely to continue to seek out relatively "safe" and liquid assets in the form of U.S. government debt for diversification benefits, regulatory reasons (for certain sectors), and currency management practices (for certain foreign buyers). Further, the relationship of Treasury supply to yields is very weak, according to Absolute Strategy Research. The Fed's and U.S. government's combined net Treasury supply has not shown a meaningful historical relationship to Treasury yield dynamics in most instances, aside from the rally caused by huge Fed quantitative easing inflows in the aftermath of the pandemic shock in Q2 2020 (Exhibit 3). Ultimately, increased T-bill supply may keep rates slightly elevated and lead to some more volatility in the rates market than would otherwise be expected, but, in our view, the effect will be minimal, and we believe that concerns regarding supply causing a near-term surge in rates are largely overblown.

Exhibit 3: There Is An Unclear Relationship between U.S. Treasury Yields and Net Supply.

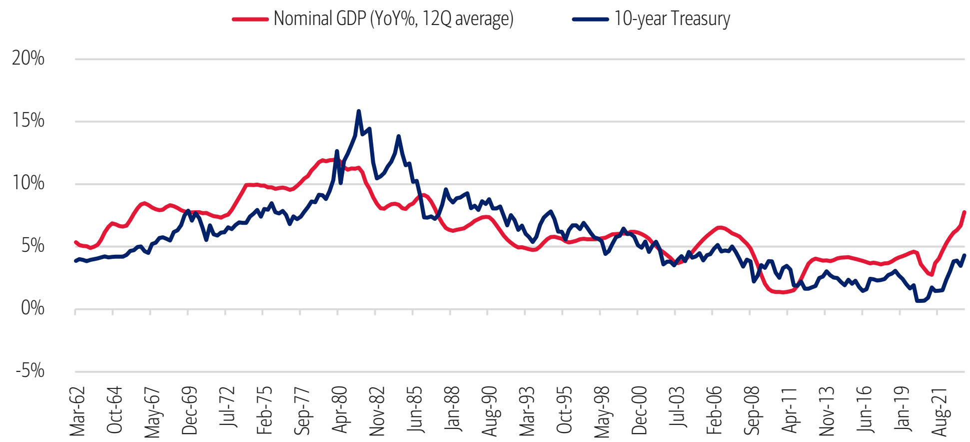


Source: Absolute Strategy Research, Bloomberg. Data as of March 6, 2024.

2 BofA Global Research. February 2, 2024.
3 Empirical Research Partners. January 22, 2024.
4 Bloomberg. February 29, 2024.

Over longer periods of time, the effect of debt supply on bond yields becomes even more muddled. Academic research[5] has shown that the primary determinant of long-term intertest rates is short-term interest rates, with both inflation and economic growth playing a factor. This is one reason we have, only somewhat jokingly, said that the best U.S. rates forecaster is nominal GDP—over long periods of time, nominal GDP and 10-year nominal interest rates have been highly correlated.

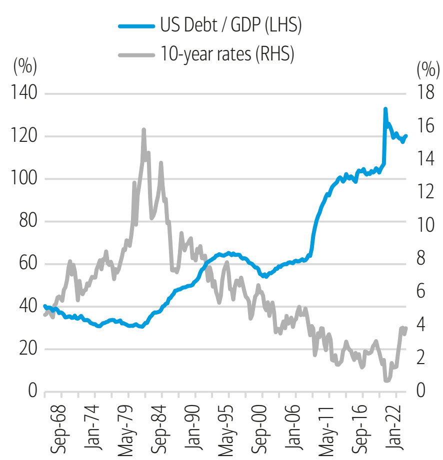
Exhibit 4: Over Longer Periods of Time, The 10-year U.S. Treasury Has Been Highly Influenced by Short-term Interest Rates, Economic Growth and Inflation Which Are All Interrelated.



Source: Bloomberg. March 5, 2024.

Furthermore, when certain conditions are met—a developed market economy with little-to-no foreign currency debt, and an increase in debt not coincident with either massive money supply growth or a destruction of large sectors of the economy in war-time—there is the potential for higher levels of public debt leading to lower interest rates. As counterintuitive as this seems, there is both theoretical and empirical evidence to support it. Increasing levels of public debt, especially when not put to productive use by the public sector, can slow economic activity and inflation; those factors overwhelm the negative effect on yields from higher supply. Both Japan and the U.S. have provided robust evidence of this thesis. In 1990, Japanese 10-year rates were over 8%[6] and debt/GDP was 52%.[7] By 2019, Japanese Debt/GDP was over 200%,[8] and rates not only did not spike, it went negative. Those who thought that this was a "Japan-only" issue did not have to look so far abroad to find further evidence. At various points in 2007 in the U.S., 10-year rates were above 5% when publicly traded U.S. Treasurys were $4.5 trillion by year-end. By 2020, that amount had increased to over $20 trillion—a more than four-fold increase—while 10-year rates declined from 5% to 0.5% at their lows (Exhibit 5). Only when massive central bank purchases combined with fiscal profligacy to put trillions of dollars in consumers' pockets—leading to soaring inflation and higher expected short-term rates—did long-term rates spike. Therefore, we conclude that higher debt levels alone are a not sufficient condition for causing an interest rate spike.

Exhibit 5: Debt/GDP Ratio vs. 10-year Treasury Yields.



Source: Bloomberg. March 5, 2024.

The growing deficit has raised other concerns—the potential for another U.S. credit rating downgrade, which could also impact Treasury yields. The U.S. used to be rated triple-A by all three major rating agencies. However, it was downgraded to AA+ by S&P in 2011 and by Fitch in 2023. Both S&P's and Fitch's ratings now have stable outlooks, meaning they are not likely to change under current conditions. Moody's still rates the U.S. Aaa, citing "exceptional economic strength, high institutional and governance

[5] "An Inquiry Concerning Long-term U.S. Interest Rates Using Monthly Data," Tanweer Akram and Huiqing Li. Levy Economics Institute of Bard College, Working Paper No. 894. August 2017.

[6] Bloomberg, Generic 10-year Government bond yield as of January 1990.

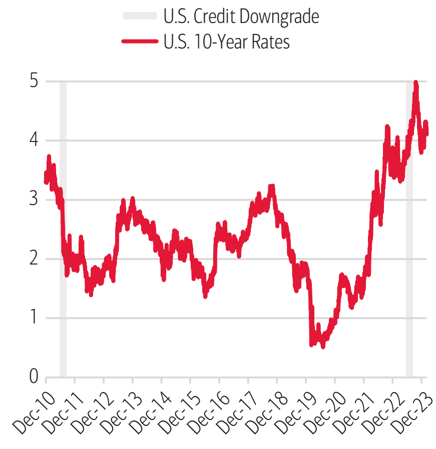
[7] FRED Economic Data. St Louis Fed as of January 1990.

[8] Bloomberg, Central Intelligence Agency. Japan Debt as a Percentage of GDP as of 2019.

strength, and the unique and central roles of the U.S. dollar and Treasury bond market in the global financial system." However, Moody's lowered its outlook to negative in November 2023 due to large and growing fiscal deficits, which were weakening debt affordability and the risk that political polarization could further constrain the ability of policymakers to correct this. Moody's warned that it could downgrade the U.S. if it concluded that policymakers were unlikely to respond to the country's growing fiscal challenges over the medium term or if there were a "deterioration in monetary and macroeconomic policy effectiveness or the quality of legislative and judicial institutions." We believe the risk of a Moody's downgrade is real, but we note that the Treasury market did not react very negatively to previous downgrades. In fact, the day after S&P's August 5, 2011, downgrade, 10-year Treasury yields declined 24 bps, followed by declines of 7 bps on day 2 and 14 bps on day 3. Following Fitch's August 1, 2023, downgrade, 10-year Treasury yields did rise 5 bps on day 1 and 10 bps on day 2, but then they declined 14 bps on day 3 for a net increase of just one basis point (Exhibit 6). Therefore, given the lack of market damage caused by the two previous U.S. downgrades, we are not overly concerned by the prospects of another one.

Over the next several months, the market will be closely watching developments regarding a potential U.S. credit downgrade, the growing deficit, the expected increase in Treasury supply, and any resulting market impact. We will continue monitoring these dynamics alongside the path of the economy and inflation, which we ultimately believe are the most critical drivers of interest rates.

Exhibit 6: U.S. Treasury Market During Previous U.S. Credit Downgrades.



Source: Bloomberg. March 4, 2023.

Glossary

Duration is the weighted average of the times until those fixed cash flows are received.

Nominal yields are calculated by dividing total interest paid annually by the face, or par, value of the bond.

Real yields are the returns that a bond investor earns from interest payments after accounting for inflation.

Taxable-equivalent yield is the return that a taxable bond would need to yield in order to equal the yield on a comparable tax-exempt bond, such as a municipal bond.

Asset Class Proxies and Index Definitions

Securities indexes assume reinvestment of all distributions and interest payments. Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index. Indexes are all based in dollars.

Personal consumption expenditures (PCE) price index is a measure of the spending on goods and services by people of the United States. According to the Bureau of Economic Analysis (BEA), a U.S. government agency, PCE accounts for about two-thirds of domestic spending and is a significant driver of gross domestic product.

U.S. Financials/U.S. Industrials/AA-Credit/BBB-Credit/A-Credit/ICE BofA U.S. Corporate Index tracks the performance of U.S. dollar denominated investment grade corporate debt publicly issued in the US domestic market.

U.S. Municipals/Bloomberg Muni Bond Index measures the performance of the Bloomberg U.S. Municipal bond market, which covers the USD- denominated Long-Term tax-exempt bond market with four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

U.S. High Yield/BB-Credit/B-Credit/CCC-Credit/Bloomberg U.S. Corporate High Yield Index: The Bloomberg U.S. Corporate High Yield Bond Index measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below.

U.S. Municipal High Yield/Bloomberg High Yield Municipal Index is a benchmark that covers the high yield portion of the USD-denominated long-term tax exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

Emerging Market/Bloomberg Emerging Market USD Index is a flagship hard currency Emerging Markets debt benchmark that includes USD-denominated debt from sovereign, quasi sovereign, and corporate EM issuers.

Cash/U.S. Treasury/Bloomberg U.S. Treasury Index Total Return measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Treasury bills are excluded by the maturity constraint, but are part of a separate Short Treasury Index. STRIPS are excluded from the index because their inclusion would result in double-counting.

U.S. Mortgage-backed Securities (MBS)/ABS/Bloomberg U.S. Mortgage-backed Securities Index is the U.S. MBS component of the U.S. Aggregate index. The MBS Index covers the mortgage-backed pass-through securities of Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

U.S. Corporates/Bloomberg U.S. Corporate Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes U.S. dollar-denominated securities publicly issued by U.S. and non-U.S. industrial, utility and financial issuers. The U.S. Corporate Index is a component of the U.S. Credit and U.S. Aggregate Indices.

Bloomberg Capital Asset-Backed Securities (ABS) Index is composed of debt securities backed by credit card, auto and home equity loans that are rated investment grade or higher by Moody's.

Bloomberg U.S. Commercial Mortgage Backed Securities (CMBS) Index is the Bloomberg Non-Agency Investment Grade CMBS: BBB Total Return Index Unhedged.

ICE BofA Investment-grade Index tracks the performance of U.S. dollar-denominated, investment grade (IG), asset-backed securities publicly issued in the U.S. domestic market.

ICE BofA High Yield tracks the performance of U.S. dollar denominated below investment grade corporate debt publicly issued in the U.S. domestic market.

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